Hangar demolition in Sept-Iles

Specification issued for tender – Structural

Public Works and Government Services Canada

December 10, 2020
Revision 1

Ref. No.: 677671

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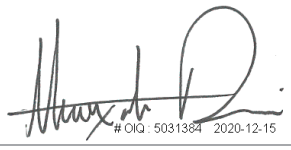
Prepared by:



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MODIFICATION LIST		
REVISION NO.	DATE	DESCRIPTION
A	October 16, 2020	Issued for preliminaries 50%
B	November 9, 2020	Issued for preliminaries 99%
0	December 1, 2020	Issued for Tender
1	December 14, 2020	Issued for Tender

PARTIE 1 GENERAL

1.1 DESCRIPTION OF WORK

.1 The work consists of demolishing a surplus hangar, disposing of demolition materials and redeveloping the site. This hangar is located on rue de l'Aviation Générale at Sept-Îles Airport. The surface area of the building is approximately 140 square metres on a single floor. The work also includes the demolition and disposal of foundation materials and of mechanical and electrical equipment in the building.

1.2 WORK SEQUENCE

.1 Perform the work in stages so as to meet the requirements for selective demolition of various building components.

.2 Keep one traffic lane open at all times.

.3 Ensure the premises are protected.

1.3 USE OF PREMISES BY THE CONTRACTOR

.1 The site may be used without restrictions until the work has been substantially completed.

.2 Coordinate use of the premises with the Departmental Representative.

1.4 WORK COVERED BY THE CONTRACTUAL DOCUMENTS

.1 The work covered by this contract includes the demolition of a surplus hangar at Sept-Îles Airport and the disposal of materials.

.2 The work includes but is not limited to:

.1 Selective demolition of materials:

.1 Windows and doors;

.2 Ventilation/heating ducts;

.3 Electric baseboards;

.4 Old furnace chimney;

.5 Propane gas unit heater, gas pipework, wall chimney, thermostat and wires;

.6 Oil tank;

.7 Metalwork;

.8 Furniture;

.9 Sanitary appliances (toilets, sinks, urinals, etc.);

.10 Well pump and all its components such as operating cabinet, related pipework and heating wires;

.11 Hot water tank/waste water;

.12 Internal power sockets, switches and all wiring;

.13 Power input and distribution panels;

.14 Remnants of the old oil heating system.

.2 Demolition of materials not listed for selective demolition and disposal at the Sept-Îles landfill centre.

.3 Draining of furnace oil supply ducts and hot water tank and other disposals according to the criteria approved by the Ministère de l'Environnement et de la Lutte contre les changements climatiques (MDDELCC).

.4 Demolition of concrete structures, consisting of foundations, slabs, etc., and disposal according to the regulations in force based on the type of materials and contamination.

.5 Demolition of paving areas and disposal according to the regulations in force.

1.5 USE OF PREMISES BY THE MINISTRY

.1 The premises are unoccupied.

.2 Collaborate with the Departmental Representative in setting up a work schedule so as to reduce any conflicts and allow the latter to use the premises.

1.6 ITEMS PROVIDED BY THE DEPARTMENTAL REPRESENTATIVE

.1 Not applicable

1.7 EXISTING UTILITY SERVICES

.1 Before interrupting utility services, notify the Departmental Representative and the utility companies concerned and obtain the necessary authorizations.

.2 Provide alternate routes for personnel and vehicle traffic.

.3 Submit a schedule for the approval of the Departmental Representative relating to the shutdown or closure of active facilities or works, including the interruption of communications or power supply services. Follow the approved schedule and notify the parties affected by these inconveniences.

1.8 DOCUMENTS REQUIRED

.1 Keep a copy of each of the following documents on site:

.1 Contract drawings;
.2 Quotation;
.3 Addenda;
.4 Revised workshop drawings;
.5 Changes requests;
.6 Other changes made to the contract;
.7 Environmental measures;
.8 Copy of approved implementation schedule;
.9 Health and safety plan and other safety related documents;
.10 Other documents indicated.

PARTIE 2 PRODUCTS

.1 Not applicable

PARTIE 3 EXECUTION

.1 Not applicable.

END OF SECTION

PARTIE 1 GENERAL

1.1 DEFINITIONS

.1 Activity: Specific work performed as part of a project. An activity normally has a planned duration, a projected cost and anticipated resource requirements. Activities can be subdivided into tasks.

.2 Bar chart (Gantt chart): Graphical representation of data related to a project implementation schedule. In a standard bar chart, activities or other project items are presented from top to bottom, to the left of the graph, while dates are presented at the top, from left to right and the duration of each activity is indicated by horizontal segments placed between the dates. In general, the bar chart is generated from a commercially available computerized project management system.

.3 Base reference: Approved initial plan (for a project, work package or activity), taking into account approved changes in the scope of the project.

.4 Working week: Working week of five (5) days, from Monday to Friday, defining the working days for the purposes of submitting the bar chart (Gantt chart).

.5 Duration: Required number of work periods (except holidays and other periods of absence) to perform an activity or other project item. The duration is usually expressed in working days or working weeks.

.6 Overall plan: Summary program showing main activities and milestones.

.7 Milestone: Important event in project implementation, most often corresponding to the completion of a significant (deliverable) product.

.8 Implementation schedule: Dates set for the performance of activities and achievement of milestones. Dynamic and detailed program of tasks or activities required to achieve project milestones. The monitoring and control process is based on the implementation schedule for conducting and controlling activities; it is this process that defines the decisions that will be taken throughout the project.

.9 Scheduling – Project planning, monitoring and control: Overall system managed by the Ministry Representative to track work completion against specific stages or milestones.

1.2 REQUIREMENTS

.1 Ensure that the overall plan and implementation schedule are workable and that they adhere to the specified duration of the contract.

.2 The overall plan shall provide for completion of the work according to the specified milestones, within the agreed time frame.

.3 Limit the duration of activities to approximately ten (10) working days to allow for the setting up of progress reports.

.4 The contract award or work start date, the rate of progress of the work, the issuing of the provisional certificate of completion and the final certificate of completion are defined stages of the project and are key conditions of the contract.

1.3 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

.1 A bar chart (Gantt chart) that will serve as an overall plan and is to be used for planning and monitoring work and producing progress reports shall be submitted to the

Departmental Representative no later than ten (10) working days after the contract has been awarded.

.2 The implementation schedule shall be submitted to the Departmental Representative no later than five (5) working days after acceptance of the overall plan.

1.4 OVERALL PLAN

.1 The implementation schedule shall be structured so as to allow orderly planning, organization and execution of work according to the bar chart (Gantt chart).

.2 The Ministry Representative shall review the schedule and return it to the Contractor within five (5) working days.

.3 If the schedule is deemed unworkable, it shall be reviewed and resubmitted by no later than five (5) working days after having received it.

.4 The agreed revised schedule will become the overall plan, which will serve as a reference for updates.

1.5 IMPLEMENTATION SCHEDULE

.1 Develop a detailed implementation schedule based on the overall plan.

.2 The detailed implementation schedule shall include at least the stages corresponding to the following activities.

.1 Contract award.
.2 Permits.
.3 Mobilization.
.4 Excavation.
.5 Demolition of structure.
.6 Slab demolition and pile levelling.
.7 Removal of granular foundation under slab and removal of paving area.
.8 Backfilling of site.

1.6 WORK ORDER PHASING

.1 The Contractor shall consider the specific requirements set out in this section for phasing the work order so as to maintain the operational services of the existing terminal.

1.7 WORK PROGRESS REPORTS

.1 Update the implementation schedule once a week to reflect changes to activities, the completion of activities and ongoing activities.

.2 Attach a narrative report to the implementation schedule indicating the work progress status, comparing the progress against the baseline schedule and presenting current forecasts, expected delays, the impacts of these items and potential mitigation measures.

1.8 PROJECT MEETINGS

.1 Discuss the implementation schedule at regular site meetings; identify activities that are behind schedule and plan ways to make up for these delays. Activities for which the start date or end date exceeds the respective approved dates listed in the baseline schedule are considered overdue.

.2 Also discuss delays due to bad weather and negotiate measures to make up for them.

PARTIE 2 PRODUCTS

.1 Not applicable

PARTIE 3 EXECUTION

.1 Not applicable

END OF SECTION

PARTIE 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 Section 01 32 16.19 – Work scheduling – bar chart (Gantt chart)

.2 Section 02 41 16.09 – Demolition of structures

.3 Section 01 35 29.06 – Health and Safety

.4 Section 01 35 43 – Environmental protection

.5 Section 01 74 19 – Waste management and disposal

.6 Section 02 82 00.01 – Low risk asbestos work

1.2 REFERENCE STANDARDS

.1 Not applicable.

1.3 ADMINISTRATIVE PROCEDURES

.1 Submit the required documents and samples to the Departmental Representative for review as soon as possible and in a predetermined order so as not to delay execution of the work. A delay in this regard would not be sufficient reason for obtaining an extension to the deadline for execution of the work and no such request will be accepted.

.2 Do not undertake work requiring the filing of documents and samples until the review of all submitted documents has been completed.

.3 Specifications indicated on workshop drawings, technical data sheets and samples of products and works shall be expressed in metric (SI) units.

.4 When items are not produced or manufactured in metric (SI) units or if specifications are not given in metric (SI) units, converted values may be accepted.

.5 Review documents and samples before submitting them to the Departmental Representative. Through this due diligence, the Contractor confirms that the requirements applicable to the work have been or will be determined and verified and that each of the documents and samples submitted has been reviewed and found to comply with the requirements of the work and contractual documents. Documents and samples that are not stamped, signed, dated and identified in relation to the particular project shall be returned without review and shall be considered as rejected.

.6 Notify the Departmental Representative in writing of any deviations from the requirements of the contractual documents and explain the reasons for such deviations at the time of filing documents and samples.

.7 Ensure the correctness of on-site measures in relation to adjacent works affected by the work.

.8 The fact that submitted documents and samples are reviewed by the Departmental Representative does not exempt the Contractor from the responsibility of submitting complete and accurate documents.

.9 The fact that submitted documents and samples are reviewed by the Departmental Representative does not exempt the Contractor from the responsibility of submitting documents that comply with the requirements of the contractual documents.

.10 A verified copy of each submitted document shall be kept on site.

1.4 WORKSHOP DRAWINGS AND TECHNICAL DATA SHEETS

.1 Refer to section CG 3.11 of CCDC 2.

.2 “Workshop drawings” means drawings, diagrams, illustrations, tables, efficiency or performance graphs, pamphlets and other documentation that the Contractor shall provide to show in detail any part of the work in question.

.3 Drawings shall bear the seal and signature of a qualified engineer recognized or licensed to practise in the province of Quebec, Canada.

.4 Workshop drawings shall state the materials to be used and the construction, attachment or anchoring methods to be deployed and shall contain assembly diagrams, connection details, relevant explanatory notes and any other information necessary to carry out the work. Where works or items are linked or connected to other works or items, drawings shall state that the requirements were coordinated, regardless of the section under the terms of which adjacent works or items are to be supplied and installed. Make references to the quotation and preliminary project drawings.

.5 Allow five (5) days for the Departmental Representative to review each batch of documents submitted.

.6 Changes made to the workshop drawings by the Departmental Representative are not expected to change the contract price. However if this is the case, the Departmental Representative shall be notified in writing prior to undertaking the work.

.7 Changes requested by the Departmental Representative shall be made to workshop drawings in accordance with the requirements of the contractual documents. When resubmitting the drawings, the Departmental Representative shall be notified in writing of any changes that have been made in addition to those required.

.8 Submitted documents shall include a covering letter containing the following information:

- .1 date;
- .2 project name and number;
- .3 name and address of the Contractor;
- .4 names of each drawing, technical data sheet and sample as well as the number submitted;
- .5 any other relevant data.

.9 Documents submitted shall bear or indicate the following:

- .1 date of preparation and revision dates;
- .2 project name and number;
- .3 name and address of the following people:
  - .1 subcontractor;
  - .2 supplier;
  - .3 manufacturer;
- .4 Contractor’s stamp, signed by the Contractor’s authorized representative, certifying that the submitted documents have been approved, that on-site measures have been verified and that the package complies with the contractual document requirements;

.5 Relevant details of portions of work involved:

.1 materials and manufacturing details;

.2 layout or configuration, with dimensions, including those taken on site, as well as slackness and clearances;

.3 assembly or adjustment details;

.4 characteristics such as power, throughput or capacity;

.5 performance characteristics;

.6 reference standards;

.7 operational mass;

.8 cabling diagrams;

.9 single line diagrams and block diagrams;

.10 links with adjacent work.

.10 Distribute copies of workshop drawings and technical data sheets once the Departmental Representative has completed the verification.

.11 Submit one (1) electronic copy of the workshop drawings specified in the technical sections of the quotation and as required by the Departmental Representative.

.12 If a workshop drawing is not required due to the use of a standard manufactured product, submit one (1) electronic copy of the manufacturer's technical data sheets or documentation as specified in the technical sections of the quotation and as required by the Departmental Representative.

.13 Submit one (1) electronic copy of the test reports specified in the technical sections of the quotation and as required by the Departmental Representative.

.1 The report signed by the official representative of the test laboratory shall certify that materials, products or systems identical to those proposed in the course of the work have been tested in accordance with the specified requirements.

.2 Tests shall have been carried out within three (3) years prior to the contract award date.

.14 Submit one (1) electronic copy of the certificates as specified in the technical sections of the specifications and as required by the Departmental Representative.

.1 The documents, printed on the manufacturer's official letterhead and signed by a manufacturer representative, shall certify that the products, materials, equipment and systems supplied comply with the specification requirements.

.2 Certificates shall bear a date after the contract award date and indicate the project name.

.15 Submit one (1) electronic copy of the manufacturer's instructions as specified in the technical sections of the specifications and as required by the Departmental Representative.

.1 Preprinted documents describing the method of installation of products, equipment and systems, including special notices and data sheets indicating impedances, risks and safety measures to be put in place.

.16 Submit one (1) electronic copy of the manufacturer's on-site control reports as specified in the technical sections of the specifications and as required by the Departmental Representative.

.17 Reports of tests and checks carried out by the manufacturer's representative to confirm compliance with the manufacturer's instructions of the installed products, materials, equipment or systems.

.18 Submit one (1) electronic copy of the operation and maintenance records as specified in the technical sections of the specifications and as required by the Departmental Representative.

.19 Delete any information that does not apply to the work.

.20 In addition to the current information, provide all additional details that apply to the work.

.21 When the workshop drawings have been verified by the Ministry Representative and no errors or omissions have been detected or only minor corrections have been made, they shall be returned and the manufacturing and installation work may be undertaken. If the workshop drawings are rejected, the annotated copy/copies shall be returned and corrected workshop drawings shall be resubmitted as indicated above before the manufacturing and installation work can be undertaken.

.22 The PWGSC's review of workshop drawings is only intended to verify compliance with the general concept of the data indicated on the drawings.

.1 This review does not mean that the Ministry approves the detailed preliminary project presented in the workshop drawings, of which the submitting Contractor is responsible, nor does it exempt the Contractor from the obligation of submitting complete and accurate workshop drawings and complying with all requirements of the work and contractual documents.

.2 Without restricting the general scope of the foregoing, it is important to state that the Contractor is responsible for the accuracy of dimensions confirmed on-site, for the provision of information concerning manufacturing methods or construction and installation techniques and for the coordination of work carried out by all trades.

1.5 SAMPLES

.1 Submit two (2) product samples for review as provided in the technical sections of the specifications. Label the samples with their origin and intended destination.

.2 Submit postage paid samples to the Departmental Representative.

.3 Notify the Departmental Representative in writing, at the time of submitting product samples, of any deviations from the requirements of the contractual documents.

.4 When the colour, pattern or texture is specified, the entire range of samples shall be submitted.

.5 Changes made to samples by the Departmental Representative are not expected to change the contract price. However if this is the case, the Departmental Representative shall be notified in writing prior to undertaking the work.

.6 Make changes to samples that may be requested by the Departmental Representative while meeting the requirements of the contractual documents.

.7 Reviewed and approved samples will become the reference standard against which the quality of materials and the quality of workmanship of finished and installed works will be evaluated.

1.6 WORK SAMPLES

.1 Not applicable.

1.7 PHOTOGRAPHIC DOCUMENTATION

.1 Submit, as directed by the Departmental Representative, one (1) copy of the file of digital photographs in colour, of high resolution, in .jpg format presented electronically.

.2 Project identification: project name and number and date when photographs were taken.

.3 Not applicable.

.4 Frequency of photo submission: as directed by the Departmental Representative.

1.8 CERTIFICATES AND REPORTS

.1 Submit the documents required by the relevant CNESST (Commission des normes, de l'équité, de la santé et de la sécurité du travail – Labour, equity, health and safety in the workplace standards commission) immediately after the contract is awarded.

.2 Submit copies of insurance policies immediately after the contract is awarded.

PARTIE 2 PRODUCT

.1 Not applicable.

PARTIE 3 EXECUTION

.1 Not applicable.

END OF SECTION

PARTIE 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 Not applicable.

1.2 SAFETY MEASURES

.1 Do not hinder airport operations without the authorization of the Departmental Representative.

.2 Take the temporary safety measures necessary for the routing of the public, personnel and pedestrians and the movement of vehicles, in accordance with section 01 56 00 – Temporary barriers and enclosures.

.3 Place barriers and traffic lights at the locations indicated by the Departmental Representative.

1.3 TRANSPORT OF MATERIALS AND PERSONNEL

.1 If the work is carried out in airport areas that are open to air traffic:

.1 submit the work schedule to the Departmental Representative for approval;

.2 control the movement of equipment and personnel as directed by the Departmental Representative;

.3 position, at the locations designated by the Departmental Representative, competent persons who will transmit control tower signals to equipment attendants and to personnel who need to cross duty traffic areas;

.4 signals issued by the control tower shall be observed immediately.

1.4 AREAS CLOSED TO AIRCRAFT TRAFFIC

.1 Areas that cannot be used by aircraft during the work planned under this contract shall be clearly identified, by placing highly visible hazard signs during the day and red lights at night.

.2 Open flames, fuels and combustibles are prohibited.

.3 Material that is not being used shall be stored. Materials shall be piled up so that their highest point remains below the theoretical line from the end of the usable runway and away from it at a slope of 1 in 50; this slope shall be 1 in 20 for the lateral clearance of aircraft traffic areas.

.1 Red lights are to be placed on top of piles of materials, as directed by the Ministry Representative.

1.5 TRENCH DIGGING

.1 Written permission shall be obtained from the Departmental Representative before digging trenches on open roads that may not be completely filled and covered with a surface layer during the same working day.

1.6 AIRPORT UTILITY NETWORKS

.1 The Departmental Representative will stake out or indicate the location of underground utility networks (cables, pipelines, conduits, etc.).

.2 Notify the Departmental Representative at least 48 hours in advance of the location of the work to be performed, in order to allow time to identify underground utility networks.

PARTIE 2 PRODUCT

.1 Not applicable.

PARTIE 3 EXECUTION

.1 Not applicable.

END OF SECTION

PARTIE 1 GENERAL

1.1 GENERAL NOTE

.1 In this section, the term “site” extends to all facilities at the location where the site is established (the site itself, buildings, access, infrastructure, parking lots, traffic area, etc.).

1.2 RELATED REQUIREMENTS

.1 Not applicable.

1.3 REFERENCES

.1 Quebec province

.2 Act Respecting Occupational Health and Safety, L.R.Q. (Revised Statutes of Quebec), c. S-2.1

.3 Safety Code for the construction industry, L.R.Q., c. S-2.1, r.4

1.4 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

.1 Submit the required documents and samples in accordance with Section 01 33 00 - Documents/samples to be submitted.

.2 Provide the Departmental Representative and CNESST with the prevention program specific to the construction site, as set out in the “GENERAL REQUIREMENTS” at least 10 days prior to the start of the work.

.3 The Departmental Representative will review the prevention program drafted by Contractor for the site, and make any observations within 10 business days of receipt of this document. If necessary, the Contractor shall review its prevention program before resubmitting it to the Departmental Representative no later than 5 days after receipt of observations from the Departmental Representative. The Departmental Representative reserves the right not to authorize the start of work on the site until the content of the prevention program is satisfactory. The Contractor shall subsequently update its prevention program and submit it to the Departmental Representative if the scope of work changes, if the Contractor’s working methods differ from its initial assessment, or if any other new applicable conditions arise.

.4 The Departmental Representative’s review of the Contractor’s site prevention program shall not be construed as an approval of this program, and shall not limit the Contractor’s overall liability for health and safety during construction work.

.5 At least once a week, submit reports to the Departmental Representative regarding the health and safety inspections performed on site by the Contractor’s authorized representative.

.6 Within 24 hours, submit a copy of any inspection reports, correction notices or recommendations issued by the health and safety inspectors of the federal, provincial, and territorial governments to the Departmental Representative.

.7 Within 24 hours, submit an investigation report to the Departmental Representative regarding any accidents that result in injury, and any incidents that highlight a potential risk. The investigation report shall contain at least the following items:

.1 Date, time and place of the accident;

.2 Name of the subcontractor involved in the accident;

.3 Number of persons involved, and condition of the injured parties;

.4 Identification of witnesses;

.5 Detailed description of the tasks performed at the time of the accident;

.6 Equipment used to undertake the tasks performed at the time of the accident;

.7 Corrective measures taken immediately after the accident;

.8 Causes of the accident;

.9 Preventive measures put in place to avoid a similar accident.

.8 Medical supervision: Before beginning work, and where required by law, regulation or safety program, submit the appropriate medical supervision certification for staff working on the site. Provide the Departmental Representative with any additional certification for new employees working on the site.

.9 Provide the Departmental Representative with an emergency response plan simultaneously with the prevention program. This emergency response plan shall contain the items listed in the “GENERAL REQUIREMENTS” article of this section.

.10 Provide the Departmental Representative with a copy of the training certificates for workers on site, in particular the following training courses (where applicable):

.1 First aid in the workplace and cardiopulmonary resuscitation.

.2 Work likely to emit asbestos dust (required for all work in the presence of asbestos).

.3 Work in enclosed spaces (required for all work in enclosed spaces).

.4 Lockout (required for all work requiring lockout).

.5 Safe driving of forklift trucks (required for all use of forklift trucks).

.6 Safe operation of elevating work platforms (required for all use of elevating work platforms).

.7 Any other training courses required by the regulations or prevention program.

.11 In addition, General Health and Safety course certificates for construction sites shall be available upon request on site.

.12 Engineering Compliance Plans and Certificates: the Contractor shall provide both the Departmental Representative and the Commission des normes, de l’équité, de la santé et de la sécurité du travail (CNESST) with a copy signed and sealed by an engineer of all plans required pursuant to the Safety Code for the Construction Industry (S 2.1, r.4), another act, regulation or clause of the quotation or contract. It shall also provide a certificate of compliance signed by an engineer once the facility for which these plans were drafted has been completed and before any person uses the facility. A copy of these documents shall be available on site at all times.

1.5 PRODUCTION OF THE NOTICE OF COMMENCEMENT OF CONSTRUCTION SITE

.1 Send the notice of commencement of construction site to the CNESST prior to work commencing. Provide the Departmental Representative with a copy of the notice of commencement and advice of receipt supplied by the CNESST.

.2 Upon completion of all work, the notice of closure shall be forwarded to the CNESST, with a copy sent to the Departmental Representative.

.3 The Contractor shall assume the role of coordinator at all times within the boundaries of the work site, and wherever it is required to undertake work in connection with this Project.

The Contractor shall acknowledge coordinator liability and identify itself in the notice of commencement of the construction site, which it will forward to the CNESST.

.4 The Contractor shall agree to divide and identify the site appropriately, so as to define time and space at all times for the duration of the project.

1.6 RISK/HAZARD ASSESSMENT

.1 Conduct a risk/hazard assessment for safety on this site, with respect to the performance of work.

1.7 MEETINGS

.1 Organize and lead a health and safety meeting with the Departmental Representative prior to the commencement of the work.

.2 A decision-making representative from the Contractor shall attend all meetings where site health and safety issues are discussed.

.3 If it is anticipated that there will be 25 or more workers on site at any time during the work, the Contractor shall set up a Construction Committee and hold meetings as required by the Safety Code for the Construction Industry (S-2.1, r. 4). A copy of the minutes of the meetings of the Construction Committee shall be forwarded to the Departmental Representative no later than 5 days from the date of the Committee meeting.

1.8 REGULATORY BODY REQUIREMENTS

.1 Comply with all laws, regulations and standards that apply to the performance of the work.

.2 Follow prescribed standards and regulations to ensure normal operation on sites contaminated with hazardous or toxic materials.

.3 Always use the most recent version of the standards listed in the Safety Code for the Construction Industry (S-2.1, r.4), notwithstanding the date given in this Code.

1.9 COMPLIANCE REQUIREMENTS

.1 Comply with the Act Respecting Occupational Health and Safety (L.R.Q., c. S-2.1) and the Safety Code for the Construction Industry (S-2.1, r. 4.) in addition to complying with all the requirements of this quotation.

1.10 RESPONSIBILITIES

.1 The Contractor shall accept and assume all duties and obligations normally entrusted to the Contractor under the Act Respecting Occupational Health and Safety (L.R.Q., chapter S-2.1) and the Safety Code for the Construction Industry (S 2.1, r.4).

.2 The Contractor shall be responsible for the health and safety of the persons present on site, as well as the protection of property located on site; in areas adjacent to the site, the Contractor shall also assume the protection of persons and the environment to the extent that they are affected by the work.

.3 Regardless of the size and location of the work site, the Contractor shall clearly delineate the boundaries of the work site by physical means, and shall also comply with the specific requirements of the relevant regulations. The means chosen to delineate the site shall be submitted to the Departmental Representative.

.4 Comply with, and ensure that employees comply with, the safety requirements set out in the applicable contractual documents, ordinances, the local, territorial, provincial and federal laws and regulations, and in the prevention program drafted for the site.

1.11 WORK PERFORMED BY EXTERNAL CONTRACTORS

.1 On this site, it is expected that certain work will be performed by an external contractor that is not engaged by the Contractor.

.2 The Contractor shall take the necessary measures to protect the health and safety of external contractors who do not have a contractual connection with the Contractor but are mandated by the Departmental Representative to undertake certain work. In return, these external contractors are obliged to submit to the authority of the Contractor (coordinator). A subordination agreement shall be signed by the Contractor and each external contractor to this end, and be delivered to the Departmental Representative prior to the commencement of the work of each external contractor (see text in the article OHS SUBORDINATION AGREEMENT).

1.12 GENERAL REQUIREMENTS

.1 Prior to commencing work, establish a site-specific prevention program based on the prior risk/hazard assessment in line with the “RISK/HAZARD ASSESSMENT” and the “RISKS INHERENT IN THE WORK SITE” article of this section. Apply and ensure compliance with this program in all respects until all staff on site have been demobilized.

.2 The prevention program shall take account of the specific features of the project, and shall cover all work carried out on the site.

.3 The prevention program shall include at least the following:

- .1 Company Health and Safety Policy;
- .2 Description of work stages;
- .3 Total cost of work, schedule and forecast curve of staff numbers;
- .4 Organization chart of Health and Safety responsibilities;
- .5 Physical and material organization of the site;
- .6 Identification of the risks for each stage of work, the corresponding preventive measures and implementation arrangements;
- .7 Identification of risk prevention measures in line with specific workplace risks set out in the article “RISKS INHERENT IN THE WORK SITE”;
- .8 Identification of preventive measures for the health and safety of staff and/or the public on the work site as set out in the article “SPECIFIC REQUIREMENTS FOR THE HEALTH AND SAFETY OF OCCUPANTS AND THE PUBLIC”;
- .9 Training required;
- .10 Procedure in the event of an accident/injury;
- .11 Written commitment made by all participants to comply with this prevention program;
- .12 Site inspection grid based on preventive measures;
- .13 Emergency response plan, which shall contain at least the following items:
  - .1 Site evacuation procedure;
  - .2 Identification of resources (police, fire, ambulance, etc.);
  - .3 Identification of responsible persons on site;
  - .4 Identification of first aiders;

.5 Communication Organization Chart (including Site Manager and Departmental Representative);

.6 Training required for those responsible for its application;

.7 Any other information required, taking site-specific features into account.

.14 The Departmental Representative shall provide the Contractor with the site evacuation procedure, where applicable, and the Contractor shall align the general site procedure with the specific site procedure, before returning it to the Departmental Representative.

.4 The Departmental Representative's comments may be submitted in writing if the prevention program contains any anomalies or raises concerns, and may require the submission of a revised program to correct or remove these concerns.

.5 In addition to the prevention program, during the work the Contractor shall draft and send the Departmental Representative a specific written procedure for any work involving a high risk of accidents (e.g. demolition procedure, special installation procedure, lifting plan, confined space entry procedure, power outage procedures, etc.) or at the request of the Departmental Representative.

.6 The Contractor shall plan and organize the work in such a way as to promote the elimination at the source of the hazards or collective protection, thus minimizing the use of personal protective equipment.

.7 Any equipment, tools or means of protection that cannot be installed or used without compromising the health and safety of workers or the public is deemed to be inadequate for the work to be performed.

.8 All mechanical equipment (including but not limited to lifting equipment used for people or materials, mechanical shovels, concrete pumps, concrete saws) shall be inspected prior to delivery to the site. The Contractor shall obtain a certificate of inspection signed by a mechanic and dated less than one week prior to the arrival of each piece of equipment on site, which it shall keep on site and provide to the Departmental Representative upon request.

.9 Ensure that all inspections (daily, periodic, annual, etc.) of lifting equipment used for people or materials required by the current standards are undertaken and be able to provide a copy of the inspection certificates at the request of the Departmental Representative.

.10 If at any time the Departmental Representative suspects a defect or risk of accident, the Departmental Representative may order the immediate shutdown of any equipment and require an inspection by the specialist of their choice.

.11 The Departmental Representative shall be consulted when deciding on the location of gas cylinders and tanks on site.

1.13 RISKS INHERENT TO THE WORK SITE

.1 In addition to the risks associated with the tasks to be performed, the staff responsible for work on site will be exposed to the risks inherent in the location where the work is to be done.

.2 At the location where the work will be done, the following elements are present:

.1 Materials containing asbestos.

.2 Materials containing lead.

.3 Materials contaminated with heating oil (granular materials and concrete).

.4 Mould.

.5 Other hazardous materials (specify).

.6 Confined spaces.

.7 Overhead power lines.

.8 Underground services (electricity, gas, steam, aqueduct, etc.).

.9 Laboratories.

.10 Potentially unstable soils.

.11 Barbed wire fencing.

.3 The Contractor shall conduct a Site Risk Assessment to validate this information and review it if other risks are present on site. The Contractor shall include all the risks that have been identified in the prevention program.

1.14 SPECIFIC REQUIREMENTS FOR THE HEALTH AND SAFETY OF OCCUPANTS AND THE PUBLIC

.1 The site where the work will be done may be occupied by employees and during the period of the work, even though said persons do not have access to the Contractor's site: The Contractor shall take into account the following specific requirements for the protection of employees:

.1 Construct the external and internal site enclosures according to the drawings for each phase of the work.

.2 These requirements shall be included in the Contractor's prevention program along with any other measures provided by the Contractor to protect the health and safety of employees and/or the public on site.

1.15 UNEXPECTED RISKS/HAZARDS

.1 If a hazard source not specified in the contractual documents and not identifiable at the time of the preliminary site inspection arises due to or during the performance of the work, the Contractor shall immediately stop the work, notify the person responsible for health and safety on site, put in place temporary protection measures for workers and the public, and notify the Departmental Representative verbally and in writing. The Contractor shall then make the necessary changes to the prevention program and put in place the necessary safety measures to allow the work to resume.

1.16 PERSON RESPONSIBLE FOR HEALTH AND SAFETY

.1 If the site meets the criteria of Section 2.5.3 of the Safety Code for the Construction Industry (S-2.1, r.4), the Contractor shall hire a competent and authorized person as a security officer who shall be assigned on a full-time basis from the commencement of work. This person's tasks shall exclusively cover the management of health and safety on the site. The safety officer shall meet the following criteria:

.1 Hold a security officer certificate issued by the CNESST at least one year ago.

.2 Have practical experience on a site where associated activities are performed, similar to those of the project in question.

.3 Have a working knowledge of workplace health and safety regulations.

.4 Assume responsibility for the Contractor's occupational health and safety training sessions, and ensure that only those who have successfully completed the required training courses have access to the site to undertake work.

.5 Assume responsibility for the implementation, in-depth compliance and follow-up of the health and safety plan drawn up for the site by the Contractor.

.6 Be present at all times on the job site during the performance of work.

.7 Inspect work and ensure compliance with all regulatory requirements, as well as those specified in the contractual documents or the prevention program.

.8 Keep a daily record of the work undertaken, and provide a copy to the Departmental Representative at least once a week.

.2 The security officer's certificate shall be forwarded to the Departmental Representative prior to the commencement of work.

.3 If the recruitment of a security officer is not required or said officer is hired by the Departmental Representative, the Contractor shall appoint a competent person as a supervisor in charge of health and safety, regardless of the size of the site or the number of workers present. This person shall be present on site at all times, and shall be able to take all steps necessary to ensure the health and safety of people and property on and in the immediate vicinity of the site that may be affected by the performance of work. The Contractor shall forward the name of said person to the Departmental Representative prior to the commencement of work.

1.17 DISPLAY OF DOCUMENTS

.1 Ensure that the relevant documents, articles, ordinances, and notices are posted on the site in full view, in line with provincial laws and regulations, and in consultation with the Departmental Representative.

.2 At least the following information and documents shall be posted in a location easily accessible to workers:

.1 Notice of commencement of site;

.2 Identification of the coordinator;

.3 Corporate OSH policy;

.4 Site-specific prevention program;

.5 Emergency plan;

.6 Minutes of the meetings of the Construction Committee;

.7 Names of representatives on the Construction Committee;

.8 Names of first aiders;

.9 Intervention and correction reports issued by the CNESST.

1.18 INSPECTIONS AND CORRECTIVE ACTION IN THE EVENT OF NON-COMPLIANCE

.1 Inspect workplaces, complete the site inspection grid and submit it to the Departmental Representative in accordance with the "DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION" article of this section.

.2 Take immediate action to correct any situations deemed to be non-compliant as observed during the inspections outlined in the preceding paragraph, or as observed by the competent authority, or by the Departmental Representative or their representative.

.3 Provide a written report to the Departmental Representative on the corrective actions taken in the event of non-compliance with regard to health and safety.

.4 The Contractor shall grant the safety officer or, where no safety officer exists, to the person in charge of health and safety, all the powers necessary to order the stoppage and resumption of work when said party considers it necessary or desirable for health and safety reasons. The Contractor shall ensure that the health and safety of the public and

on-site staff, and the protection of the environment always take precedence over matters related to the cost and schedule of the work.

.5 The Departmental Representative or their agent may order the work to be stopped if the Contractor does not take the necessary corrective actions as per conditions deemed to be non-compliant with regard to health and safety. Without limiting the scope of the preceding articles, the Departmental Representative may also order a work stoppage at any time if, in their view, there is a danger or risk to the health or safety of construction site staff, to the public, or to the environment.

1.19 PREVENTION OF VIOLENCE

.1 The management of health and safety on sites of Public Works and Government Services Canada includes measures to protect the psychological health of all persons accessing the site where the work is undertaken. Thus, verbal abuse, intimidation and harassment, and physical violence are not tolerated on site. Any person undertaking such actions or behaviours will receive a warning and/or may be permanently removed from the site by the Departmental Representative.

1.20 BLASTING

.1 Not permitted.

1.21 CARTRIDGE DEVICES

.1 Cartridge devices may only be used with the written permission of the Departmental Representative.

.2 Any person using a sealing gun shall hold a training certificate and comply with all requirements of Section 7 of the Safety Code for the Construction Industry (S-2.1, r. 4).

.3 Any other cartridge devices shall be used in line with the manufacturer’s instructions and applicable standards and regulations.

1.22 USE OF PUBLIC ROADS

.1 When it is necessary to use public roads for operational reasons or to ensure the safety of workers, occupants or the public (e.g. use of scaffolding, cranes, excavation work, etc.), the Contractor shall obtain, at their own expense, all authorizations and permits required by the competent authority.

.2 The Contractor shall install, at their own expense, all signage, barricades and other elements required by the regulation to ensure the safety of the public and of its own facilities.

1.23 LOCKOUT

.1 For all work on equipment powered by electricity or any other source of energy, the Contractor shall send a general lockout procedure to the Departmental Representative and implement this procedure.

.2 Supervisory staff and all workers involved in the work requiring lockout shall have received lockout training provided by a recognized organization; the Contractor shall forward the training certification to the Departmental Representative.

.3 Prior to commencing lockout of equipment at an occupied site, the Contractor shall coordinate work with the site representative if the shutdown of power sources may affect the operations of the site or its occupants.

.4 The Contractor shall identify a qualified person as responsible for lockout and shall ensure that said person writes a lockout sheet for each item of equipment to be locked out. The lockout sheet shall be sent to the Departmental Representative at least 48 hours prior to commencing work; the latter shall have the work checked by a site representative if the work is taking place in an existing building.

.5 The lockout sheet shall contain at least the following information:

.1 Description of the work to be performed;

.2 Identification, description and location of the circuit and/or equipment to be locked out;

.3 Identification of the energy sources that power the equipment;

.4 Identification of each of the cut-off points;

.5 Sequence of lockout and release of residual power and sequence of unlocking;

.6 List of lockout equipment required;

.7 Zero Energy Verification Method;

.8 Name and signature of the person who wrote the sheet.

.6 When required by the Departmental Representative, the Contractor shall record all such information on the site representative's form.

.7 At the time of lockout, the person responsible shall date the record sheet and ensure that the workers involved in the work on the circuit/equipment for lockout write their names on the data sheet and sign it.

1.24 ELECTRICAL WORK

.1 The Contractor shall ensure that all electrical work is performed by qualified employees in accordance with the provincial regulations regarding vocational training and qualification.

.2 The Contractor shall meet the requirements of the CSA Z462 *Workplace Electrical Safety* standard.

.3 Any work on electrical equipment shall be done with the power off.

.4 The Contractor shall comply with all requirements set out in the "LOCKOUT" paragraph in this section.

1.25 EXPOSURE TO ASBESTOS

.1 The work covered by this specification is expected to involve handling materials containing asbestos; where the Contractor or Departmental Representative or their agent discovers materials that may contain asbestos, the Contractor shall immediately discontinue the work and notify the Departmental Representative. If it is subsequently shown that these materials contain asbestos, the Contractor shall comply with the following requirements.

.1 Prior to commencing any work that may emit asbestos dust, the Contractor shall provide a written work procedure that identifies the level of risk of the work (low, moderate, high), as defined in Section 3.23 of the Safety Code for the Construction Industry, S-2.1, r-4, and that takes into account all the requirements of this same section.

.2 The Contractor shall submit certificates demonstrating that all workers involved in the work have received training on asbestos-related risks and the procedure required in the preceding paragraph.

.3 The Contractor shall demonstrate that it has all the material and equipment necessary to comply with the procedure and to ensure safe execution of the work.

1.26 FUNGAL CONTAMINATION

.1 Not applicable.

1.27 EXPOSURE TO SILICA

.1 Work in a wet environment or use a water suppression system on tools to reduce dust; otherwise, collect dust at source and retain it in a high efficiency filter so that it does not spread into the environment.

.2 Clean surfaces and tools with water, never with compressed air.

.3 Sand and strip surfaces using an abrasive containing less than 1% silica (also known as amorphous silica).

.4 Install screens or partitions to prevent dust migrating outside the work area and thus protect other workers and the public.

.5 Wear respiratory and eye protection equipment during any operations that may produce silica dust in accordance with the requirements of the Safety Code for the Construction Industry, S-2.1, r.4.

.6 Wear a protective suit to prevent contamination outside the site.

.7 Do not eat, drink or smoke in a dusty area.

.8 Wash hands and face before drinking, eating or smoking.

1.28 ABRASIVE JET BLASTING

.1 Prior to commencement of any abrasive jet blasting, the Contractor shall:

.1 Provide a written work procedure that meets the requirements of Section 3.20 of the Safety Code for the Construction Industry, S-2.1, r.4.

.2 The Contractor shall demonstrate that it has all the material and equipment necessary to comply with the procedure and to ensure safe execution of the work.

.3 All sanding and stripping work shall be performed with an abrasive containing less than 1% silica.

1.29 LEAD-BASED PAINT REMOVAL

.1 Prior to commencement of any work for which workers are likely to handle materials containing lead paint or other substances containing lead, the Contractor shall:

.1 Provide a written work procedure that meets the requirements of the Safety Code for the Construction Industry, S-2.1, r.4, and the requirements outlined in the Lead on Construction Projects guidelines issued by the Ontario Ministry of Labour (https://www.labour.gov.on.ca/english/hs/pubs/lead/index.php). In the event of differences between the Quebec regulations and the Ontario document, the most stringent requirement applies.

.2 The Contractor shall demonstrate that it has all the material and equipment necessary to comply with the procedure and to ensure safe execution of the work.

1.30 EXPOSURE TO ANIMAL DROPPINGS

.1 Prior to commencement of any work for which workers are likely to come into contact with materials contaminated with animal droppings, the Contractor shall:

.1 Provide a written procedure that meets the requirements of the Safety Code for the Construction Industry, S-2.1, r.4 and the requirements outlined in the CNESST document Pigeons in your Workplace: Beware (http://www.csst.qc.ca/publications/100/Documents/DC100_1331_1web2.pdf)

.2 The Contractor shall demonstrate that it has all the material and equipment necessary to comply with the procedure and to ensure safe execution of the work.

1.31 RESPIRATORY PROTECTION

.1 The Contractor shall ensure that all workers required to wear respiratory protection equipment in the course of their duties have received training in this regard as well as fit testing for their respirator in accordance with CSA Z94.4 Selection, Care and Use of Respirators. The certificates for fit testing shall be submitted to the Departmental Representative upon request.

1.32 PREVENTING FALLS

.1 Plan and organize work to emphasize eliminating fall hazards at source or promoting collective protection, thereby minimizing reliance on personal protective equipment. When personal fall protection is required, workers shall use a safety harness in accordance with CAN-CSA-Z-259.10-M90. Safety belts shall not be used as fall protection.

.2 All persons using an elevating platform (scissor lift, telescopic mast, articulated mast, rotating mast, etc.) shall have received training for this purpose.

.3 Safety harnesses shall be worn on all telescopic, articulated or rotary mast elevating platforms.

.4 Mark a danger area around each elevating platform.

.5 Any opening in a floor or in a roof shall be surrounded by a guardrail or covered by a cover attached to the floor and that can withstand the loads to which it may be subjected, regardless of the size of the opening and the drop height it represents.

.6 Any person who works within two metres of a place with a fall hazard of three metres or more shall use a safety harness in accordance with the requirements of the regulations, unless there is a guardrail or other item affording equivalent protection.

.7 Despite regulatory requirements, the Departmental Representative may require the installation of guardrails or the use of safety harnesses for certain specific situations where there is a risk of falls of less than three metres.

1.33 SCAFFOLDING

.1 In addition to the requirements of the Safety Code for the Construction Industry, Contractors using scaffolding shall comply with the following requirements:

.1 Footings

.1 Scaffolding shall be installed on solid footings so that it cannot slip or tip over.

.2 Contractors wishing to install scaffolding on a roof, roof projection, canopy or mansard shall submit to the Departmental Representative their load calculations and plans signed and sealed by an engineer and obtain approval prior to starting installation.

.2 Assembly, bracing and tying in

.1 All scaffolding shall be assembled, braced and tied in according to the manufacturer's instructions and the provisions of the Safety Code for the Construction Industry.

.2 For any situation where it is necessary to remove certain components from the scaffold (such as cross-braces), the Contractor shall submit to the Departmental Representative, prior to the assembly of the scaffolding, an assembly procedure signed and sealed by an engineer certifying that the scaffolding so assembled will allow the work to be carried out in a safe manner, taking into account the loads that will be applied to it.

.3 For any scaffolding structure with a span between two supports greater than three metres, the Contractor shall provide the Departmental Representative with an assembly plan signed and sealed by an engineer prior to the assembly of the scaffolding.

.3 Fall protection during assembly

.1 At all times, during assembly, all workers shall be protected from falls if they are exposed to a fall hazard of more than three metres.

.4 Decks

.1 Scaffolding decks shall be designed and installed in accordance with the provisions of the Safety Code for the Construction Industry.

.2 If wood planks are used, these shall be approved and stamped in accordance with the provisions of Article 3.9.8 of the Safety Code for the Construction Industry.

.3 Scaffolding of four or more sections (or six metres) in height shall have a full deck covering the entire surface of the putlogs at every three metres in height or fraction of three metres and deck components shall not at any time be moved to create intermediate platforms.

.5 Parapets

.1 A guardrail shall be installed on all work platforms.

.2 Cross-bracing shall not be considered as guardrails.

.3 If the decks are not solid, the guardrail shall be installed just above the deck edge so that there is no empty horizontal space between the deck and the guardrail.

.4 In the case of scaffolding of four sections (or six metres) and higher where solid decks are required, guardrails shall be installed at each of these platforms at the start of the work and shall remain in place until the work is completed.

.6 Means of access

.1 The Contractor shall ensure that the means of access to scaffolding do not compromise the safety of workers.

.2 Where scaffold decks are made of wood planks, ladders shall be installed so that protruding wood planks do not interfere with climbing up or down.

.3 Notwithstanding the provisions of the Safety Code for the Construction Industry, stairways shall be installed on all scaffolding with six or more rows and of standards and six sections or more (or nine metres) in height.

.7 Protection of the public and occupants

.1 Where scaffolding is installed in an area accessible to the public, the Contractor shall take steps to prevent public access to scaffolding and, where applicable, to work or storage areas near such scaffolding.

.2 The Contractor shall install covered walkways, netting or similar devices to protect workers, the public and occupants from falling objects. The chosen means of protection shall be approved by the Departmental Representative.

.8 Engineering plans

.1 In addition to those required by the Safety Code for the Construction Industry, the Departmental Representative reserves the right to require engineering plans for other types or configurations of scaffolding.

.2 A plan signed and sealed by an engineer is required for any scaffolding on which sheeting, tarpaulins or other devices exposed to wind loading will be attached.

.3 A certificate of compliance signed by an engineer is required for all cases where an engineering plan is required and before a person uses the facility covered by that plan. A copy of these documents shall be available on site at all times.

1.34 CONFINED SPACES

.1 In addition to complying with the provincial regulations that apply to confined spaces, the Contractor shall comply with the requirements set out in the following paragraphs.

.1 The Departmental Representative reserves the right, depending on the nature of the risks of the confined spaces, of the work to be done and/or of the level of competence in confined spaces demonstrated by the Contractor, to require the latter to use the services of a firm specialized in health and safety or in confined space working to perform a confined spaces risk analysis, to complete the entry permit, to monitor the work, or for any other task related to work in confined spaces.

.1 Information on the confined spaces present on the site

.1 The Contractor shall take into consideration each of these confined spaces and shall also add to this list any new confined spaces that it may construct/install during this project.

.2 Person responsible for health and safety for work in confined spaces

.1 The Contractor shall designate a person to take charge of health and safety for work in confined spaces. This individual shall be a qualified person as defined in Section 297 of the Occupational Health and Safety Regulations (S-2.1, r.13). This person shall be present at all times during work in confined spaces and shall ensure that all regulatory requirements and those specified in this section are met. In particular, this person shall complete and issue the confined spaces entry permit.

.3 Training

.1 All persons with access to a confined space, as well as the person responsible and the supervisor of the confined space, shall have completed training on entry into confined spaces.

.2 All persons who have to use self-contained breathing apparatus to access confined spaces shall have received training on the use of such apparatus.

.3 All persons identified as rescuers for confined spaces shall have completed training on confined space rescue.

.4 Each training course required in the preceding paragraphs shall be delivered by a firm specialized in health and safety or in confined spaces.

.5 Training certificates for the persons listed above shall be submitted to the Departmental Representative before starting work in confined spaces.

.4 Risk assessment of confined spaces

.1 For each of the confined spaces listed at the beginning of this section, the Contractor shall obtain the necessary information from the site representative and carry out an assessment of the risks involved with each of these confined spaces as regards:

.1 the prevailing internal atmosphere, namely the concentration of flammable oxygen, gases and vapours, combustible dust that constitutes a fire or explosion hazard, and categories of contaminants that are generally likely to be present in or around this confined space;

.2 lack of natural or mechanical ventilation;

.3 the materials that are present there and that may cause a worker to sink, to become buried or to drown, such as sand, grain or liquid;

.4 its internal design;

.5 pipes and ducts entering the confined space;

.6 power, such as electricity, moving mechanical parts, thermal stresses, noise and hydraulic power;

.7 ignition sources such as naked flames, lighting, welding and cutting, static electricity or sparks;

.8 any other special circumstances, such as vermin, rodents or insects.

.2 These risk assessments shall be carried out by the person in charge of health and safety for work in confined spaces. They shall be submitted to the Departmental Representative for analysis at least 10 days before the date scheduled for work in confined spaces and shall also contain the following information:

.1 Location of the confined space;

.2 Description of the confined space;

.3 Dimensions of the confined space;

.4 Number, location and size of openings;

.5 Contents of the confined space (equipment, substances, etc.)

.6 Date of the assessment;

.7 Name and signature of the person who conducted the assessment and the name of their employer.

.3 The Contractor shall perform the same process for each of the confined spaces that is to be constructed/installed during this project.

.5 Confined spaces entry permits

.1 At least five days prior to the date scheduled for work in confined spaces, the Contractor shall submit a copy of each entry permit specific to the confined spaces which the Contractor needs to access to the Departmental Representative for analysis. Entry permits shall be completed by the person in charge of health and safety for work in confined spaces, and shall include at least the following information:

.1 Description of the work to be performed and the method of work, including the equipment and tools required to do this work;

.2 Description of risks and corresponding control measures, based on the results of the assessment conducted previously on the risks inherent to the confined space and according to the work to be carried out;

.3 Safety equipment that will be used to control the confined space risks (for example, ventilator, gas detector, extraction at source, personal protective equipment, etc.);

.4 Rescue procedure containing at least the following:

.1 Means of communication between the confined space supervisor and workers within the confined space;

.2 Emergency rescue equipment specific to each confined space;

.3 Confirmation that the municipality's emergency response service has been notified of work taking place in confined spaces specifically on this site and may mount a rescue within a confined space; otherwise, the Contractor shall identify the workers on the site who will act as rescuers in the event that such rescuers need to gain access into a confined space (rescue training mandatory);

.4 Location of telephone and telephone number of the municipality's emergency response service (if applicable).

.5 Date of entry permit;

.6 Name of the person issuing the permit and the person's employer;

.7 Name of supervisor and the supervisor's employer;

.8 Names of the workers who need to enter the confined space and of each worker's employer.

.2 In cases where the site representative requires the use of the site-specific confined space entry permit, the Contractor shall comply with the requirements of said permit.

.6 Medical supervision

.1 The Contractor shall provide the Department Representative with a medical certificate dated within the last two years for all persons needing to use a supplied air respirator. The certificate shall confirm the ability of each person to use this type of device.

.2 It is recommended that persons required to work in sewer collection systems or similar systems should be vaccinated against diphtheria, tetanus and hepatitis B.

.7 Requirements while working in confined spaces

.1 Prior to each entry into a confined space, the person in charge shall take readings measuring the concentration of oxygen, flammable gases and any toxic gases that may be present and record the results of these readings on the entry permit required previously.

.2 No worker may access the confined space if the following requirements are not met:

.1 Oxygen concentration shall be greater than or equal to 19.5% and less than or equal to 23%;

.2 The concentration of flammable gases or vapours shall be less than or equal to 10% of the lower explosion limit;

.3 The concentration of other gases shall not exceed the standards set out in Schedule I to the Occupational Health and Safety Regulations (S-2.1, r.13).

.3 If the measured oxygen and gas concentrations meet the regulatory values, the person in charge shall ensure that all preventive measures listed on the permit are in place and shall then complete the entry permit (date, time, signatures, etc.) before issuing the permit and allowing access to the confined space.

.4 An entry permit shall cover only one shift; the Contractor shall issue a new permit for each additional shift.

.5 During work inside the confined space, the gas concentration shall be measured continuously and the detector shall be installed in the workers' breathing zone. If conditions in the confined space are such that workers may not hear and/or see the detector alarm, the Contractor shall find a way for the confined space supervisor to monitor concentration measurements while continuing to take readings in the worker's breathing zone.

.6 If the work is organized in such a way that workers may be scattered throughout a large confined space, the Contractor shall provide additional gas detectors.

.7 The Contractor shall provide gas detectors and keep them in good condition. It shall be able to demonstrate that the gas detectors used have been calibrated and adjusted by the person in charge or by a qualified person and according to the manufacturer's recommendations. The Departmental Representative may have the Contractor's devices checked at any time for accuracy. In the event of failure of a detection device, work shall be suspended immediately and all workers shall leave the confined space.

.8 The gas detector manufacturer's manual shall be available on site.

.9 The Contractor shall provide a ventilation system of sufficient power to maintain concentrations of contaminants below the regulatory limits.

.10 If work that generates contaminants in the air is being performed (welding, use of products, etc.), the Contractor shall, if necessary,

install a contaminant extraction system so as to comply with regulatory air quality values at all times.

.11 If a gas detector alarm goes off, all workers shall exit the confined space. Concentration readings shall then be recorded on the entry permit. The Contractor shall then identify the source of contamination, neutralize it, ventilate the confined space to remove contaminant residues, and only allow access to the enclosed space when oxygen and gas concentration levels have returned to normal.

.12 No compressed gas cylinders or welding machines may be brought inside confined spaces. Such equipment shall remain outside and may not block entry or exit points; all cylinders shall be properly secured.

.13 Electrical tools and appliances used for work in confined spaces shall be grounded and, where necessary, be explosion-proof. All equipment shall be connected to an earth leakage circuit breaker or a step-down transformer. The Contractor shall, at their own expense, ensure that any power outlets and/or circuit breakers intended for use and that do not meet these criteria are modified by a qualified electrician.

.14 If work in confined spaces requires hot work, the Contractor shall obtain a hot work permit and shall comply with the corresponding requirements.

.15 The Contractor shall assign a competent person to perform the duties of supervisor. The supervisor shall be assigned exclusively to these functions and shall remain outside the confined space for as long as a worker remains inside. In addition, the supervisor shall:

.1 Verify that the entry permit is completed, signed and displayed next to the confined space;

.2 Be familiar with the working procedure specific to the confined space and ensure that it is properly followed;

.3 Be in constant communication with all workers in the confined space and ensure that the necessary equipment is in place in case of emergency;

.4 Be familiar with the supplementary ventilation systems and ensure the proper functioning of these systems throughout the duration of the work;

.5 Prevent access to unauthorized persons;

.6 Ensure that the conditions of the area surrounding the confined space do not affect the health and safety of workers inside the confined space.

.7 Trigger the emergency procedure if necessary.

.16 The same person may assume the duties of supervisor and person responsible for enclosed work health and safety, provided that all the requirements of these two functions can be met.

1.35 EXCAVATION WORK

.1 In addition to the requirements of the Safety Code for the Construction Industry, the Contractor carrying out excavation and trenching and work shall comply with the following requirements:

.2 Complete the form below and submit to the Departmental Representative prior to commencement of work.

.3 Submit the following additional documents to the Departmental Representative, as appropriate:

.1 Plans and specifications, signed and sealed by an engineer, of the shoring to be put in place for the excavation work; or

.2 An engineer’s notice specifying the angle of the excavation or trench banks.

Directive de creusage

N° _____ de _____

Cette directive de creusage est fournie à titre d'exemple par la Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST). On y trouve les principales indications que l'employeur devrait donner à la personne responsable des travaux sur le terrain et à l'opérateur de l'engin de terrassement.

Nom de l'entreprise	
Nom du projet	N° du projet
Adresse du chantier	Date du début des travaux

Repérage

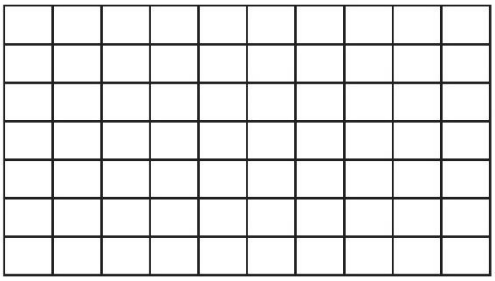
Chaînage ou axes : de _____ à _____ Plan annexé ☐ N° du plan : _____

Méthode de travail à utiliser

Tout en s'assurant que les parois ne présentent aucun danger de glissement de terrain,

- ☐ **creuser et étançonner** selon les plans et devis d'un ingénieur ;
- ☐ **creuser et étançonner** en utilisant une boîte de tranchée ;
- ☐ **creuser sans étançonner** pourvu que l'une des conditions suivantes soit respectée :
  - ☐ le roc est sain ;
  - ☐ aucun travailleur ne descend dans la tranchée ou l'excavation ;
  - ☐ les parois sont creusées conformément à l'avis d'un ingénieur.

Dimensions du creusement (Creuser selon le profil suivant.)



	Minimale	Maximale
H Profondeur		
Lf Largeur au fond		
Ls Largeur en surface		

Mesures de sécurité

Déposer les matériaux à une distance d'au moins 1,2 mètre (4 pi) du sommet des parois.
Ne laisser aucun véhicule s'approcher à moins de 3 mètres (10 pi) du sommet des parois.

- ☐ Respecter le plan de l'ingénieur concernant les travaux à proximité d'une construction existante.
- ☐ Suivre le plan de localisation pour repérer les infrastructures souterraines.
- ☐ Installer le matériel de signalisation prévu par le plan de circulation (barrières, repères visuels, etc.).
- ☐ Affecter un ou des signaleurs au contrôle de la circulation.
- ☐ Respecter la méthode prévue pour le travail à proximité des lignes électriques.
- ☐ Mettre en place les dispositifs de protection des travailleurs, par exemple les glissières de sécurité en béton.

Nom	Fonction	
Signature	Date	N° de téléphone
Directive remise ☐ au responsable des travaux sur le terrain ☐ à l'opérateur de l'engin de terrassement		

1.36 HOISTING LOADS USING A CRANE OR CRANE TRUCK

.1 Unless otherwise specified, the Contractor shall draw up a hoisting plan and submit it to the Departmental Representative for any hoisting operation carried out using a crane or crane truck at least 5 days before the start of the hoisting operations covered by said plan. This hoisting plan shall contain at least the information listed at the end of this section.

.2 The hoisting plan shall be signed and sealed by an engineer for the following hoisting operations:

- .1 Hoisting of concrete panels;
- .2 Hoisting equipment/electrical equipment onto a roof or floors of a building;
- .3 Load hoisting that encroaches on a public highway;
- .4 Hoisting heavy or large-size loads;
- .5 Any other hoisting operation, as required by the Departmental Representative.

.3 In addition to the above requirements, the Contractor shall plan the hoisting operations such that loads do not pass over the occupied areas of a site. Where it is impossible to do otherwise, the hoisting plan shall be signed and sealed by an engineer and shall ensure the safety of the occupants of said area; this plan shall be approved by the Departmental Representative. The Departmental Representative may, if deemed necessary, impose evening and weekend work.

.4 Upon the commencement of work at the site, the Contractor shall submit to the Departmental Representative a list of the hoisting plans scheduled for the duration of the project. This list will need to be updated where necessary if changes are made during the course of the work.

.5 In addition to the mechanical inspection certificate, all cranes and crane trucks shall have the annual inspection certificate and the crane logbook in the cabin.

.6 The entire hoisting area shall be delimited so as to prevent unauthorized persons from entering the area.

.7 The Contractor shall carefully inspect all slings and hoisting accessories and ensure that those that are in poor condition are destroyed and scrapped.

.8 Compressed gas cylinders shall be hoisted using a basket specially designed for this purpose.

.9 Minimum hoisting plan content:

- .1 Drawing showing, as a minimum, location of the crane, surrounding facilities, area covered by the hoisting operations, pedestrian and vehicle traffic routes, safety perimeter, etc.;
- .2 Load weights;
- .3 Load dimensions;
- .4 List of hoisting accessories and the weight of each;
- .5 Total weight hoisted;
- .6 Maximum height of obstacles to be crossed;
- .7 Load hoisting height in relation to the roof surface (in the case of loads hoisted to be deposited on roofs);
- .8 Use of guide wires;
- .9 Type of crane used;
- .10 Crane capacity;

.11 Boom length;

.12 Boom angle;

.13 Crane radius;

.14 Outrigger extension;

.15 Percentage of crane capacity usage;

.16 Confirmation of hoisting equipment verification;

.17 Identification of the crane operator and the hoisting operations manager signed and dated.

1.37 HOT WORK

.1 Hot work means any work using an open flame or that may produce heat or sparks, such as riveting, welding, cutting, brazing, grinding, burning, heating, etc.

.1 At the beginning of each shift and for each area, the Contractor shall obtain a “Hot Work Permit” issued by the site manager.

.2 A portable fire extinguisher that is functional and suitable for the risk of fire shall be available and easily accessible within 5 meters of any flame and source of sparks or intense heat.

.3 The Contractor shall designate one person to conduct continuous fire hazard monitoring for a period of at least one (1) hour after the completion of all hot work. This person shall sign the corresponding section of the permit and submit it to the site manager after a period of one hour.

.4 When hot work is performed in areas where combustible materials are present or where walls, ceilings or floors are made of or covered with combustible materials, a final inspection of the work area shall be scheduled four (4) hours after completion of the work. Unless otherwise advised by the Departmental Representative, the Contractor shall designate a person to perform such monitoring.

.2 Welding and cutting: In addition to the requirements set out in the preceding paragraphs, the Contractor shall comply with the following requirements:

.1 Welding and cutting work shall be carried out in accordance with the requirements of the Safety Code for the Construction Industry (S-2.1, r.4) and the Safety in Welding, Cutting and Allied Processes standard (CSA W117.2).

.1 Use an air extraction system appropriately filtered for any welding or cutting work carried out inside.

.2 Halt any activity that produces flammable or combustible gases, vapours or dust in the vicinity of the welding or cutting work.

.3 Store the compressed gas cylinders on a flame-retardant surface and ensure that the room is well ventilated.

.4 Store all oxygen cylinders at a minimum distance of 6 m from flammable gas cylinders (e.g. acetylene) or a combustible such as oil or grease, unless they are separated from the combustible by a wall made of non-combustible material as specified in Section 3.13.4. of the Safety Code for the Construction Industry (S-2.1, r.4).

.5 Store cylinders away from heat sources.

.6 Do not store cylinders near stairs, exits, hallways or elevators.

.7 Do not put acetylene in contact with metals such as silver, mercury, copper and brass alloys with more than 65% copper to avoid the risk of an explosive reaction.

.8 Check that electric arc welding equipment has the required voltage and is grounded.

.9 Ensure that electric welding apparatus lead wires are not damaged.

.10 Place welding equipment on a level, sheltered surface.

.11 Install flame-retardant tarpaulins when welding work is carried out on multiple levels and where there is a risk of sparks falling.

.12 Remove or protect flammable or combustible materials located within 15 m of welding work.

.13 Never weld or cut on closed containers.

.14 Do not cut, weld, or work with an open flame on containers, tanks, pipes or other recipients containing flammable or explosive product residues or substances unless:

.1 They have been cleaned and air samples indicating the absence of explosive vapours have been taken; and

.2 arrangements have been made to ensure the safety of workers.

1.38 ROOFING WORK

.1 Fall protection

.1 The installation of guard-rails is mandatory at all times; however, the installation of a warning line is permitted to delimit work areas provided that all the requirements of Sections 2.9.4.0 and 2.9.4.1 of the Safety Code for the Construction Industry are met.

.2 The guard-rail shall remain in place until the end of the project. The Departmental Representative shall authorize their dismantling when they are able to confirm that all required work, inspections and corrections have been completed.

.3 A safety harness shall be worn for the installation of guard-rails.

.4 The use of a safety harness is mandatory for the installation and modification of railings or flashing if the guard-rail must be moved temporarily.

.5 The wearing of a safety harness is mandatory for the reception of equipment and signals to the crane at the open sides of a floor.

.6 The wearing of a safety harness is mandatory for any work at the open sides of a floor where collective protection does not provide adequate security.

.7 The Contractor shall provide for an emergency cable system and fastening method in accordance with Section 2.10.12 of the Safety Code for the Construction Industry (L.R.Q., S-2.1, r.4) for each different sector or workplace.

.2 Hoisting of materials

.1 For any winch installation, the Contractor shall submit to the Departmental Representative the installation procedure recommended by the manufacturer or, failing that, an installation procedure signed and sealed by an engineer. In particular, the installation procedure shall take into account the maximum permissible loads, the number, weight and location of the counterweights and any other details that may affect the capacity and stability of the apparatus.

.2 The Contractor shall carefully inspect all slings and hoisting accessories and ensure that those that are in poor condition are destroyed and scrapped.

.3 Compressed gas cylinders shall be hoisted using a basket specially designed for this purpose.

.4 For any use of a crane or crane truck, the Contractor shall comply with the requirements of the paragraph “Hoisting loads using a crane or crane truck” in this section.

.3 Scald protection

.1 Persons assigned to boilers shall wear long sleeves, safety glasses and a face shield when loading a boiler.

.2 Persons assigned to work involving asphalt or other hot liquids shall wear gloves, long sleeves and safety glasses.

.4 Fire protection

.1 The storage and use of propane cylinders shall comply with standard CAN/CSA-B149.2 of the Propane Storage and Handling Code. Cylinders shall be stored outdoors in a safe place, away from unauthorized handling, in an area where vehicles or equipment are not moved unless they are protected by barriers or an equivalent means of protection.

.2 The quantity of propane cylinders on the roof shall not exceed that required for a working day and the cylinders shall be secured upright or held upright in a cart designed for this purpose at all times.

.3 All hot work (burning, heating, riveting, welding, cutting, grinding, etc.) shall be carried out in accordance with the “Hot work” paragraph of this section.

.5 Materials and waste management

.1 On the roof, light materials and sheet materials shall be kept in containers or securely attached. Otherwise, the Departmental Representative may prohibit the storage of materials on the roof.

.2 Waste shall be disposed of as it is generated via a waste chute or in appropriate containers; the Contractor shall put in place means to prevent waste from being blown away by the wind.

.3 All waste shall be removed from the roof at the end of each shift.

.4 Unless specifically authorized by the Departmental Representative, any waste container shall be placed at least 3 m from any structure or building.

.6 Protection of building occupants and the public

.1 The Contractor shall install covered walkways, nets or other devices to protect workers, the public and building occupants from falling objects at building entry and exit points. The chosen means of protection shall be approved by the Departmental Representative.

.2 A ground safety perimeter shall be laid out below the work area to protect workers, the public and building occupants.

.3 The ground work area, materials handling area and the area where the boiler is installed shall be clearly barricaded so that the building occupants and the public do no have access to it.

.4 Prior to installing any equipment that may emit gases or vapours, the Contractor shall obtain approval from the site manager, who will ensure that there is no risk of infiltration into the building’s ventilation systems.

1.39 STEEL STRUCTURE ERECTION OR DISMANTLING

.1 In addition to complying with Section 3.24 of the Safety Code for the Construction Industry (S-2.1, r.4), the Contractor shall comply with the requirements set out in the following paragraphs.

.2 The Contractor shall submit the following documents to the Departmental Representative prior to the commencement of steel structure erection work:

.1 Erection procedure in accordance with Section 3.24.10 of the Safety Code for the Construction Industry (S-2.1, r.4);

.2 Rescue procedure for the rescue of a worker suspended in a safety harness within a maximum period of 15 minutes, adapted for the site and in accordance with Section 3.24.4 of the above code; this procedure shall be accompanied by written confirmation that it has been tested;

.3 Certification by an engineer that the anchor rods have been installed in accordance with the anchoring plan, as required by Section 3.24.12 of the same code;

.4 Hoisting procedure, where hoisting is carried out in one of the ways set out in Section 3.24.15 of the same code;

.5 Name of the person identified as the rescuer and said person's rescue training certificate;

.6 Name of the person identified as the first-aider and said person's first aid training certificate;

.3 The Contractor shall ensure that the following documents are available for consultation on site at all times:

.1 Steel structure manufacturer's erection plan complying with the requirements of Section 3.24.9 of the Safety Code for the Construction Industry (S 2.1, r.4);

.2 Column anchor rod anchoring plan in accordance with the requirements of Section 3.24.11 of the Safety Code for the Construction Industry (S-2.1, r.4).

1.40 WORK NEAR A BODY OF WATER

.1 Not applicable.

1.41 USE OF INTERNAL COMBUSTION ENGINES INSIDE

.1 In addition to complying with Section 3.10.17 of the Safety Code for the Construction Industry (S-2.1, r.4), the Contractor shall comply with the requirements set out in the following paragraphs.

.2 The use of gasoline-powered equipment inside a building is prohibited, even if the building has openings.

.3 The use of other equipment fitted with internal combustion engines inside a building shall be authorized by the Departmental Representative.

.4 For any use of equipment fitted with an internal combustion engine inside a building, even if the building has openings, the Contractor shall install a ventilation system to keep toxic gas concentrations within regulatory limits. Foul air shall be evacuated outside the building.

.1 Prior to using equipment fitted with an internal combustion engine, the Contractor shall plan the following in writing:

.1 Number of ventilators to be installed;

.2 Ventilator power;

.3 Ventilator location;

.4 Dimensions of openings that will be open during the work.

.2 During the operation of equipment fitted with an internal combustion engine, the Contractor shall measure the concentration of carbon monoxide and nitrogen oxide in the work area at the level of the workers' breathing area; the concentration levels measured shall be recorded every 30 minutes in a log available for consultation.

.3 If the work takes place in an occupied building, the Contractor shall also measure the concentration of carbon monoxide and nitrogen oxide every 30 minutes in the premises adjacent to the work area and record these values in a log.

.4 If the carbon monoxide or nitrogen oxide detector alarm is triggered during the work, the Contractor shall suspend the work and take the necessary corrective measures before resuming the work.

.5 A portable fire extinguisher shall be available at all times in the work area when equipment fitted with an internal combustion engine is in use.

.6 The equipment shall be kept at a safe distance from any combustible material.

.7 No storage of fuel for equipment fitted with an internal combustion engine is permitted inside a building.

1.42 TEMPORARY HEATING

.1 In addition to complying with Section 3.11 of the Safety Code for the Construction Industry (S-2.1, r.4), the Contractor shall comply with the requirements set out in the following paragraphs.

.2 A portable fire extinguisher shall be available at all times in the vicinity of heating appliances, regardless of the type of heating used.

.3 Heating appliances shall always be used in accordance with manufacturer specifications.

.4 Where applicable, covers and tarpaulins used in the vicinity of heating appliances shall be securely fastened so that they cannot fall onto such appliances, the piping connected to such appliances or any other source of heat.

.5 Gas cylinders shall be installed in such a way as to be protected from the movement of vehicles and other equipment.

.6 For any use of non-electrical heating equipment, the Contractor shall install a carbon monoxide detector in the work area, near the appliances and/or workers, throughout the entire heating period. The Contractor shall immediately make the necessary corrections to heating systems if the detector alarm sounds.

.7 The Contractor shall ensure a minimum level of heating system monitoring outside working hours (evenings and weekends). The Contractor shall submit a monitoring plan to the Departmental Representative prior to using heating systems.

1.43 WORK NEAR OVERHEAD POWER LINES

.1 Where there is an overhead power line in the work area and the Contractor chooses to apply paragraph (b) of Section 5.2.2 of *the Safety Code for the Construction Industry* (2.1, r.4), a copy of the agreement with the electrical operation company and a copy of the work procedure, required by Section 5.2.2 (b), shall be submitted to the Departmental Representative prior to the commencement of work in connection with said documents.

1.44 UNDERWATER WORK

.1 Not applicable.

1.45 OHS SUBORDINATION AGREEMENT

.1 See the following page for the agreement to be completed, a copy of which shall be submitted to the Departmental Representative.

OHS SUBORDINATION AGREEMENT

Project: _____ **Address:** _____

EXTERNAL CONTRACTOR

I hereby undertake to submit to the authority of (name of project management company)

_____, which is the project manager for the project indicated above, for the duration of our work on the site. Consequently, I confirm that I have read and understood the prevention program of the project manager and I undertake to:

- Inform my employees about the content of the project manager's prevention program and ensure that the provisions thereof are complied with at all times;
- Provide the prevention program specific to our activities carried out as part of this project;
- Inform the project manager about my work on the site and obtain the project manager's agreement before proceeding with the work;
- Follow the health and safety guidelines given by the project manager's on-site representative and attend, as required, the training activities and health and safety meetings organized by said representative.

Representative's name:	Company name:
Description of the work to be carried out on the site:	
Approximate dates of the work: Start:	End:

_____ _____
Signature Date

PROJECT MANAGER

I hereby undertake to allow the company (name of external contractor)

_____ to carry out work under the above-mentioned project and, as project manager, to take the necessary measures to protect the health and safety of workers on the site. In the event that the contractor refuses or fails to comply with my directives on a repeated basis, I undertake to inform the PWGSC Departmental Representative and to provide documentary evidence of my interventions with the contractor.

Representative's name:	Name of the contracting company:

Signature: _____ Date: _____

Submit a completed and signed copy to the Departmental Representative.

END OF SECTION

PARTIE 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 Section 02 41 16.09 — Structure Demolition — Short Form

.2 Section 31 23 33.01 — Excavation, Trenching and Backfilling

1.2 REFERENCE STANDARDS

.1 Definitions

Environmental pollution and damage: presence of chemical, physical or biological elements or agents that are harmful to people's health and wellbeing, alter the ecological balances important to humans and constitute an adverse impact on species that play an important role for such balances, or degrade the aesthetic, cultural or historical nature of the environment.

Environmental protection: prevention/control of pollution and disturbance to habitats and the environment during construction.

.2 Canadian Construction Documents Committee (CCDC)

.1 CCDC 2-2008 Fixed Price Contract.

.3 U.S. Environmental Protection Agency (EPA)/Office of Water

.1 EPA 832/R-92-005-92, Storm Water Management for Construction Activities, Chapter 3.

.2 2012 EPA Construction General Permit (CGP).

1.3 DEFINITIONS

.1 Environmental pollution and damage: presence of chemical, physical or biological elements or agents that are harmful to people's health and wellbeing, alter the ecological balances important to humans and constitute an adverse impact on species that play an important role for such balances, or degrade the aesthetic, cultural or historical nature of the environment.

.2 Environmental protection: prevention/control of pollution and disturbance to habitats and the environment during construction.

1.4 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION PURPOSES

.1 Submit required documents and samples in accordance with Section 01 33 00 — Submittal Procedures.

.2 Technical data sheets

.1 Submit the required technical data sheets and manufacturer's instructions and documentation for toxic products.

.2 Submit two (2) copies of the Material Safety Data Sheets required under the terms of the Workplace Hazardous Materials Information System (WHMIS), in accordance with Sections 01 35 43 — Environmental Procedures and 01 35 29.06 — Health and Safety Requirements.

.3 Prior to the start of construction or the delivery of materials and equipment to the site, submit an environmental protection plan to the Ministry Official for review and approval.

.4 The plan must provide a complete overview of known or potential environmental issues to be resolved during construction.

.5 The actions included in the environmental protection plan must be presented with a level of detail that is consistent with the environmental problems and the construction to be performed.

.6 The environmental protection plan must include the following:

.1 The names of the persons responsible for compliance with the plan.

.2 The names and competences of the persons responsible for the disposal manifests for the hazardous waste to be cleared from the site.

.3 The names and competences of the persons responsible for training site personnel.

.4 A description of the training program for environmental protection personnel.

.5 A sediment transportation and erosion prevention plan indicating the measures that will be taken, including construction monitoring and the creation of reports to verify that the measures are compliant with federal, provincial and municipal laws and regulations and EPA 832/R-92-005, Chapter 3.

.6 Drawings that show the location of temporary excavations or embankments, watercourse crossings, materials, structures, sanitation facilities, deposits of surplus materials or contaminated materials; drawings that illustrate the methods that will be used to control runoff and contain materials on the site.

.7 Traffic control plans, including measures to reduce erosion of temporary road platforms by the movement of construction vehicles, particularly in rain.

.1 These plans must include measures to reduce the transportation of material on public roads by vehicles or by runoff.

.8 A plan of the work area showing the activities planned in each part of the work area and indicating areas of restricted or prohibited use.

.1 This plan must include measures to mark the boundaries of usable areas and methods of protecting items located within authorized work areas that are to be preserved.

.9 The spill contingency plan must include procedures and guidelines to be followed and reports to be prepared in the event of an unplanned spill of a regulated substance.

.10 A plan for the disposal of solid non-hazardous waste, including methods and locations for the disposal of said solid waste and debris from clearing operations.

.11 An air pollution prevention plan specifying measures to keep dust, debris, materials and waste inside the site.

.12 A contamination prevention plan indicating the potentially hazardous substances that will be used at the site, measures to prevent those substances from being suspended in the air or inserted into the ground, as well as details of the measures that will be taken to ensure that the storage and handling of those substances comply with federal, provincial and municipal laws and regulations.

.13 A wastewater management plan indicating the methods and procedures to be followed for the management and disposal of wastewater directly resulting from construction activities, e.g. water used for concrete curing, washing/cleaning water, reduction of the water table, disinfection water, hydrostatic testing water, and water used to flush pipes.

1.5 FIRE

.1 The lighting of fires and burning of waste on site is prohibited.

1.6 DRAINAGE

.1 Prepare and submit a sediment transportation and erosion prevention plan indicating the measures that will be taken, including construction monitoring and the creation of reports to verify that the measures are compliant with federal, provincial and municipal laws and regulations, EPA 832/R-92-005, Chapter 3, and the EPA Construction General Permit.

.2 A storm water pollution prevention plan may replace the sediment transportation and erosion prevention plan.

.3 Provide the temporary drainage and pumping necessary to keep excavations and the site dry.

.4 Ensure that the water pumped into waterways, sewers or drainage systems does not contain suspended material.

.5 Discharge or dispose of water containing suspended materials or harmful substances in accordance with local authority requirements.

.6 Provide the temporary drainage and pumping necessary to keep excavations and the site dry.

.7 It is prohibited to pump water containing suspended particles into waterways, sewers or drainage systems.

.8 Control the disposal of water containing suspended particles or other harmful substances in accordance with local authority requirements.

.9 Whenever water is pumped from the bottom of an excavation or work area, that water may be discharged directly into the waterway if it does not contain suspended matter visible to the naked eye.

.10 Otherwise, the Contractor must provide a system to prevent sediment suction and discharge the water into an infiltration area outside the shore of any lake or waterway. However, if the amount of water pumped is too large to completely infiltrate the ground before it arrives at the body of water, then the water must be pumped into a sediment basin. The sediment basin must be located outside the shore of a lake, waterway or wetland (pond, swamp, marsh or bog). Water discharged from the sediment basin must not contain suspended matter visible to the naked eye.

.11 The methods used by the Contractor must be approved by the Ministry Official.

1.7 SITE CLEARING AND PLANT PROTECTION

.1 Not applicable.

1.8 WORK CARRIED OUT IN THE VICINITY OF WATERWAYS

.1 Not applicable.

1.9 POLLUTION PREVENTION

.1 Maintain the temporary facilities designed to prevent erosion and pollution that were erected under this contract.

.2 Ensure control of equipment and tooling emissions in accordance with local authority requirements.

.3 Prevent sandblasting materials and other foreign materials from contaminating the air and waterways beyond the application area.

.1 Provide temporary shelters at the designated locations, as directed by the Ministry Official.

.4 Add water to dry materials and cover trash to prevent wind from raising dust or causing debris. Remove dust on temporary paths.

1.10 PRESERVATION OF HISTORICAL/ARCHAEOLOGICAL FEATURES

.1 Not applicable.

1.11 NOTICE OF NON-COMPLIANCE

.1 A written notice of non-compliance will be issued to the Contractor by the Ministry Official whenever non-compliance with any federal, provincial or municipal law, regulation or permit, or any other element of the Contractor's environmental protection plan, is observed.

.2 Upon receipt of a notice of non-compliance, the Contractor shall propose corrective measures to the Ministry Official and implement them with the approval of the Ministry Official.

.1 The Contractor shall wait until written approval is obtained from the Ministry Official before implementing the proposed measures.

.3 The Ministry Official shall order the work to be stopped until satisfactory corrective measures are taken.

.4 No additional time or adjustments will be granted for work stoppages.

1.12 MANAGEMENT OF EXCAVATION MATERIALS AND SCRAP

.1 Throughout the term of the contract, the Contractor shall ensure that any person under its responsibility takes all necessary measures to properly dispose of excavation and backfilling materials.

.1 All scrap must be transported off-site to a location that complies with the Environment Quality Act, the Regulation respecting the landfilling and incineration of residual materials of the Ministère de l'Environnement et de la lutte contre les changements climatiques (Quebec Ministry of the Environment and the Fight against Climate Change — MELCC) (L.R.Q., c.Q-2) and the Regulation respecting hazardous materials (Q-2, r.15.2). The Contractor shall itself find this location (sanitary landfill site, dry material disposal site or trench disposal site) and submit it for the approval of the Ministry Official.

.2 The disposal of excavation materials must always take place outside of bodies of water (lakes, rivers, streams, etc.) and their respective banks and floodplains. In addition, no action that could damage or alter waterways or shorelines will be tolerated. In addition, the Contractor shall take all necessary measures to ensure that no part of the clearing stored in this manner is driven outside the limits of the landtake.

.2 The Contractor shall provide written evidence that materials from the site have been disposed of in an authorized location.

.1 Copies of transportation manifests, hours of service signs and receipts issued by the organization responsible for disposing of waste removed from the work area.

1.13 CONTAMINATED SOILS

.1 On the work site, there are contaminated soils. The Contractor shall follow the instructions of the Environmental Supervisor for the disposal of the concrete slab, which has heating oil stains, and for its replacement with an unstained one. The Contractor shall separate the stained concrete and the unstained concrete so that the stained concrete is disposed of in accordance with the regulations in force and at the authorized sites. In addition, the granular materials under the concrete slab will need to be piled for sampling before they are disposed of. The Environmental Supervisor will be responsible for guiding the Contractor with respect to soil management. The work must be carried out in accordance with the Soil Protection and Contaminated Sites Rehabilitation Policy and the Land Protection and Rehabilitation Regulation.

.2 The Contractor shall adapt its construction procedures to enable the removal of contaminated soils. During construction, control samples and soil analyses will be performed, and wait times are required. The Contractor shall not at any time claim costs for loss of time for taking control samples or the time required to obtain the results of the analysis. In addition, soils will be piled so control samples can be taken for soil analysis.

.3 Please note that during environmental rehabilitation, an environmental firm will be present for environmental monitoring.

.4 Excavated contaminated soils will be managed in accordance with the Regulation respecting the burial of contaminated soils and the interim contaminated soil management grid outlined in the Soil Protection and Contaminated Sites Rehabilitation Policy.

.5 The Contractor shall provide the Ministry Official with transportation manifests to prove that contaminated soils from the site have been disposed of at authorized sites.

.6 The Contractor shall, at the beginning of the project, submit to the Ministry Official the designated locations for disposal of contaminated soils and concrete. As such, the Contractor shall find attached the soil environmental characterization report.

.7 All excavation work shall be performed under the constant oversight of the Environmental Supervisor mandated by Public Works and Government Services Canada (PWGSC). Sampling to confirm the achievement of rehabilitation objectives or to determine the management method for excavated soils will be performed by the Environmental Supervisor. The Contractor shall make provisions to leave the machinery present on the site and the operator thereof at the disposal of the Environmental Supervisor when piling excavation materials or for trenching, and the Contractor shall also provide for a minimum wait time of five days to receive the results of the analysis and confirmation of the method of disposal of the piled soils. The Contractor shall provide for the installation of a protective membrane prior to soil piling and a protective membrane to cover the soils piled. The Contractor shall include such costs in its bidding fee.

.8 The costs related to the use of the machinery and the operator thereof and the wait times must form an integral part of Contractor’s bid and be included among the items in the bidding form.

.9 The interpretation of the chemical analysis results, as well as the drafting of technical reports, will be the responsibility of the Environmental Supervisor. To that end, Contractor shall provide the Environmental Supervisor with all the documents and information required for the preparation of the Environmental Compliance Report that are in its possession or within its remit, such as transportation manifests, and weighing notes from disposal sites or borrow pits.

1.14 TEMPORARY STORAGE OF CONTAMINATED SOILS

.1 Contaminated soils will be temporarily stored on site. The Contractor shall provide for the installation of a protective membrane under the piled soils and on top of the pile. The protective membrane must be large enough to fully cover the bottom of the pile and the top and sides of the pile. In addition, the Contractor must ensure that the protective membrane is properly installed and anchored to prevent it from being blown away. The protective membrane must be a polyethylene film that is at least 0.25 mm thick. Each band must straddle a minimum width of 300 mm.

.2 Depending on the results of the analysis and the degree of contamination, the soils may be returned to the site or must be removed from the site and disposed of in accordance with the regulations in force at the authorized sites. The Contractor shall provide for these costs in its bidding price.

1.15 DISCHARGE OF CONTAMINATED WATER TO SANITARY, STORM OR COMBINED SEWER SYSTEMS

.1 Contaminated water must be discharged in accordance with the environmental laws and regulations of Quebec and MELCC policies based on the nature and degree of contamination.

PARTIE 2 PRODUCTS

2.1 NOT APPLICABLE

PARTIE 3 EXECUTION

3.1 CLEANING

.1 Cleaning during construction: Perform cleaning tasks in accordance with Section 01 74 11 — Cleaning.

.1 Leave the premises clean at the end of each work day.

.2 Dispose of on-site waste and scrap materials where indicated after obtaining written approval from the Ministry Official.

.3 Ensure that public waterways and storm and sanitary sewers remain free of waste and volatile materials that have been disposed of.

.4 Final cleaning: Dispose of surplus material(s), waste, tools and equipment from the site in accordance with Section 01 74 11 — Cleaning.

.5 Waste management: sort waste for recycling and reuse in accordance with Section 01 74 19 — Construction Waste Management and Disposal.

.1 Remove recycling bins and boxes from the site and dispose of materials at the appropriate facilities.

END OF SECTION

PARTIE 1 GENERAL

1.1 DOCUMENTS AND SAMPLES TO BE SUBMITTED

.1 Submit the required documents and samples in accordance with Section 01 11 01 — General Requirements.

1.2 INSTALLATION AND REMOVAL OF EQUIPMENT

.1 Prepare a location plan that identifies the proposed location and dimensions of the area to be enclosed and used by the Contractor, the number of site trailers required, the access routes to the enclosed area and the enclosure installation details.

.2 Identify one or more areas for temporary piling of contaminated soils or contaminated concrete prior to the disposal thereof.

.3 Indicate areas to be gravel-coated to prevent mud deposits.

.4 Indicate any additional areas or transit areas.

.5 Provide, set up or arrange the construction facilities necessary to allow work to be carried out as soon as possible.

.6 Dismantle the equipment and remove it from the site when it is no longer needed.

1.3 ON-SITE STORAGE/ADMISSIBLE LOADS

.1 Ensure that work is performed within the limits specified in the contract documents. Do not unreasonably clutter the premises with materials and equipment.

.2 Do not overload or allow the overloading of any part of the facility such that its integrity is compromised.

1.4 ACCESS ROUTES

.1 Develop suitable access routes to the site and ensure their maintenance.

.2 If it is permitted to use existing roads to access the work site, maintain them for the duration of the work and, if applicable, repair any damage caused to the work site.

.3 Clean runways and traffic routes if site equipment has been used.

.4 Traffic routes must be cleaned weekly or whenever they have been soiled by the transport of materials and as weather conditions warrant. The Contractor may be required to clean the traffic routes on a daily basis due to the accumulation of dirt, sand, or other materials on them.

1.5 SAFETY MEASURES

.1 Employ and pay for reliable security personnel to monitor the site and any materials/equipment thereon after hours and on days off.

.2 The Contractor shall provide a security area site access manager at all times during the performance of the work.

1.6 COMMUNICATION

.1 Provide the Ministry Official with two cell phones, at its expense, for the duration of the work, for communications between the Contractor, the assistant and the Ministry Official.

1.7 OFFICE OF THE MINISTRY OFFICIAL

.1 Not required.

1.8 VEHICLES FOR USE BY MINISTRY OFFICIALS

.1 Not required.

1.9 STORAGE OF MATERIALS, EQUIPMENT AND TOOLS

.1 Provide weatherproof sheds to store materials, equipment and tools and keep them clean and in good order.

.2 Leave materials and equipment that do not have to be kept sheltered from the elements on the work site, but ensure that they hinder construction as little as possible.

.3 Contaminated materials must be stored in accordance with the requirements of Section 01 35 43 — Environmental Procedures.

1.10 SANITATION FACILITIES

.1 Provide sanitation facilities for workers in accordance with relevant ordinances and regulations.

.2 Post required notices and take all precautions required by local health authorities. Keep the area and location clean.

1.11 ELECTRICAL POWER

.1 For construction purposes, provide and cover the costs of a temporary electrical power supply and maintenance thereof in accordance with the ordinances and regulations in force.

1.12 TEMPORARY LIGHTING

.1 Not applicable.

1.13 CLEANING

.1 Dispose of debris, waste, and packaging materials from the construction site on a daily basis.

.2 Remove dust and mud from traffic routes.

.3 Store materials/equipment recovered during demolition work.

.4 Do not store new materials/equipment or recovered materials/equipment in site facilities.

1.14 WORKS INFORMATION PANEL

.1 The Contractor shall supply and install a works information panel at a location designated by the director of the airport. The panel will be made of plywood measuring 1200x2400x19 mm with suitable supports to withstand the weather.

.2 Transport Canada shall provide the adhesive film to be applied to the surface.

1.15 MEASUREMENT FOR PAYMENT PURPOSES

.1 The costs incurred to comply with the requirements of this section must be included in the Contractor’s general expenses section and divided proportionally among the various payment items of the bid.

PARTIE 2 PRODUCTS

2.1 NOT APPLICABLE

.1 Not applicable.

PARTIE 3 EXECUTION

3.1 TEMPORARY MEANS OF EROSION AND SEDIMENT CONTROL

.1 Put in place temporary means of erosion control such as anti-erosion barriers arranged crosswise in waterways and at the bottom of slopes.

.2 If necessary, develop sediment basins upstream of waterways to collect suspended particles carried in surface runoff.

.3 Protect deposits of granular materials exposed to wind erosion with tarpaulins or any other method deemed acceptable by the Ministry Official.

.4 The use of calcium chloride-based dust suppressants is prohibited.

.5 Inspect, maintain and repair control facilities as necessary until permanent vegetation has been established.

.6 Remove control facilities at the appropriate time and restore and stabilize the areas disturbed during construction.

END OF SECTION

PARTIE 1 GENERAL

1.1 RELATED REQUIREMENTS

1.2 SECTION 26 55 36.19 – LOW-INTENSITY (LI) RED OBSTRUCTION LIGHTING.REFERENCE STANDARDS

.1 Public Works and Government Services Canada (PWGSC), Standard Acquisition Clauses and Conditions (SACC) Manual — ID: R2002D, Title: General conditions “C”, effective May 14, 2004.

1.3 SETTING UP AND REMOVAL OF EQUIPMENT

.1 Provide, set up or arrange the temporary access and protection necessary for work to be carried out as soon as possible.

.2 Dismantle the equipment and remove it from the site when it is no longer needed.

1.4 SITE FENCING

.1 If the Contractor is required to construct temporary fencing to mark the perimeter of its work site, the Contractor shall provide, install and maintain it throughout the term of the contract. Detailed location plans for such fencing must be provided for approval prior to installation. No further work relating to the contract may be done until such fencing is fully erected.

.2 When excavations are performed, they must be marked out and protected by measures that comply with the Safety Code for the construction industry. Where required, the Contractor shall enclose the perimeter of the excavation. It must keep such fencing in good condition and not remove it until the excavation has been filled.

.3 Fence sections must be installed with no gaps and constitute a sealed barrier all along the perimeter to be enclosed.

.4 The temporary fence sections to be installed must meet the following requirements:

.1 Be self-supporting;

.2 Be made of metal materials;

.3 Have a height of 1.8 metres and a width of 2.4 metres;

.4 Have flat bases consisting of rectangular plates and rods that allow them to be anchored to the ground when required (traffic, geometry, other reasons);

.5 Have an integrated mechanism so that the fences are linked at the top and bottom so as to constitute an effective obstacle to protect and guide users;

.6 Contain apertures and not be used as a screen, in order to allow visibility distances close to intersections to be observed.

.7 Have low intensity obstacle lighting in accordance with Section 26 55 36.19 – Low-intensity (LI) red obstruction lighting.

1.5 GUARDRAILS AND BARRIERS

.1 Provide rigid and safe guardrails and barriers and install them around deep excavations.

.2 Provide and install such items in accordance with the requirements of the competent authorities.

1.6 SHELTERS, ENCLOSURES AND WEATHER CLOSURES

.1 Not applicable.

1.7 DUST SHIELDS

.1 Not applicable.

1.8 SITE ACCESS ROUTES

.1 Provide the tracks, roads, ramps and pedestrian crossings necessary for access to the site.

1.9 TRAFFIC

.1 Retain the services of competent signallers and provide for the signalling devices and flares, barriers, and lighting required for the work to be carried out and the public to be protected.

1.10 EMERGENCY VEHICLE ACCESS ROUTES

.1 Ensure access to the site for emergency vehicles and ensure sufficient overhead clearances.

1.11 PROTECTION OF NEARBY PUBLIC AND PRIVATE PROPERTY

.1 Protect the surrounding public and private property from any damage that may result from the work being carried out.

.2 If applicable, assume full responsibility for the damage caused.

1.12 PROTECTION OF FINISHED BUILDING SURFACES

.1 Not applicable.

1.13 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

.1 Sort waste according to Section 01 74 19 — Construction Waste Management and Disposal.

PARTIE 2 PRODUCTS

.1 Not applicable.

PARTIE 3 EXECUTION

.1 Not applicable.

END OF SECTION

PARTIE 1 GENERAL

1.1 SITE CLEANLINESS

.1 Keep the site clean and free from any build-up of debris and scrap materials except for contaminated soil materials awaiting analytical results.

.1 Dispose of debris and scrap materials off-site on a daily basis, at predetermined times, or dispose of them as directed by the Departmental Representative. Scrap materials shall not be burned on the site unless such disposal is authorized by the Departmental Representative.

.2 Provide on-site containers for waste and debris collection. Provide a canvas covering the top of the containers.

.3 Provide on-site containers for disposal of debris and waste materials.

.4 Store volatile waste in closed metal containers and dispose of it off-site at the end of each shift.

.5 Ensure proper ventilation of the premises during the use of volatile or toxic substances. However, using the building's ventilation system for this purpose is prohibited.

1.2 FINAL CLEANING

.1 Upon substantial completion of the work, remove any surplus materials, tools, construction equipment and materials that are no longer required to carry out the rest of the work.

.2 Remove debris and scrap materials, except those generated by other contractors, and leave the premises clean and ready to be occupied.

.3 Before final inspection, remove the surplus materials, tools, construction equipment and materials.

.4 Remove debris and scrap materials, including those generated by the site owner or by other contractors.

.5 Dispose of scrap materials off-site at predetermined times or dispose of as directed by the Departmental Representative.

.6 Arrange for and obtain permits from the competent authorities for the disposal of debris and scrap materials.

.7 Remove debris or surplus materials from crawl spaces and other accessible concealed spaces.

.8 Remove snow and ice from building access roads.

1.3 WASTE MANAGEMENT AND DISPOSAL

.1 Sort waste for reuse/redeployment and recycling in accordance with section 01 74 19 – Construction Waste Management and Disposal.

PARTIE 2 PRODUCTS

.1 Not applicable.

PARTIE 3 EXECUTION

.1 Not applicable.

END OF SECTION

PARTIE 1 GENERAL

1.1 WASTE MANAGEMENT OBJECTIVES

.1 Prior to the commencement of work, meet with the Ministry Official to review the Public Works and Government Services Canada (PWGSC) waste management plan and objectives.

.2 The PWGSC's waste management objective is to reduce the total flow of construction/demolition waste to landfills. Provide the Ministry Official with documentation certifying that comprehensive procedures and measures for waste management and the recycling and reuse of recyclable and reusable materials have been implemented.

.3 Exercise maximum control of solid construction waste.

.4 Protect the environment and prevent pollution and environmental impacts.

1.2 RELATED REQUIREMENTS

.1 Section 31 23 33.01 — Excavation, Trenching and Backfilling

.2 Section 01 35 43 — Environmental Procedures.

1.3 DEFINITIONS

.1 Class III non-hazardous materials: Construction, renovation and demolition waste.

.2 Cost-Profit Analysis Plan (CPAP): A plan based on WRP data to monitor the economic aspect of waste management methods.

.3 Demolition Waste Audit (DWA): Applies to waste actually generated by the work.

.4 Landfill — inert waste: Bituminous and concrete materials only.

.5 Source Waste Sorting Program (SWSP): On-site sorting of reusable and recyclable waste to ensure that it is classified into the appropriate categories.

.6 Recyclability: The nature of a product or material that can be retrieved at the end of its life cycle and transformed into a new product for reuse.

.7 Recycle: To collect or process waste and used materials to enable them to be reintroduced into a consumption cycle as new products.

.8 Recycling: Operations involving the sorting, cleaning, treatment and reconstitution of solid waste and other disposed of materials to promote the use of those materials in a form different from their original state. Recycling does not include the combustion, incineration or thermal destruction of waste.

.9 Reuse: Repeated use of a product or material in its original form for either a different or similar use. Reuse includes the following:

.1 The recovery of products and materials that can be reused, generated by the modernization of a structure or facility, prior to their demolition, for resale or reuse within the same project or storage for future use.

.2 The return of products and materials that can be reused to suppliers, such as pallets and unused products.

.10 Recovery: Removal of load-bearing and non-load-bearing components and building materials during the deconstruction or dismantling of industrial, commercial or institutional structures for reuse or recycling.

.11 Sorted waste: Waste already classified by type.

.12 Source sorting: Separation of different types of products and scrap materials from the moment they become waste.

.13 Waste Audit (WA): A detailed record of the products and materials of which a building is composed. The WA includes the volume and mass assessment of the quantities of scrap materials and waste generated by construction, renovation, deconstruction or demolition. Quantities of materials reused, recycled and disposed of in landfills must be listed separately.

.14 Waste Management Coordinator (WMC): Contractor's representative responsible for overseeing waste management activities and coordinating reporting, document and sampling requirements.

.15 Waste Reduction Plan (WRP): A written document in which opportunities for waste reduction, reuse or recycling are explored. The WRP is based on data from the waste control sheet (Appendix A).

1.4 DOCUMENTS

.1 Keep a copy of the following document on site:

.1 Construction Waste Management and Disposal Plan.

1.5 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION PURPOSES

.1 Submit a management and disposal plan for non-hazardous solids that includes procedures and locations for disposal of such solid waste and scrap from excavation, trenching and backfilling (Section 31 23 33.01).

1.6 WASTE DISPOSAL

.1 It is prohibited to bury scrap or waste.

.2 It is prohibited to dispose of waste, volatile materials, mineral spirits, hydrocarbons or paint thinner in a waterway or in a storm or sanitary sewer.

.3 It is prohibited to send waste containing mercury, such as fluocompact lamps, fluorescent tubes, mercury discharge lamps or any other type of lamps containing mercury, to landfill.

.4 Maintain a construction waste record indicating the following:

.1 The number and size of bins.

.2 The type of waste placed in each bin.

.3 The total tonnage of waste generated.

.5 Recover scrap materials as deconstruction/dismantling progresses.

.6 Prepare a project summary to monitor the destination and quantities of each type of scrap material identified in the pre-deconstruction audit.

.7 Dispose of waste at an authorized site.

1.7 USE OF PREMISES AND FACILITIES

.1 Perform work with as little impact as possible on the normal use of the premises.

1.8 WORKS SCHEDULE

.1 Coordinate waste management with other activities to ensure an orderly flow of work.

PARTIE 2 PRODUCT

2.1 NOT APPLICABLE

.1 Not applicable.

PARTIE 3 EXECUTION

3.1 GENERAL

.1 Carry out the work according to the plans and specifications and the waste management and disposal plan.

.2 Handle waste to be disposed of in accordance with the relevant codes and regulations.

3.2 CLEANING

.1 Once the work is complete, remove the tools and then dispose of the waste. Keep the premises clean and tidy.

.2 Clean the construction area as you work.

.3 Dispose of cleaning waste at an authorized site.

3.3 KEY ENVIRONMENTAL AUTHORITIES WITHIN THE FEDERAL AND PROVINCIAL GOVERNMENTS

.1 Ministère de l'Environnement et de la lutte contre les changements climatiques (Quebec Ministry of the Environment and the Fight against Climate Change — MELCC).

END OF SECTION

PARTIE 1 GENERAL

1.1 SUMMARY

.1 This section includes the following:

.1 Demolition and removal of building and structures.

.2 Demolition and removal of building mechanical, electrical and plumbing equipment.

.3 Demolition and removal of site improvements located near the building and structures to be demolished.

.4 Demolition and removal of concrete foundations.

.5 Cut the piles to the bottom of the excavation provided in Section 31 23 33.01 — Excavation, Trenching and Backfilling.

.2 The attached drawing contains the location of the building to be demolished for this project; the Contractor's representative must provide further details on execution in a demolition plan prepared by an engineer.

1.2 RELATED REQUIREMENTS

.1 Section 01 35 43 — Environmental Procedures

.2 Section 01 74 11 — Cleaning

.3 Section 01 74 19 — Construction Waste Management and Disposal

.4 Section 02 42 00 — Construction Materials Removal and Salvage

.5 Section 02 82 00.01 — Asbestos Abatement - Minimum Precautions

.6 Section 31 23 33.01 — Excavation, Trenching and Backfilling

1.3 REFERENCE STANDARDS

.1 Canadian Council of Ministers of the Environment (CCME)

.1 PN 1326 - 2005, Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products.

.2 CSA Group (CSA)

.1 CSA S350 - M1980 (R2003), Code of Practice for Safety in Demolition of Structures.

.3 National Research Council of Canada (NRC)

.1 National Building Code of Canada 2015 (NBC).

.2 National Fire Code of Canada 2015 (NFC).

1.4 DEFINITIONS

.1 Demolition: a quick method of disposing of a structure or work, once any hazardous materials within it have been removed.

.2 Hazardous materials: hazardous substances, goods, and products that may include, but are not limited to, asbestos, PCBs, CFCs, HCFCs, poisons, corrosive agents, flammable

materials, munitions, explosives, radioactive substances, or any other materials that, when improperly used, may have adverse effects on the health or wellbeing of individuals or on the environment, as defined in the Hazardous Products Act (R.S.C. 1985) by the federal government, including the latest amendments.

.3 Waste Management Coordinator (WMC): Contractor's representative responsible for overseeing waste management activities and coordinating reporting, document and sampling requirements.

.4 Construction Waste Management Plan: A written plan dealing with the possibilities of reduction, reuse or recycling of materials prepared in accordance with Section 01 74 19 — Construction Waste Management and Disposal.

.5 Construction Waste Management Report: a written report indicating the materials that were used in the Construction Waste Management Plan for the reduction, reuse or recycling of materials in accordance with Section 01 74 19 — Construction Waste Management and Disposal.

1.5 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION PURPOSES

.1 Documents/samples to be submitted for approval: Submit the following documents and samples prior to commencing the work required under this section.

.1 Shop drawings: Shop drawings submitted must bear the seal and signature of an engineer recognized or authorized to practice in Canada, in the province where the work is being performed, as follows:

.2 Submit required documents and samples in accordance with Section 01 74 19 — Construction Waste Management and Disposal

.3 Demolition schedule: Coordinate the requirements of this article with those of Section 01 32 16.19 — Construction Progress Schedules - Bar (Gantt) Chart.

.2 Documents/samples to be submitted: Provide the following documents/samples at the request of the Ministry Official:

.1 Qualification data: Submit information about companies and their personnel that demonstrate that they have the skills and experience necessary to accomplish the work set forth in this section, including, but not limited to, a list of completed projects, including project names and addresses, and the name and address of the Official, for work of similar complexity and scope.

1.6 TRANSPORTATION, STORAGE AND HANDLING

.1 Waste management and disposal: Sort waste for recycling and reuse in accordance with Section 01 74 19 — Construction Waste Management and Disposal.

1.7 QUALITY ASSURANCE

.1 Regulatory agency requirements: Ensure work is performed in accordance with the LCEA and applicable provincial/territorial regulations.

.1 Obey the transportation and disposal regulations adopted by the competent authority.

.2 Standards: ANSI A10.6 and NFPA 241.

.2 Regulatory requirements: Perform the work described in this section in accordance with the following:

.1 Federal Workers' Compensation Service, Provincial/Territorial Workers' Compensation Boards.

.2 Provincial/territorial occupational health programs and standards, Workplace Health and Safety, Labour Program, Government of Canada.

1.8 EXISTING CONDITIONS

.1 Verify the Designated Hazardous Materials Report and take the necessary measures to preserve the environment.

.2 If a material resembling asbestos applied by spray or trowel or any other material designated and listed as hazardous is discovered during the work, suspend the work, take the appropriate precautions and immediately inform the Ministry Official.

.1 Do not resume work until written instructions have been received from the Ministry Official.

.3 Notify the Ministry Official before blocking access to the building or interrupting services.

PARTIE 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

.1 Turn off equipment, tools, and machinery when not in use unless extreme temperature conditions require uninterrupted operation.

.2 Demonstrate that tools, equipment, and machinery are used in such a way that materials can be recovered in the best possible condition.

2.2 TEMPORARY SUPPORT STRUCTURES

.1 Use an engineer who is recognized or authorized to practice in the province where the work is being performed to design the temporary support structures required for demolition, underlay work and other foundation supports required for the project.

2.3 EMBANKMENTS

.1 Acceptable embankments: Embankments must meet the requirements of Section 31 23 33.01 — Excavation, Trenching and Backfilling.

PARTIE 3 EXECUTION

3.1 INSPECTION

.1 Verify existing conditions and coordinate with the specified requirements to determine the area of the structure to be demolished.

.2 Review the existing construction project file provided by the Official.

.3 The Official does not guarantee that the existing conditions and the conditions specified in the project files are the same.

3.2 PREPARATORY WORK

.1 Perform work in accordance with Section 01 35 29.06 — Health and Safety Requirements.

.2 Protection

.1 Perform work in accordance with the storm water pollution prevention plan and erosion and sediment control plan.

.2 Take the necessary measures to prevent the movement or subsidence of or any other damage to the utility lines of adjacent works. Ensure the shoring and bracing of the structures as needed.

.3 Minimize the dust and noise produced by the work, as well as the inconvenience caused to the occupants of the premises.

.4 Protect building devices, mechanical and electrical installations, and utility lines.

.5 Provide the necessary dust shields, tarpaulins, guardrails, support items and other protective devices.

.3 Disconnect the electrical, telephone and telecommunications network. Place warning labels on electrical equipment that must remain switched on during demolition work to power other parts.

.1 Demolish the electric panel, outer mast and Hydro-Québec meter. Obtain all necessary approvals before commencing work.

.4 Mark and protect utility lines. Do not touch utility lines that are in service or live, and do not move those that pass through the premises.

.5 Disconnect and seal the designated pipes for the mechanical installations.

.1 Remove water and sewer lines in accordance with the requirements of the competent authority, as directed by the Ministry Official.

.2 Remove pipes from other underground systems according to the Ministry Official.

.3 Demolish the 10-gallon water heater as well as its electrical connection and all domestic water pipes made of steel, galvanized steel and copper

.4 Demolish the propane gas heater and gas piping as well as the wall chimney, thermostat and wires

3.3 DEMOLITION, RECOVERY AND DISPOSAL

.1 Remove items to be reused and store as directed by the Ministry Official.

.2 Unless otherwise indicated, dispose of removed materials and equipment and send to reuse companies and appropriate recycling facilities in accordance with the requirements of the competent authorities.

3.4 REMOVAL FROM SITE

.1 Transport materials for environmentally friendly disposal with trucking companies to the Sept-Îles dry materials disposal site, in accordance with the applicable regulations. It is prohibited to transport materials to places other than the waste management centres, trucking companies and waste-accepting organizations listed in the waste reduction plan without written approval from the Ministry Official.

.2 Dispose of other materials in accordance with the relevant regulations in approved facilities as indicated in the waste reduction plan. It is prohibited to transport materials to places other than facilities listed in the waste reduction plan without written approval from the Ministry Official.

.3 Dispose of contaminated materials at authorized sites that comply with the applicable regulations.

3.5 RESTORATION OF SITE

.1 Below-ground areas: Completely fill below-ground areas and demolition depressions. Use embankment material in accordance with the requirements of Section 31 23 33.01 — Excavation, Trenching and Backfilling.

.2 Site levelling: Perform a rough and uniform levelling of the demolition area to obtain a smooth surface free from unevenness or depressions that allow water to accumulate.

.3 Make sure the transition between existing surfaces and new adjacent surfaces is smooth.

3.6 REPAIRS

.1 Not applicable.

3.7 CLEANING AND RESTORATION OF PREMISES

.1 Keep areas clean and in good order during demolition.

.2 Once the work has been completed, restore the surfaces and parking areas that have been affected by the work to the same condition as the adjacent undisturbed surfaces.

END OF SECTION

PARTIE 1 GENERAL

1.1 SUMMARY

.1 This section includes requirements for the removal and thorough recovery of existing building materials for storage at a remote designated site.

1.2 RELATED REQUIREMENTS

.1 Not applicable.

1.3 DEFINITIONS

.1 Removal and recovery: Disassemble the items and dispose of them at the landfill site.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Coordination of recovery for existing items: Coordinate with the Ministry Official for the confirmation of materials, components and equipment to be disassembled and recovered. Proceed as follows:

.1 Items handed over to the Owner

.2 Disposal outside the site

.3 Confirmation of items that the Ministry Official will not reuse, but will keep:

.1 Transport recovered items to the location designated by the Ministry Official located at the landfill site.

PARTIE 2 PRODUCT

2.1 ITEMS RECOVERED

.1 Not applicable.

PARTIE 3 EXECUTION

3.1 RECOVERY

.1 Not applicable.

END OF SECTION

PARTIE 1 GENERAL

1.1 SUMMARY OF WORK

.1 In general, the work for this quote consists of removing asbestos-containing materials prior to the demolition of the warehouse, which has a low asbestos risk, as specified in this quote.

.2 These materials include cement panels containing 10% chrysotile asbestos and window sealant containing 20% chrysotile asbestos. Its non-friable materials are located outside the warehouse. It should be noted that asbestos has not been detected in other materials likely to contain asbestos, such as floor coverings and acoustic tiles.

.3 Asbestos-containing materials will be removed entirely outside the warehouse.

.4 The warehouse to be demolished was built in 1961. It has two floors. A survey of suspect asbestos-containing materials (SACMs) was conducted in 2014. The SACMs were collected inside and outside the building at the locations shown below (WSP Ref. Report, 2014, Appendix B — Figure 9).

.1 Inside (Room 2 on the ground floor):

.1 Sample 1: linoleum

.2 Sample 2: green 1’ x 1’ vinyl tile with white lines

.3 Sample 3: acoustic tile (ceiling)

.2 Outside (walls):

.1 Sample 4: black sealant around windows

.2 Sample 5: cement panels

1.2 RELATED REQUIREMENTS

.1 This section of the quote should be read in conjunction with the other technical quote sections, in particular:

.1 Section 02 41 16.09 — Structure Demolition.

.2 The terms and conditions apply to this section of the quote.

.3 The purpose of this section of the quote is to remove and eliminate cement panels containing asbestos and windows to which a sealant containing asbestos has been applied prior to demolition.

.4 The area of cement panels to be removed was estimated to be 100 square metres (WSP, 2014). It is the Contractor’s responsibility to verify the presence, location and quantity of cement panels containing asbestos prior to submission.

.5 There are two windows that have a sealant containing asbestos.

.6 The Contractor shall, prior to undertaking any work deemed to be excess, have the Owner or its Representative approve and validate the quantities of materials to be removed. Any excess work performed without the approval of the Owner or its Representative will not be paid.

.7 During work performed in low asbestos risk conditions, the Contractor shall provide all the equipment and labour necessary to carry out the work in accordance with applicable regulations and occupational health and safety best practices.

.8 All workers who have access to work areas suspected of emitting asbestos dust must have received the necessary training, as set out in the Safety Code for the Construction Industry, S-2.1, r.4.

.9 The Contractor shall also provide for a team foreman who shall be responsible for supervising the asbestos removal.

.10 The Contractor shall perform the work in a manner that prevents the dispersion of airborne asbestos fibres and asbestos waste at all times in the external areas of the work site under its responsibility.

1.3 REFERENCES

.1 The Contractor shall ensure that the work procedures comply with the requirements specified in federal and provincial legislation and reference documents, including:

.2 Federal legislation

.1 Transportation of Dangerous Goods Act, 1992 (S.C. 1992, c. 34).

.2 Transportation of Dangerous Goods Regulations (SOR/2001-286).

.3 Hazardous Products Act (R.S.C. 1985), c. H-3).

.4 Hazardous Products Regulations (SOR/2015-17).

.3 Provincial legislation

.1 Occupational Health and Safety Act (Chapter S-2.1).

.2 Occupational Health and Safety Regulations (Chapter S-2.1, r. 13).

.3 Safety Code for the Construction Industry (Chapter S-2.1, r. 4).

.4 Other documents

.1 Commission de la santé et sécurité du travail (occupational health and safety commission — CSST). Safe management of asbestos. Preventing exposure of workers to asbestos. May 2013.

.2 Institut de recherche Robert-Sauvé en santé et en sécurité du travail du Québec (Robert Sauvé research institute for occupational health and safety of Quebec — IRSST). Guide to respiratory protection devices used in Quebec. 2002.

.3 CSA Z94.4-F18, Selection, use and maintenance of respiratory protection devices.

1.4 DEFINITION

.1 Asbestos: the fibrous form of the mineral silicates belonging to the metamorphic rocks of the serpentine group (chrysotile) and the amphibole group (actinolite, amosite, anthophyllite, crocidolite, tremolite, or any mixture containing one or more of these minerals).

.2 Waste container for the transportation of asbestos waste. Container designed for the type of debris to be transported (e.g. metal container) and sealed against asbestos dust and fibres. It must be covered with a waterproof cloth for transportation and be provided with a “Class 9.1 — Asbestos” cabinet for the transportation of more than 500 kg of asbestos waste in accordance with the Transportation of Dangerous Goods Regulations.

.3 Breathable asbestos fibre: asbestos fibre with a diameter less than 3 µm and a length:diameter ratio greater than 3:1 (only fibres with a length greater than 5 µm are considered for measurement purposes).

.4 Friable material: material that can be crumbled, sprayed or reduced to powder manually when dry or that has been crumbled, pulverized or reduced to powder.

.5 SACM: Suspect asbestos-containing materials

.6 Asbestos dust: asbestos particles suspended in the air or deposited asbestos particles that may be suspended in the air at the workplace.

1.5 DOCUMENTS TO BE SUBMITTED

.1 Submit evidence of training of workers assigned to the work area to the Ministry Official.

.2 Submit proof of the transportation and disposal of asbestos-containing materials to the Ministry Official.

1.6 EXISTING CONDITIONS

.1 The existing conditions are described in the report on asbestos-containing materials in the warehouse.

.1 WSP 2014. Characterization of suspect asbestos-containing materials in Transport Canada buildings at the Sept-Îles Airport site. Report completed for PWGSC. 19 pp. and appendices.

.2 The information available indicates the presence of chrysotile asbestos fibres in cement panels and window sealant in a concentration greater than 0.1%.

.3 The Contractor shall inform all workers of the presence of asbestos in those materials.

.4 The Contractor shall inform the Ministry Official of the discovery of any materials that may contain asbestos during construction, other than those identified in this quote.

.5 The Contractor is responsible for verifying the site conditions and the presence, location and quantity of asbestos-containing materials prior to submission.

1.7 GENERAL OBLIGATIONS

.1 The Contractor shall take all necessary measures to ensure the safety of the public and workers during the work.

1.8 RESPIRATORY PROTECTION FOR WORKERS

.1 Suitable respiratory protection devices for low-risk work include, among others, non-motorized half-mask air purifying devices with P-100 filters (approved by the National Institute for Occupational Safety and Health). These must meet one of the following two standards:

.1 be recommended in the IRSST Guide to respiratory protection devices used in Quebec;

.2 be certified at least FFP2 according to EN-149, Respiratory Protective Devices — Filtering half masks to protect against particles — Requirements, testing, marking of the Association française de normalisation (French standardization organization — AFNOR).

.2 Masks for respiratory protection for workers must be selected in accordance with CSA Z94.4-F18, Selection, use and care of respirators.

.3 Filters must be used in accordance with the manufacturer's standards.

1.9 QUALITY ASSURANCE

.1 Comply with federal and provincial government requirements for asbestos management. In the event of a discrepancy between those requirements and those stated in this quote, the more stringent requirements take precedence. Comply with the regulations in force on the date that the work is performed.

.2 Worker protection requirements

- .1 Wearing of protective footwear compliant with Article 2.10.6 of the Code and fitted with non-skid soles for wet ground.
- .2 Wearing of a respiratory protection device for removing cement panels:
  - .1 Non-motorized, half-mask air-purifying respirator with P-100 particle filter personally distributed to the employee and labelled to show its effectiveness and use, ensuring adequate protection against asbestos and acceptable to the relevant provincial authorities.
  - .2 The breathing apparatus must provide airtight contact with the wearer's face.
  - .3 The breathing apparatus must be cleaned, disinfected and inspected after each shift or more frequently, if necessary, when given for the use of a single worker, or after each use when used by more than one worker.
  - .4 Any part of the breathing apparatus that is damaged or deteriorated must be replaced before the apparatus is used by a worker.
  - .5 When the breathing apparatus is not in use, it must be stored in a practical, clean and sanitary place.
  - .6 The employer shall establish procedures for the selection, use and maintenance of the respiratory equipment, and a copy of these procedures must be provided and explained to each worker required to wear a respiratory device.
  - .7 Workers must not be assigned to tasks that require a respiratory device to be worn if they do not have the physical ability to perform the task while wearing a respiratory device.
- .3 Wearing of disposable protective clothing that does not retain asbestos fibres or allow them to penetrate.
- .4 Torn protective clothing must be repaired or replaced.
- .5 It is prohibited to use compressed air in areas where asbestos removal is taking place.
- .6 Eating, drinking, chewing gum and smoking are not permitted in the asbestos removal area.
- .7 Workers must wash their hands and face before leaving the work area.
- .8 Workers assigned to work requiring the use of respiratory protection devices must be clean-shaven in order to allow proper adhesion of the respiratory protection device.
- .9 Equipment and materials brought to the site must be clean and in good condition and free of waste, asbestos dust or fibrous materials.
- .10 Single-use (disposable) equipment and materials must be new.

PARTIE 2 MATERIALS AND ENCLOSURES

2.1 EQUIPMENT AND MATERIALS

.1 HEPA vacuum cleaner: vacuum cleaner with a high-efficiency filtration system capable of filtering particles with a dimension of 0.3 µm at an effectiveness rate of at least 99.97%.

.2 Protective overalls: single-use fibre-proof item of clothing.

.3 Asbestos waste containers: place waste in double-envelope waterproof containers.

.1 The inner envelope must be a 0.15 mm-thick sealed polyethylene bag.

.2 The outer envelope into which the inner envelope will be inserted must be a rigid container with a lid that can be hermetically sealed made of fibre or metal for waste containing sharp-edged elements.

.3 Labelling requirements: apply a permanent warning label with the following information to all asbestos waste containers so that they are clearly visible after the container has been sealed and is ready for landfill, unless the container is already labelled in accordance with the Hazardous Products Regulations.

.4 In accordance with the Safety Code for the Construction Industry, the label must contain, in permanent and easily legible wording, the following indications:

.1 Asbestos-containing material

.2 Toxic by inhalation

.3 Keep container tightly closed

.4 Do not breathe in dust

.4 Waste container for the transportation of asbestos waste: the container must be designed for the type of debris to be transported (e.g. metal container) and be impenetrable to asbestos dust and fibres. It must be equipped with a hard roof and doors that can be secured with a padlock and be fitted with a “Class 9.1 — Asbestos” cabinet for the transportation of more than 500 kg of asbestos waste in accordance with the Transportation of Dangerous Goods Regulations.

.5 Airtight polyethylene sheets: unless otherwise specified, sheets at least 0.15 mm (6 mil) thick, of sufficient size so that there are as few seals as possible. Always use new materials.

.6 Tape: A glass-fibre-reinforced adhesive tape used for HVAC ducts that can seal polyethylene sheets to different surfaces, in both dry environments and environments that are moist with treated water.

.7 Danger signals: A yellow, orange or red rigid strip (such as a trestle) or flexible strip at least 70 mm wide and installed, depending on the configuration of the land or structure, at a height ranging from 0.7 m to 1.2 m.

.8 Garden sprayer or other low-pressure watering equipment. Do not use compressed air to spray water.

.9 Wetting agent: a solution of 50% polyxyethylene ester and 50% polyxyethylene ether or equivalent.

.10 Small tools and other materials such as seals, sponges, scrapers, box cutters, steel brushes, scouring pads, pliers, etc.

PARTIE 3 EXECUTION

3.1 SITE SETUP

.1 Before undertaking low-risk asbestos removal:

.1 Set the limits of the work area.

.2 Install a warning sign at the entrance to the work area: “Asbestos — Danger, do not breathe dust, Protective equipment mandatory, Authorized personnel only”.

.3 Establish measures to prevent access to unauthorized vehicles and persons (installation of barricades, danger signs, protective membranes, etc.).

.4 Place leak-proof membranes around the building to prevent soil contamination.

.5 Coordinate with the Ministry Official to shut off and lock down power sources.

.6 Remove any objects that cover cement panels, such as signs.

.7 Seal all building openings with waterproof polyethylene sheets and tape to prevent dust from entering the building.

.8 Provide appropriate equipment for carrying out overhead work and handling of asbestos waste containers, such as cement panels.

.2 Asbestos removal should not begin until:

.1 provisions for waste disposal have been made;

.2 arrangements have been made to preserve the security of the premises;

.3 all notices have been given and all other preparations made.

3.2 ASBESTOS REMOVAL

.1 Workers must wear the personal protective equipment required for the work at all times.

.2 Begin removal of cement panels at the top of the wall.

.3 Carefully proceed with the removal of cement panels containing asbestos to prevent the emission of dust.

.4 Moisten cement panelling before removing it using a garden sprayer or other low-pressure method.

.5 Remove cement panels one at a time by hand or using electrical tools. Power tools must be equipped with a source dust collector connected to a high-efficiency vacuum system (e.g. cutting, drilling, etc.) for low-risk work.

.6 Place the cement panels in a rigid container as they are removed, close it securely with a lid and label the container (refer to Section 2.1.3.4). Do not throw cement panels or drop them on the ground.

.7 Remove the windows to which the black sealant has been applied. At a minimum, pack them in a double sheet of polyethylene and label them (refer to Section 2.1.3.4).

.8 Place asbestos waste in the asbestos container at the location designated by the Ministry Official.

3.3 RECOVERY OF DEBRIS

.1 On a regular basis, during and at the end of the shift, remove all dust and debris of asbestos-containing materials or materials suspected of being contaminated by asbestos.

.2 Collect smaller material and dust debris, place on the ground after wetting it, package it, label it and place it in the asbestos waste containers.

.3 Place debris from asbestos-containing materials that may tear polyethylene bags in rigid containers pre-labelled for asbestos with a waterproof cloth inside.

.4 Manage disposable protective clothing, worn-out filters in vacuum systems and respiratory protection devices such as asbestos waste.

.5 Clean the outside of each waste bag with wet cloths or a HEPA vacuum cleaner and then place each bag in a second uncontaminated waste bag or rigid container immediately before removing it from the asbestos removal area.

.6 Seal waste bags and containers securely.

.7 Remove waste as you work and place it in the designated asbestos containers.

.8 Take measures to limit dust dispersion by storing waste in covered and closed containers, as long as they are stored near the building.

.9 Keep the storage area clean at all times.

.10 Clean the circulation areas used and the loading area after each loading of waste.

.11 Complete an asbestos waste transportation document for each load leaving the site to a site authorized by the Ministère de l'Environnement et de la lutte contre les changements climatiques (Quebec Ministry of the Environment and the Fight against Climate Change — MELCC) and provide a copy to the Ministry Official.

3.4 CLEAN-UP AFTER CONSTRUCTION

.1 Use a high-efficiency vacuum cleaner to clean all used polyethylene sheets, if necessary.

.2 If polyethylene sheets are to be discarded, moisten and fold them first so all removed dust is contained, then place them in the asbestos waste containers.

.3 Wash the respiratory protection device with clean, soapy water and rinse it with clean water. Allow it to dry completely and store it in a clean place. Discard filters such as asbestos waste and disposable overgarments.

END OF SECTION

PARTIE 1 GENERAL

1.1 SUMMARY

.1 Section Contents

.1 This section covers low intensity (LI) obstacle lighting equipment, which serves to better indicate to pilots the presence of high structures.

1.2 REFERENCES

.1 Transport Canada

.1 Canadian Aviation Regulation Standard 621 (CAR 621), Obstruction Marking and Lighting

1.3 ACTION AND INFROMATIONAL SUBMITTALS

.1 Data Sheets

.1 Submit the required technical data sheets as well as the manufacturer's documentation concerning the equipment relating to obstruction marking and lighting. Data sheets must indicate product characteristics, performance criteria, dimensions, limits and finish

.2 Test reports: submit test reports issued by an independent test laboratory certifying that the products, materials and equipment meet the requirements with regard to physical characteristics and performance criteria

.1 The tests must be carried out in accordance with the requirements of CAR 621

.3 Manufacturer's instructions: Submit installation instructions provided by manufacturer, including any indication of specific handling, installation and cleaning methods

1.4 CLOSEOUT SUBMITTALS

.1 Provide the required operation and maintenance sheets and attach them to the prescribed manual.

PARTIE 2 PRODUCTS

2.1 RED OBSTRUCTION LIGHTS

.1 Products to RAC 621, type CL-810.

.2 Twin LED lights, fitted with two (2) “aviation” red globes and two (2) 8.6 W lamps (120-240 V AC)

.3 Single LED lights, fitted with one (1) “aviation” red colored globe, one (1) 8.6 W (120-240 V AC) lamp

2.2 SUPPORTS

.1 Obstacle lights must be installed on an appropriate support at the locations indicated in the drawings

PARTIE 3 EXECUTION

3.1 EXAMINATION

.1 Verification of conditions: before installing the obstacle lights, ensure that the condition of the supports previously installed under the terms of other sections or contracts allows the work to be carried out in accordance with the manufacturer's instructions

.2 Immediately inform Engineer of any unacceptable condition found

3.2 INSTALLATION

.1 On the roof, install TECK90 type power cables, three (3) 12-gauge conductors, along the routes indicated

.2 Install the obstruction lights at the indicated locations on drawings.

.1 Mount lights on suitable aluminum supports.

.2 Connect to power cable.

.3 Adjust bulb height using the spacers for the socket support clamps, as indicated.

.4 Place red globes on the ficture collars and fasten them securely.

.5 Align the lights correctly.

END OF SECTION

PARTIE 1 GENERAL

1.1 WORK COVERED BY THIS SECTION

.1 Sections related to this section:

.1 Section 02 41 16.09 — Structure Demolition.

.2 Section 01 35 43 — Environmental Procedures.

.3 Section 01 74 19 — Construction Waste Management and Disposal.

Any other section of the quote requiring excavation and backfilling of aggregate or other material.

1.2 SCOPE OF WORK

.1 Before each period of operation described in Section 01 11 01 — General Requirements, all trenches must be backfilled, levelled and compacted.

No levelling or piling of materials will be tolerated near the runway during the period of operation.

1.3 MEASUREMENT FOR PAYMENT PURPOSES

.1 Costs for regular excavations are included in the unit or flat price of the items on the tender schedule.

.2 The costs for backfilling with other backfill materials are included in the unit or flat price of the items on the tender schedule.

1.4 REFERENCES

.1 Bureau de normalisation du Québec (Quebec Standardization Board)

.1 Standard NQ 2560-114 — Civil Engineering Work — Aggregates.

1.5 DEFINITIONS

.1 Excavation classes: two (2) excavation classes are recognized: regular excavation and rock excavation.

.1 Rock excavation: solid mass greater than 1.00 m^3 in volume that cannot be removed by means of a mechanical excavator equipped with a 0.95–1.15 m^3 bucket. Frozen materials are not classified as rock excavations.

.2 Regular excavation: all excavation materials of any kind, other than rock excavations.

.2 Unclassified excavations: deposits of any kind found during work.

.3 Topsoil

.1 Any material that is suitable for plant growth and can be used as a side soil for landscaping or seeding.

.2 Any material reasonably free of subsoil materials, lumps of clay, brush, weeds and other debris, and free of rocks, stumps, roots and other harmful materials of more than 25 mm.

.4 Scrap materials: surplus materials or excavation materials that are not usable for the purposes of this work.

.5 Borrow materials: materials from areas outside the levelling area necessary for the development of embankments or other parts of the work.

.6 Recycled backfill materials: materials considered inert that come from different sources and are modified to meet the needs of the backfill areas.

.7 Improper materials

.1 Compressible, chemically unstable and low-strength materials.

.2 Frost-sensitive materials

.1 Fine grain soil with a plasticity index of less than 10 according to ASTM D4318 and a particle size within the prescribed limits according to ASTM C136 and ASTM D422. The sieve designation must comply with CAN/CGSB-8.1.

.2 Table

Sieve Designation	% Passing
2.00 mm	100
0.10 mm	45–100
0.02 mm	10–80
0.005 mm	0–45

.3 Coarse grain soil whereby the percentage that passes through a 0.075 mm sieve is greater than 20% by mass.

1.6 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION PURPOSES

.1 Submit the erosion and sediment control plan in accordance with Section 01 35 43 — Environmental Procedures

.2 Submit the waste and scrap disposal plan in accordance with Section 01 74 19 — Construction Waste Management and Disposal

1.7 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

.1 Dispose of waste according to the construction waste management and disposal plan in accordance with Section 01 74 19 — Construction Waste Management and Disposal

1.8 EXISTING CONDITIONS

.1 Utility lines and buried electric cables

.1 Confirm the location of underground utility lines or buried cables by carefully conducting test excavations.

.2 Maintain and protect water, sewer, gas, electricity and telephone lines and any other lines or structures marked as indicated against damage.

.3 Note the location of underground lines that are maintained, rerouted, or abandoned.

.4 Confirm the location of the recently completed excavations near the work area.

PARTIE 2 PRODUCTS

2.1 MATERIALS/EQUIPMENT

.1 Backfill materials

.1 Compactable and contamination-free Class B backfill. The Contractor shall provide evidence that Class B backfill imported on site is free from contamination through analyses. In the event that the Contractor is unable to provide such evidence, it shall perform the analyses at its expense to demonstrate that the imported soils are compliant and free of contamination. The Ministry Official reserves the right to collect samples of imported soils to cross-check the results submitted by the Contractor.

PARTIE 3 EXECUTION

3.1 MEANS OF EROSION AND SEDIMENT CONTROL

.1 Establish temporary means to combat erosion and sediment deposits to prevent soil loss that may result from storm water runoff or wind erosion, and drive this soil into the environment.

These means must conform to the site-specific erosion and sediment control plan and be prepared in accordance with Section 01 35 43 — Environmental Procedures.

.2 Inspect, maintain and repair control facilities as necessary until permanent vegetation has been established.

.3 Remove control facilities at the appropriate time and restore and stabilize the areas disturbed during construction.

3.2 PREPARATORY WORK

.1 Remove any obstacles, snow and ice from surfaces in the excavation area within the limits indicated.

.2 Prepare the temporary storage area for the piling of contaminated materials as defined in Section 01 35 43 — Environmental Procedures.

3.3 PREPARATION/PROTECTION

.1 Keep excavations clean and free of standing water and friable soil.

.2 Protect natural and artificial items that must remain in place.

3.4 DRYING OF EXCAVATION AND PREVENTION OF LIFTING

.1 Keep excavations dry for the duration of the work.

.2 Submit details of the proposed excavation drying methods to the Ministry Official for review.

.3 If there is a risk of boiling or lifting, avoid excavating under the water table.

.1 To avoid the lifting of pipes or the bottom of the excavation, reduce the level of the groundwater.

.4 Protect open-pit excavations from flooding and damage that may be caused by runoff.

.5 Dispose of water in accordance with Section 01 35 43 — Environmental Procedures in a manner that does not pose a risk to the environment.

.1 Develop and maintain drainage ditches and other temporary means of diversion outside the limits of the excavation.

.6 Provide and install flocculation basins, settling basins or other water treatment facilities to remove suspended solids or other undesirable materials from the water before discharging it into a storm sewer, waterway or drainage basin.

3.5 EXCAVATION

.1 Unless authorized in writing by the Ministry Official, it is prohibited to dig more than 30 metres of trench prior to the installation of the components to be buried, and the length of an unfilled trench shall not exceed 10 metres at the end of a working day.

.2 The excavations and materials deposited must be deposited at a sufficient distance from the trench, as indicated by the Ministry Official.

.3 Limit work performed with construction equipment in the immediate vicinity of unfilled trenches.

.4 Remove any improper or excess material from the site.

.5 Remove any improper or excess material from the site or place it in the temporary storage area as requested by the Environmental Supervisor.

.6 The bottom of the excavation must be level and consist of undisturbed soil free from organic matter and loose or non-resistant substances.

.7 Inform the Ministry Official when the intended level of the bottom of the excavation is reached.

.8 Completed excavations must be approved by the Ministry Official and the Environmental Supervisor.

.9 Remove any improper material from the bottom of the trenches, including materials located below the required level, over the extent and to the depth determined by the Ministry Official and the Environmental Supervisor.

.10 When the bottom of the excavation is reached and accepted by the Environmental Supervisor, the Contractor shall install a geomembrane before backfilling the excavation with uncontaminated Class B backfill. The geomembrane must have the following characteristics: minimum thickness of 0.75 mm (30 mil), the geomembrane joints must be welded and the geomembrane must be petroleum hydrocarbon-resistant.

.11 The concrete in the slab that has heating oil stains must be disposed of at authorized sites that comply with the regulations in force and Section 01 35 43 — Environmental Procedures.

3.6 BACKFILL AND COMPACTING MATERIALS

.1 Use compacting equipment approved by the Ministry Official.

.2 Do not backfill before obtaining the following authorizations:

.1 Approval of the Ministry Official for excavations.

.2 Inspection, density testing, positioning of materials and equipment.

.3 Do not backfill with ice, snow, or frozen ground debris.

3.7 BACKFILLING

.1 Use backfilling and compacting equipment approved by the Ministry Official.

.2 Areas to be backfilled must be free of debris, snow, ice, water and frozen soil.

.3 It is prohibited to use backfill materials that are frozen or contain snow, ice or debris.

.4 Spread the backfill materials in uniform layers not exceeding 300 mm in thickness after compaction to the levels indicated. Compact each layer before spreading the next layer.

3.8 RESTORATION OF SITE

.1 Once the work has been completed, remove scrap materials and debris in accordance with Section 01 74 19 — Construction Waste Management and Disposal, adjust slopes and correct any defects as directed by the Ministry Official.

.2 Replace the topsoil as directed by the Ministry Official.

.3 Clean and restore areas affected by the work on a daily basis, as directed by the Ministry Official.

.4 Protect newly levelled areas from erosion, prevent traffic on them and keep them free of waste or debris.

END OF SECTION

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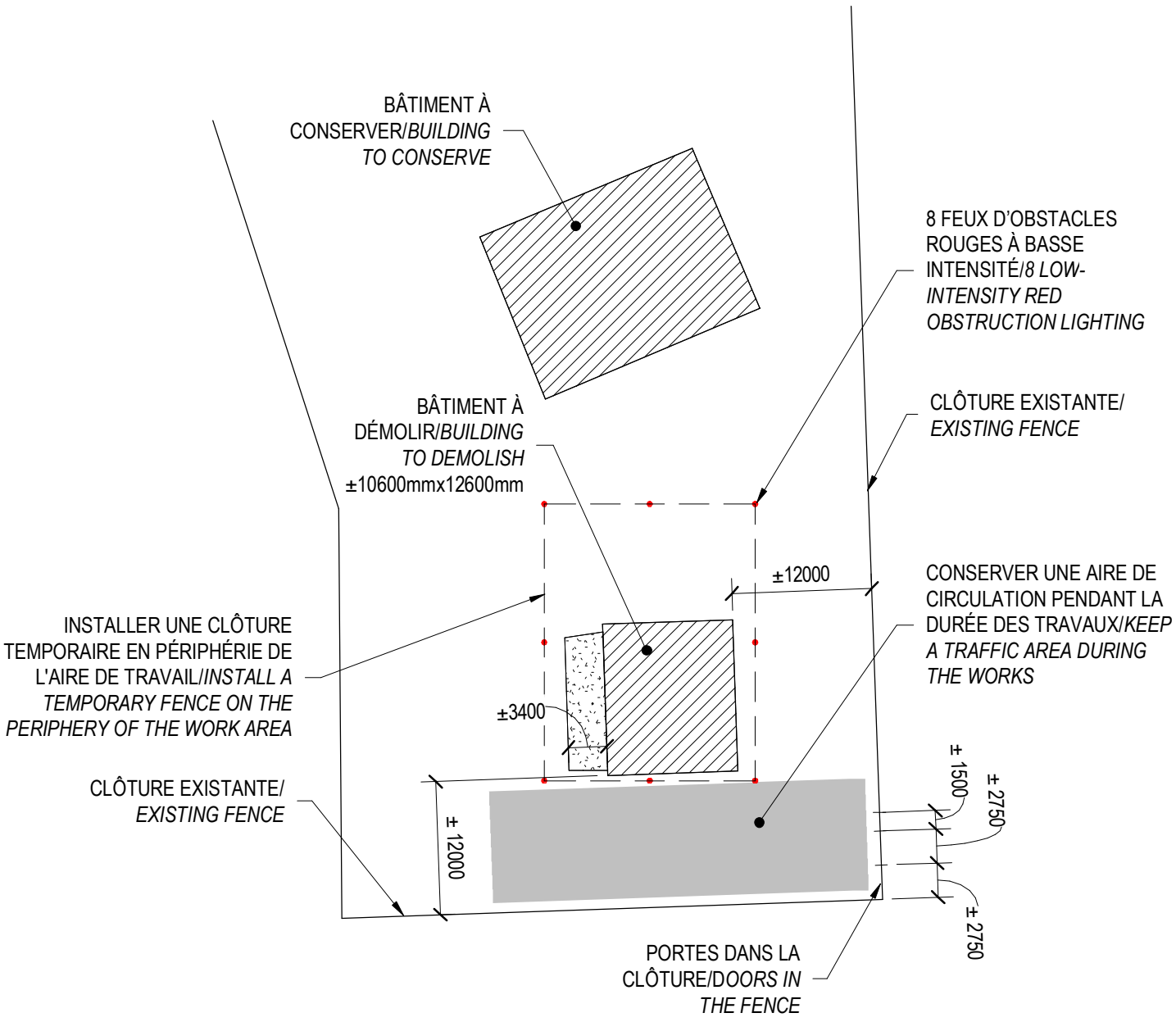
Appendix A

Sketch S01 – Plan View – Demolition



VUE EN PLAN - DÉMOLITION/ PLAN VIEW - DEMOLITION

1 : 500

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DESSINÉ PAR/ *DRAWN BY*	S. DION
DATE	2020/11/25
ÉCHELLE/ *SCALE*	1 : 500

PROJET/*PROJECT* **DÉMOLITION D'UN HANGAR À SEPT-ÎLES/ DEMOLITION OF AN HANGAR IN SEPT-ÎLES**

TITRE/*TITLE*	NO. DE PROJET/ *PROJECT NO.*	NO. DE FEUILLE/ SHEET NO.
VUE EN PLAN - DÉMOLITION/ PLAN VIEW - DEMOLITION	677671	**S01**

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Appendix B

Environmental Characterization of Soil

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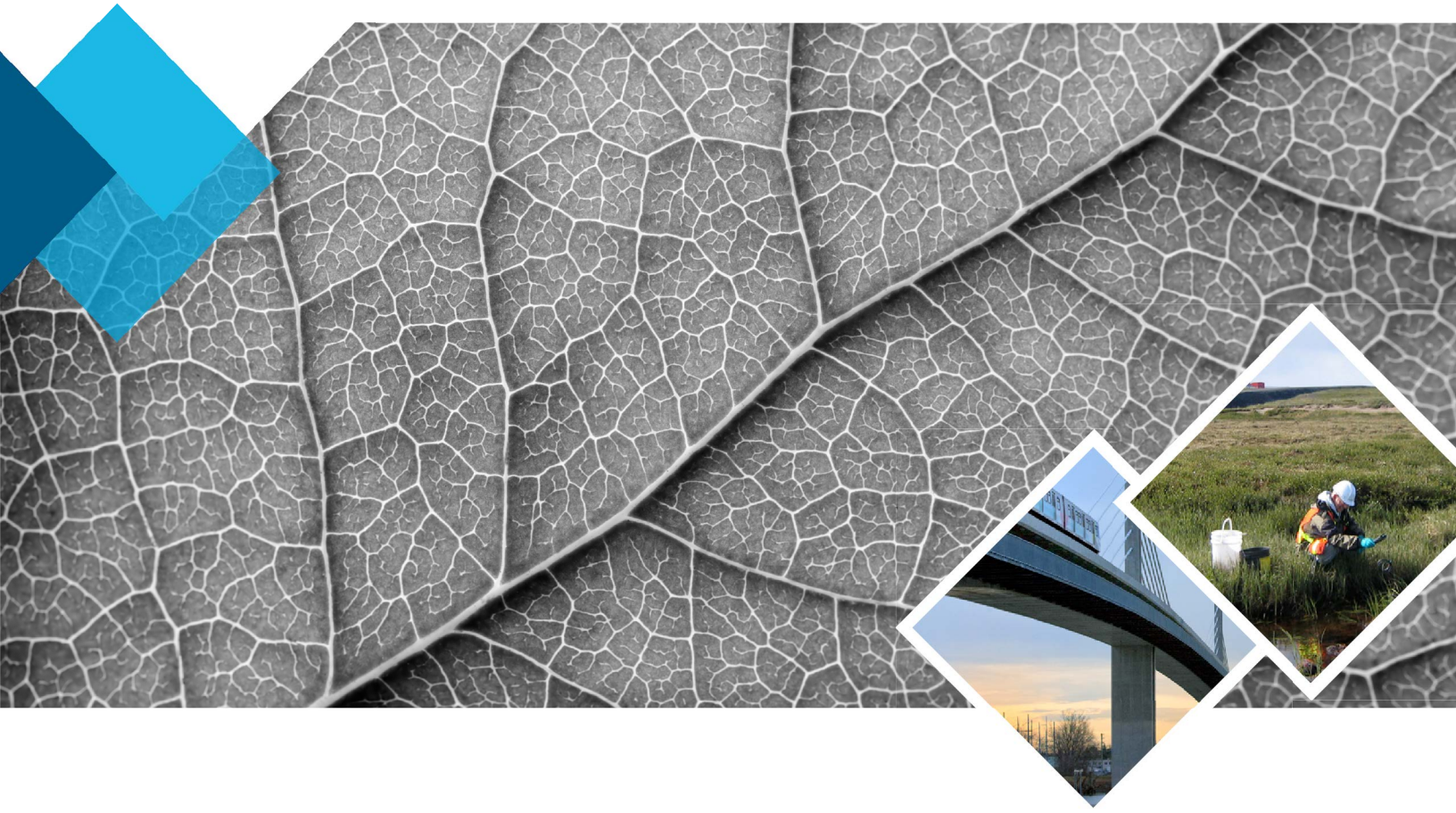
Environmental Characterization of Soils

Hangar Demolition
Sept-Îles Airport
1000, boulevard Laure, Sept-Îles, Quebec

Public Services and Procurement Canada
Public Works and Government Services Canada



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Environmental Characterization of Soils

Hangar Demolition
Sept-Îles Airport
1000, boulevard Laure, Sept-Îles, Quebec

Public Services and Procurement Canada
Public Works and Government Services Canada

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December 2020

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Management of Excavated Soils Grille from Intervention Guide

1 Introduction

The professional services of SNC-Lavalin Inc. (SNC-Lavalin) were retained by Public Services and Procurement Canada (PSPC), on behalf of Public Works and Government Services Canada (PWGSC), to carry out an environmental characterization of the soils prior to the demolition work of a hangar at Sept-Îles airport in Quebec.

This mandate was executed in conjunction with the preparation of plans and specifications carried out by SNC-Lavalin within the framework of the same project.

The objective of this mandate was to assess, on an exploratory basis, the environmental quality of the soil that will be excavated during the project, in order to guide its management.

As agreed with PSPC, this mandate did not provide for the completion of a Phase I environmental characterization beforehand. Thus, the work program was drawn up based on information specific to the project, general knowledge relating to the sources of contamination associated with the heating methods of buildings as well as based on observations made during fieldwork.

This report contains the description of the work carried out and presents the results obtained. It also contains a section where the results are commented and where recommendations are formulated concerning the environmental management of soils.

The scope of the report is presented in appendix 1.

2 Brief Description of the Site under Study and of the Project

2.1 Site Location and Use

Sept-Îles airport is located at 1000, boulevard Laure in the territory of the city of Sept-Îles. The demolition project concerns a currently unused hangar which covers an approximate area of 140 m². It is located near the southeastern edge of the airport land, on Aviation Générale Est Street. The approximate geographic coordinates of the centre of the hangar are: 50.220353° N, 66.251162° W.

The location of the hangar is shown on drawing 1 included in appendix 2.

2.2 Demolition Project

PSPC plans to demolish the unused hangar. This project includes, among others, the following works:

- Dismantling of the equipment present inside the building;
- Demolition of the building, including its foundations;
- Management of excavated contaminated soil, if applicable;
- Restauration of the site to its original state.

Extraction of the building's piles will require excavation of the soil to a depth of approximately 2.0 m. Thus, in order to plan for the management of the soils that will be excavated, they required characterization.

3 Recognition Method

3.1 Sampling Strategy

The investigation program required the execution of 4 test pits outside the hangar and 2 manual boreholes inside. The surveys were implemented jointly by SNC-Lavalin and a representative from the Sept-Îles airport to meet the objectives of the characterization study. These soundings were used to determine, on an exploratory basis, the environmental quality of the soils likely to be excavated during the demolition work to come. As part of the environmental characterization, soil samples were taken in soundings continuously to a maximum depth of 2.7 m.

The location of the test pits and manual boreholes is shown in drawing 1 included in appendix 2.

3.2 Identification of Underground Piping

Prior to the survey work, the location of the underground piping on the study site was carried out using a request from Info-excavation services, the municipality and airport staff. The main purpose of the tracking was to avoid damaging pipes or other underground structures and to protect workers.

3.3 Field Work

Fieldwork for environmental sampling from the test pits and manual boreholes was completed on October 8, 2020. No oil spots were observed on the ground surface outside the hangar. However, inside the hangar, stains potentially caused by oil leaks were observed on the concrete slab of the floor. Observations made during this work confirmed that the building may have already been heated using an oil-fired heating system.

The soil sampling was carried out according to the recommendations of the *Guide d'échantillonnage à des fins d'analyses environnementales* (Sampling Guide for Environmental Analysis Purposes of the Quebec Ministry of the Environment and the Fight against Climate Change) (MELCC).

3.3.1 Execution of Test Pits

The 4 test pits (PU-01 to PU-04) were carried out using a hydraulic excavator supplied by the local company Location Tempête. The test pits were dug down to depths of between 2.6 m and 2.7 m. It should be noted that due to the sandy composition of the soils, the walls of the exploration wells were very unstable from a depth of 2.0 m. Rock was not encountered in the test pits.

Following the sampling, the test pits were backfilled with the excavated material replaced in the reverse order of their excavation and in successive layers. The material was compacted progressively as it was returned to the excavations, by using the excavator's bucket.

3.3.2 Execution of Manual Boreholes

The 2 manual boreholes (F-05 and F-06) were carried out using a split spoon driven down to respective depths of 0.81 m and 2.13 m below the surface of the slab of concrete. Representative samples of the soil layers crossed were taken in each of the boreholes.

3.3.3 Positioning

All the soundings were positioned by measuring from the hangar structure. No levelling survey was carried out as part of the mandate.

3.4 Laboratory Work

A selection of soil samples was submitted to the analytical program presented in Table 1.

Table 1 Analytic Program

Parameter	Number of Samples Analyzed	
	Test pit	Manual Borehole
Petroleum Hydrocarbons (HP C_{10}-C_{50})	5 and 1 field duplicate	1
Total Extractable Metals (Ag, As, Ba, Cd, Co, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Se, Zn)	2	0
Polycyclic Aromatic Hydrocarbons (PAH)	1	0
Monocyclic Aromatic Hydrocarbons (MAH)	1	0

In the absence of data concerning the environmental history of the site under study, the choice of analytical parameters aimed at detecting the main parameter associated with heating oil (PH C_{10}-C_{50}) and the parameters generally required by the sites authorized to receive contaminated soil (metals, PAH, MAH).

The analytical methods used are identified on the certificates of analysis included in appendix 3.

3.5 Quality Assurance and Control

3.5.1 Equipment Cleaning and Sample Storage

The equipment used for soil sampling (manual auger, split spoon, trowel and stainless-steel bowl, etc.) were cleaned, before each use, with soapy water and rinsed successively with purified water, acetone, hexane, and again with acetone and purified water.

The samples were kept cool in coolers until they were picked up by the analytical chemistry laboratory.

3.5.2 Control Sample

A soil sample was taken in duplicate and submitted to the analytical program to verify the accuracy of the results. Table 2 shows the sample taken in duplicate from the field and the analytical program applied to them.

Table 2 Sample Taken in Duplicate and Retained for Analysis

Sample N°	Duplicate N°	Analyse
PU-3 / PM-5	PU-3 / PM-5-DUP-4	HP C_{10}-C_{50}

3.5.3 Analytical Chemistry Laboratory

The chemical analyses were carried out by Agat laboratory in Quebec. Agat laboratory is accredited by the MELCC for the analytical program selected.

The chemical analyses were submitted to the laboratory's internal quality control program. This program includes, among other things, method blanks, duplicates, certified controls and standard addition methods.

4 Results

4.1 Nature and Properties of Soils in Test Pits

The nature of the materials forming the different stratigraphic layers was determined visually during the work of the test pits.

4.1.1 Backfill

Backfill soils were encountered in the PU-01 and PU-02 test pits from the surface to depths between 0.8 and 2.1 m. The backfill soils encountered are mainly composed of sand and gravel with a proportion of organic matter of around 15% on the surface.

No backfill was identified at the location of the PU-03 and PU-04 test pits.

4.1.2 Natural Soil

Natural soils have been intercepted in all the test pits. In the PU-03 and PU-04 test pits, they were encountered from the surface while in PU-01 and PU-02, they were encountered at respective depths of 0.8 m and 2.1 m. It should be noted that the underground water inlet pipe for the hangar was observed at a depth of 2.1 m at the location of the PU-02 test pit.

4.2 Nature and Properties of Soils in Manual Boreholes

The nature of the materials forming the different stratigraphic layers was determined visually during manual borehole work.

Under the floor slab of the hangar, the soils encountered are composed of brown and dry sand. It should be noted that at the location of the F-05 manual borehole, an empty space of about 0.2 m was observed under the slab.

4.3 Organoleptic Contamination Indices

Medium to strong hydrocarbon odours were observed at the site of the PU-03 test pits from a depth of 1.8 m to the bottom of this well at a depth of 2.7 m.

Also, slight odours of hydrocarbons were perceived at the site of the F-05 manual borehole from 1.47 m deep to the bottom of this hole at 2.13 m deep.

Finally, stains potentially caused by oil leaks were observed on the concrete slab of the floor inside the hangar.

No other organoleptic contamination clue was noted during the performance of the characterization work.

4.4 Environmental Situation

4.4.1 Interpretation Criteria

The analysis results were compared with generic criteria A, B and C of the *Guide d'intervention relatif à la Protection des sols et réhabilitation des terrains contaminés* (Intervention Guide for Soil Protection and Contaminated Land Rehabilitation) of the Ministry of the Environment and the Fight against climate change (MELCC), as well as the limit values in appendix I of *Règlement sur l'enfouissement des sols contaminés* (RESC) (Regulation respecting the burial of contaminated soils).

Given the non-sensitive institutional use of the site, i.e., airport facilities, the Intervention Guide indicates that the criterion from which soil rehabilitation could be required is criterion C.

In addition, the environmental management of excavated contaminated soils is governed, in particular by the Intervention Guide, as well as by the *Règlement sur le stockage et les centres de transfert de sols contaminés* (RSCTSC) (Regulation respecting the storage and transfer of contaminated soils), the *Règlement sur l'enfouissement des sols contaminés* (RESC) (Regulation respecting the burial of soils. Contamination) and the *Règlement sur l'enfouissement et l'incinération de matières résiduelles* (REIMR) (Regulation respecting the landfill and incineration of residual materials).

Finally, in the context of this study, the values of criterion A used for the interpretation of metal concentrations correspond to those suggested by the Guide for the geological province of Grenville.

4.4.2 Analysis Results

The results of the chemical analyzes carried out on the soil samples are presented on the analysis certificates included in appendix 3. Their interpretation is presented in Table 3 below.

Table 3 Interpretation of Analysis Results

Sample	Depth(m)	Parameter			
		PAH	Metals	PH C_{10}-C_{50}	MAH
PU-1 /PM-5	1,6-2,2	-	-	<A	-
PU-2 /PM-5	1,6-2,1	-	<A	<A	-
PU-3 /PM-4	1,8-2,2	<A	-	*A-B*	<A
PU-3 /PM-5	2,2-2,6	-	-	B-C	-
PU-3 /PM-5-DUP-4	2,2-2,6	-	-	**C-RESC**	-
PU-4 /PM-4	1,8-2,4	-	-	<A	-
F5 / CF-3	1,5-2,1	-	-	B-C	-

-	No Analysis
0,2	Concentration greater than criterion A but less than or equal to criterion B
20	Concentration greater than criterion B but less than or equal to criterion C
300	Concentration greater than criterion C but less than the limit value of appendix I of RESC
9000	Concentration greater than or equal to the limit value of Annex I of RESC

The main elements that can be drawn from the examination of these results are as follows:

PH C_{10}-C_{50}

- The concentrations obtained in the samples from test pits PU-01, PU-02 and PU-04 are lower than criterion A;
- A concentration in the range A-B was obtained in the PU-03 / PM-4 sample taken between 1.8 and 2.2 m. depth;
- Concentrations in the B-C range were obtained in samples PU-03 / PM-5 and F-5 / CF-3 respectively taken between 2.2 and 2.6 m. deep and 1.5 and 2.1 m. depth;
- A concentration within the C-RESC range was obtained in the identified duplicate field sample PU-03 / PM-5-DUP-4 collected between 2.2 and 2.6 m depth.

PAH, Metals and MAH

- ›All the results obtained for the quantification of PAHs, metals and MAHs revealed concentrations below criterion A.

4.4.3 Interpretation

In summary, two soundings revealed the presence of contaminated soils beyond criterion A, namely the PU-03 test pits and the F-05 manual borehole. In addition, at the location of the PU-05 test pit, the contaminated soils identified are considered non-compliant for a property whose use is non-sensitive institutional, such as the site under study. The suspected source of this contamination is the hangar's old oil heating system.

Thus, the characterization work carried out made it possible to identify contaminated soils beyond criterion C applicable to the land under study. However, the work carried out did not make it possible to delimit the extent of this contamination, especially in depth. In fact, due to the instability of the excavation walls and the presence of structures in the vicinity (notably the hangar), the test pits reached a maximum depth of 2.7 m. beneath the surface.

4.5 Quality Control

4.5.1 Analytical Chemistry Laboratory

The results of the Agat laboratory's internal quality control program are presented on the certificates of analysis included in appendix 3. The results of these controls are reported in accordance with Agat's internal criteria, which are approved by the MELCC. In addition, the reported detection limits are less than or equal to criterion A for all the parameters analysed.

4.5.2 Control Samples

To assess the replicability of the results, the relative differences between the concentration of the field duplicate and that of its corresponding sample were examined. The examination essentially consisted in determining the relative deviation when at least one of the two (2) concentrations was greater than 10 times the reported detection limit and in verifying whether the deviation obtained is greater than the value of 30% suggested by the MELCC.

Examination of the results allows us to calculate a relative difference of 63% (2700 mg/kg versus 5170 mg/kg). The relative difference thus calculated is greater than the limit of 30% suggested by the MELCC. Since the sample and its duplicate were taken from natural soil, the relatively large difference between the concentrations obtained in the original sample and its duplicate cannot be explained by the presence of heterogeneous material. This discrepancy could be explained by a "nugget effect" of the distribution of contamination in the soil.

For the purpose of interpreting the results, the highest concentration was used. Thus, the concentration of HP C_{10}-C_{50} obtained in the test pits PU-03 between 2.2 and 2.6 m. depth is considered in the C-RESC contamination range of the generic criteria of the MELCC Intervention Guide.

5 Conclusions and Recommendations

The professional services of SNC-Lavalin Inc. (SNC-Lavalin) were retained by Public Services and Procurement Canada (PSPC) to carry out an environmental characterization of the soils prior to the demolition of a hangar at the Sept-Îles airport in Quebec. This mandate was carried out in conjunction with the preparation of plans and specifications carried out by SNC-Lavalin within the framework of the same project.

Fieldwork was done for the execution of 4 test pits outside the hangar to be demolished and 2 manual boreholes inside. Among the samples taken, a selection of samples was subjected to chemical analyses. The contaminants identified in the soils during the mandate are PH C_{10}-C_{50} petroleum hydrocarbons and the suspected source of this contamination is the former oil heating system of the hangar.

In summary, two soundings revealed the presence of contaminated soils beyond criterion A, namely the PU-03 test pits and the F-05 manual borehole. In addition, at the location of the PU-05 test pits the contaminated soils identified are considered non-compliant for a property whose use is non-sensitive institutional, such as the site under study.

Thus, the characterization work carried out made it possible to identify contaminated soils beyond criterion C applicable to the land under study. It is therefore recommended to proceed with the rehabilitation of these soils to make them conform to the use of the site under environmental monitoring by a specialized firm. In addition, a complementary characterization of the soil would make it possible to refine the results obtained and thus allow the creation of a management plan for the excavated soil (contamination polygon and estimate of the volumes of contaminated soil).

Furthermore, the environmental management of all the cut material that will be generated during the project must comply with the various regulations stemming from the *Loi sur la qualité de l'Environnement* (LQE) (Environment Quality Act), in particular the *Règlement sur le stockage et les centres de transfert de sols contaminés* (RSCTSC) (Regulation respecting storage and centres of contaminated soil transfer), the *Règlement sur l'enfouissement des sols contaminés* (RESC) (Regulation respecting the landfilling of contaminated soils) and the *Règlement sur l'enfouissement et l'incinération de matières résiduelles* (REIMR) (Regulation respecting the landfilling and incineration of residual materials). The management options are summarized in the Excavated Soil Management Grid of the Intervention Guide, which is reproduced in appendix 4.

Lastly, if backfill material were to be imported to the site as part of the planned work, its environmental quality should be verified.

Appendix 1

Scope of Report

SCOPE OF REPORT

1. Use of report

a. Use of report

This report has been prepared, and the work mentioned herein was carried out by SNC-Lavalin GEM Québec Inc. (SNC-Lavalin) exclusively for the client (the Client), to whom the report is addressed, and who took part in developing the scope of work and understands the limitations. The methodology, findings, recommendations and results cited in this report are based solely on the scope of work and are subject to the requirements of time and budget, as described in the offer of services and/or the contract under which this report was issued. Use of this report or any decision based on its content by third parties is the sole responsibility of the third parties. SNC-Lavalin is not responsible for any damage incurred by third parties due to the use of this report or of any decision based on its content. The findings, recommendations and results cited in this report (i) have been prepared in accordance with the skill level normally demonstrated by professionals operating in similar conditions in the sector, and (ii) are determined according to the best judgment of SNC-Lavalin, taking into account the information available at the time the report was prepared. The professional services provided to the Client and the findings, recommendations and results cited in this report are not subject to any guarantee, express or implied. The findings and results cited in this report are only valid on the date of the report and may be based in part on information provided by third parties. This report may require modifications in case of inaccurate information, discovery of new information or changes in project parameters. The results of this study are in no way a guarantee that the site in the study is free of contamination. This report must be considered as a whole and its parts or sections must not be taken out of context. If discrepancies were to appear between the draft and the final version of this report, the final version shall prevail. Nothing in this report is mentioned with the intention to provide or constitute legal advice. The content of this report is confidential and proprietary. It is prohibited for any person other than the Client to reproduce or distribute this report, to use or take a decision based on its content, in whole or in part, without the express written permission of the Client and SNC-Lavalin.

b. Modifications to project

The evidence, interpretations and recommendations contained in this report relate to the specific project as described in the report and do not apply to any other project or any other site. If the project is modified from a perspective of design, dimensioning, location or level, SNC-Lavalin must be consulted to confirm that the recommendations already given remain valid and enforceable.

c. Number of soundings

The recommendations in this report are intended only as a guide for the design engineer. The number of soundings to determine all subsurface conditions that may affect construction (costs, techniques, equipment, schedule) should normally be greater than that for the purpose of design. The number of sample sites and chemical analyzes as well as the sampling frequency and choice of parameters can influence the nature and extent of corrective actions as well as treatment or disposal technology and cost. Contractors bidding or subcontracting the work should rely on their own research and their own interpretations of the surveys' factual results to assess how underground conditions can affect their work and the cost of work.

d. Interpretation of data, comments and recommendations

Unless otherwise noted, data and results interpretation, comments and recommendations contained in this report are based, to the best of our knowledge, on environmental policies, criteria and regulations in force at the location of the project and on the production date of the report. If these policies, criteria and regulations are subject to change after submission of the report, SNC-Lavalin must be consulted to review the recommendations in the light of these changes. When no policy, criteria or regulation is available to allow for the interpretation of data and analytical results, comments or recommendations expressed by SNC-Lavalin are based on the best knowledge of the rules accepted in professional practice. The analyzes, comments and recommendations contained in this report are based on data and observations collected on the site, which come from sample work on the site. It is understood that only the data collected directly at the survey sites, sample sites and on the sample date are accurate and that any interpolation or extrapolation of these results to all or part of the site carries the risk of errors, which may themselves influence the nature and extent of the actions required on the site.

2. Sounding reports and interpretation of subsurface conditions

a. Soil and rock descriptions

The soil and rock descriptions given in this report are from classification and identification methods commonly accepted and used in the practice of geotechnical engineering. The classification and identification of soil and rock involves judgment. SNC-Lavalin does not guarantee that the descriptions will be identical in all respects to those made by another geotechnician possessing the same knowledge of geotechnical rules, but ensures accuracy only to what is commonly used in geotechnical practice.

b. Condition of soil and rock at sounding sites

The sounding reports only provide subsurface conditions and only at sounding sites. The boundaries between different layers on sounding reports are often approximate, rather corresponding to the transition zones and therefore subject to interpretation. The precision of subsurface conditions depends on the sounding method, frequency and method of sampling and consistency of the terrain encountered. The spacing between surveys, the sampling frequency and the type of sounding also reflect budgetary considerations and timelines that are outside the control of SNC-Lavalin.

c. Condition of soil and rock between sounding sites

The soil and rock formations are variable over a considerably large area. Subsurface conditions between sounding sites are interpolated and may vary significantly from the conditions encountered at sounding sites. SNC-Lavalin can guarantee the results at the site where sounding are conducted. Any interpretation of the conditions presented between sounding sites carries risks. These interpretations can lead to the discovery of conditions that are different from those that were expected. SNC-Lavalin cannot be held responsible for the discovery of different soil and rock conditions from those described elsewhere than at the site where soundings are conducted.

d. Groundwater levels

The groundwater levels provided in this report only correspond to those observed at the site and on the date indicated in the report and depends on the type of piezometric installation used. These conditions may vary based on the season or due to construction work on the site or on adjacent sites. These variations are beyond the control of SNC-Lavalin.

3. Contamination levels

The contamination levels described in this report (if within the scope) correspond to those detected at the site and on the date indicated in the report. These levels can vary based on the season or due to activities on the study site or on adjacent sites. These variations are beyond our control. Contamination levels are determined from the results of chemical analyzes of a limited number of soil, surface water or groundwater samples. The nature and degree of contamination between sample site may vary greatly. The chemical composition of groundwater at each sample site is likely to change due to groundwater flow, surface recharge conditions, stress of the formation investigated (i.e. pump or injection wells near the site) and natural seasonal variability. The accuracy of groundwater contamination levels depends on the frequency and the number of analyzes. The list of parameters analyzed is based on our best knowledge of the history of the site and the contaminants likely to be found on the site and is also a reflection of budgetary considerations and timelines. The fact that a parameter has not been analyzed does not exclude its presence at a concentration above the background noise or the detection limit of this parameter.

4. Study and work monitoring

a. Final phase verification

All design and construction details are not known at the time of issue of the report. It is therefore recommended that SNC-Lavalin's services be retained to provide light on the possible consequences of construction on the final work.

b. Inspection during execution

It is recommended that SNC-Lavalin's services be retained during construction to verify and confirm that groundwater conditions throughout the site do not differ from those given in the report and that the construction work will not have an adverse effect on the conditions of the site.

5. Changing conditions

The soil conditions described in this report are those observed during the study. Unless otherwise stated, these conditions are the basis for recommendations in the report. Soil conditions can be significantly affected by construction work (traffic, excavation, etc.) on the site or on adjacent sites. Excavation may expose the soil to changes due to humidity, drying or freezing. Unless otherwise indicated, the soil must be protected from these changes or rearrangements during construction. When conditions encountered at the site differ significantly from those provided in this report, due to the heterogeneous nature of the subsurface or due to construction work, it is the responsibility of the Client and the user of this report to notify SNC-Lavalin of changes and give SNC-Lavalin the opportunity to review the report's recommendations. Recognizing a change in ground conditions requires experience. It is therefore recommended that an experienced geotechnical engineer be dispatched to the site to see if conditions have changed significantly.

6. Drainage

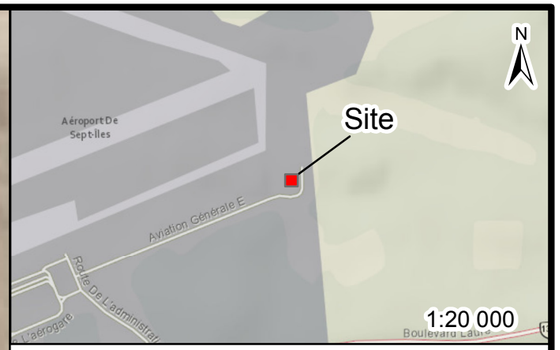
Groundwater drainage is often required for both temporary and permanent project facilities. An incorrect drainage design or execution can have serious consequences. SNC-Lavalin cannot under any circumstance take responsibility for the effects of drainage unless SNC-Lavalin is specifically involved in the detailed design and monitoring of the drainage system's construction.

7. Environmental characterization – Phase I

This report was written after diligent research and evaluation of point data sources or information obtained from third parties that may present uncertainties, gaps or omissions. These sources of information are subject to change over time, for example, according to the progress of activities on the site and surrounding area. Phase I includes no testing, sampling or characterization analysis by a laboratory. Subject to exceptions, Phase I is based on the observation of visible and accessible components on the property and those nearby and could bring environmental harm to the quality of the land in the study. The property titles mentioned in this report are used to identify the former owners of the study site and cannot under any circumstance be considered as an official document for reproduction or other uses. Finally, any sketch, plan view or diagram appearing in the report or any statement specifying dimensions, capacities, quantities or distances are approximate and are included to help the reader visualize the property.

Appendix 2

Drawing



Sondage réalisé

- Puits d'exploration
- Forage

Qualité environnementale des sols[1]

- <A
- A-B
- B-C
- C-RESC
- Non analysé

Note :
1 Guide d'intervention du MELCC, mars 2019

Réf. :
Service d'imagerie du gouvernement du Québec

CLIENT :	Travaux publics et Services gouvernementaux Canada
	SNC·LAVALIN
PROJET :	Caratérisation environnementale des sols - Démolition d'un hangar
ENDROIT :	Aéroport de Sept-Iles
TITRE :	Sondages réalisés et qualité environnementale des sols
ÉCHELLE : 1/250	2 0 2 4 6 8 10 m
DATE : 2020-12-14	DOSSIER : 677671-EG-L01
DESSIN : D01	RÉV. : 00

11x17

R:\000000\Hangar Sept-îles\Dessin\4-Plan

Appendix 3

Chemical Analyses Certificates

AGAT Laboratoires

350, rue Franquet
Québec, Québec
CANADA G1P 4P3
TEL (418)266-5511
FAX (418)653-2335
http://www.agatlabs.com

NOM DU CLIENT: SNC-LAVALIN INC
5500, BOUL. DES GALERIES, BUR 200
QUEBEC, QC G2K2E2
(418) 621-9700
À L'ATTENTION DE: Tristan Boutin-Miller
N° DE PROJET: 677671
N° BON DE TRAVAIL: 20Q663228
ANALYSE DES SOLS VÉRIFIÉ PAR: Alexa Leblanc, chimiste
ORGANIQUE DE TRACE VÉRIFIÉ PAR: Francois Boutin, Chimiste
DATE DU RAPPORT: 20 oct. 2020
NOMBRE DE PAGES: 12
VERSION*: 1

Pour tout complément d'information concernant cette analyse, veuillez contacter votre chargé(e) de projet client au (418) 266-5511.

*Notes

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Certificat d'analyse

N° BON DE TRAVAIL: 20Q663228

N° DE PROJET: 677671

NOM DU CLIENT: SNC-LAVALIN INC

À L'ATTENTION DE: Tristan Boutin-Miller

PRÉLEVÉ PAR:DAVID Lamontagne

LIEU DE PRÉLÈVEMENT:Sept-Îles

Balayage - 14 Métaux extractibles totaux

DATE DE RÉCEPTION: 2020-10-13

DATE DU RAPPORT: 2020-10-20

							IDENTIFICATION DE L'ÉCHANTILLON:	PU-2 /PM-5	PU-3 /PM-4
							MATRICE:	Sol	Sol
							DATE D'ÉCHANTILLONNAGE:	2020-10-08	2020-10-08
Paramètre	**Unités**	**C / N: A**	**C / N: B**	**C / N: C**	**C / N: D**	**LDR**		**1555949**	**1555950**
Argent	mg/kg	2	20	40	200	0.5		<0.5	<0.5
Arsenic	mg/kg	10	30	50	250	5		<5	<5
Baryum	mg/kg	200	500	2000	10000	20		46[<A]	52[<A]
Cadmium	mg/kg	0.9	5	20	100	0.9		<0.9	<0.9
Chrome	mg/kg	45	250	800	4000	45		<45	<45
Cobalt	mg/kg	25	50	300	1500	15		<15	<15
Cuivre	mg/kg	50	100	500	2500	40		<40	<40
Étain	mg/kg	5	50	300	1500	5		<5	<5
Manganèse	mg/kg	1000	1000	2200	11000	10		92[<A]	113[<A]
Molybdène	mg/kg	6	10	40	200	2		<2	<2
Nickel	mg/kg	30	100	500	2500	30		<30	<30
Plomb	mg/kg	50	500	1000	5000	30		<30	<30
Sélénium	mg/kg	3	3	10	50	1.0		<1.0	<1.0
Zinc	mg/kg	120	500	1500	7500	10		17[<A]	22[<A]

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes: A se réfère QC PTC 2016 A (Gren), B se réfère QC PTC 2016 B, C se réfère QC PTC 2016 C, D se réfère QC RESC (Annexe 1)
Les valeurs des critères sont uniquement fournies comme référence générale. Les critères fournis peuvent être ou ne pas être pertinents pour l'utilisation prévue. Se référer directement à la norme applicable pour l'interprétation réglementaire.

1555949-1555950 Une LDR plus élevée indique qu'une dilution a été effectuée afin de réduire la concentration des analytes ou de réduire l'interférence de la matrice.

Certifié par: Alexa Leblanc

CHIMISTE Alexa Leblanc 2019-098 QUÉBEC

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Certificat d'analyse

N° BON DE TRAVAIL: 20Q663228

N° DE PROJET: 677671

NOM DU CLIENT: SNC-LAVALIN INC

À L'ATTENTION DE: Tristan Boutin-Miller

PRÉLEVÉ PAR:DAVID Lamontagne

LIEU DE PRÉLÈVEMENT:Sept-Îles

Hydrocarbures aromatiques monocycliques (HAM) (Sol)

DATE DE RÉCEPTION: 2020-10-13

DATE DU RAPPORT: 2020-10-20

						IDENTIFICATION DE L'ÉCHANTILLON:	**PU-3 /PM-4**
						MATRICE:	**Sol**
						DATE D'ÉCHANTILLONNAGE:	**2020-10-08**
Paramètre	**Unités**	**C / N: A**	**C / N: B**	**C / N: C**	**C / N: D**	**LDR**	**1555950**
Benzène	mg/kg	0.2	0.5	5	5	0.1	<0.1
Chlorobenzène	mg/kg	0.2	1	10	10	0.2	<0.2
Dichloro-1,2 benzène	mg/kg	0.2	1	10	10	0.2	<0.2
Dichloro-1,3 benzène	mg/kg	0.2	1	10	10	0.2	<0.2
Dichloro-1,4 benzène	mg/kg	0.2	1	10	10	0.2	<0.2
Éthylbenzène	mg/kg	0.2	5	50	50	0.2	<0.2
Styrène	mg/kg	0.2	5	50	50	0.2	<0.2
Toluène	mg/kg	0.2	3	30	30	0.2	<0.2
Xylènes	mg/kg	0.4	5	50	50	0.2	<0.2
% Humidité	%					0.2	7.1
Étalon de recouvrement	**Unités**			**Limites**			
Rec. Fluorobenzène	%			50-140			85

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes: A se réfère QC PTC 2016 A, B se réfère QC PTC 2016 B, C se réfère QC PTC 2016 C, D se réfère QC RESC (Annexe 1)
Les valeurs des critères sont uniquement fournies comme référence générale. Les critères fournis peuvent être ou ne pas être pertinents pour l'utilisation prévue. Se référer directement à la norme applicable pour l'interprétation réglementaire.

1555950 Une LDR plus élevée indique qu'une dilution a été effectuée afin de réduire la concentration des analytes ou de réduire l'interférence de la matrice.

Certifié par:

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Certificat d'analyse

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NOM DU CLIENT: SNC-LAVALIN INC

À L'ATTENTION DE: Tristan Boutin-Miller

PRÉLEVÉ PAR:DAVID Lamontagne

LIEU DE PRÉLÈVEMENT:Sept-Îles

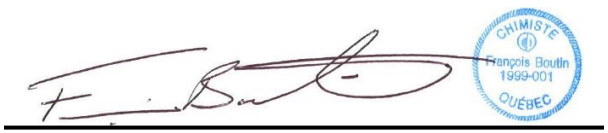
Hydrocarbures aromatiques polycycliques (HAP) (Sol)

DATE DE RÉCEPTION: 2020-10-13

DATE DU RAPPORT: 2020-10-20

					IDENTIFICATION DE L'ÉCHANTILLON:		PU-3 /PM-4
					MATRICE:		Sol
					DATE D'ÉCHANTILLONNAGE:		2020-10-08
Paramètre	**Unités**	**C / N: A**	**C / N: B**	**C / N: C**	**C / N: D**	**LDR**	**1555950**
Acénaphtène	mg/kg	0.1	10	100	100	0.1	<0.1
Acénaphtylène	mg/kg	0.1	10	100	100	0.1	<0.1
Anthracène	mg/kg	0.1	10	100	100	0.1	<0.1
Benzo (a) anthracène	mg/kg	0.1	1	10	34	0.1	<0.1
Benzo (a) pyrène	mg/kg	0.1	1	10	34	0.1	<0.1
Benzo (b) fluoranthène	mg/kg	0.1	1	10		0.1	<0.1
Benzo (j) fluoranthène	mg/kg	0.1	1	10	-	0.1	<0.1
Benzo (k) fluoranthène	mg/kg	0.1	1	10	-	0.1	<0.1
Benzo (b+j+k) fluoranthène	mg/kg					0.1	<0.1
Benzo (c) phénanthrène	mg/kg	0.1	1	10	56	0.1	<0.1
Benzo (g,h,i) pérylène	mg/kg	0.1	1	10	18	0.1	<0.1
Chrysène	mg/kg	0.1	1	10	34	0.1	<0.1
Dibenzo (a,h) anthracène	mg/kg	0.1	1	10	82	0.1	<0.1
Dibenzo (a,i) pyrène	mg/kg	0.1	1	10	34	0.1	<0.1
Dibenzo (a,h) pyrène	mg/kg	0.1	1	10	34	0.1	<0.1
Dibenzo (a,l) pyrène	mg/kg	0.1	1	10	34	0.1	<0.1
Diméthyl-7,12 benzo (a) anthracène	mg/kg	0.1	1	10	34	0.1	<0.1
Fluoranthène	mg/kg	0.1	10	100	100	0.1	<0.1
Fluorène	mg/kg	0.1	10	100	100	0.1	<0.1
Indéno (1,2,3-cd) pyrène	mg/kg	0.1	1	10	34	0.1	<0.1
Méthyl-3 cholanthrène	mg/kg	0.1	1	10	150	0.1	<0.1
Naphtalène	mg/kg	0.1	5	50	56	0.1	<0.1
Phénanthrène	mg/kg	0.1	5	50	56	0.1	<0.1
Pyrène	mg/kg	0.1	10	100	100	0.1	<0.1
Méthyl-1 naphtalène	mg/kg	0.1	1	10	56	0.1	<0.1
Méthyl-2 naphtalène	mg/kg	0.1	1	10	56	0.1	<0.1
Diméthyl-1,3 naphtalène	mg/kg	0.1	1	10	56	0.1	<0.1
Triméthyl-2,3,5 naphtalène	mg/kg	0.1	1	10	56	0.1	<0.1

Certifié par:



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http://www.agatlabs.com

Certificat d'analyse

N° BON DE TRAVAIL: 20Q663228

N° DE PROJET: 677671

NOM DU CLIENT: SNC-LAVALIN INC

À L'ATTENTION DE: Tristan Boutin-Miller

PRÉLEVÉ PAR:DAVID Lamontagne

LIEU DE PRÉLÈVEMENT:Sept-Îles

Hydrocarbures aromatiques polycycliques (HAP) (Sol)

DATE DE RÉCEPTION: 2020-10-13

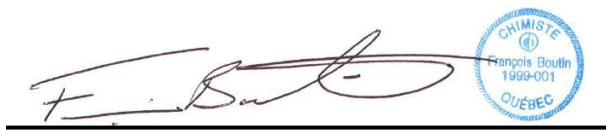
DATE DU RAPPORT: 2020-10-20

				IDENTIFICATION DE L'ÉCHANTILLON:			**PU-3 /PM-4**
							MATRICE:	**Sol**
				DATE D'ÉCHANTILLONNAGE:			**2020-10-08**
Paramètre	**Unités**	**C / N: A**	**C / N: B**	**C / N: C**	**C / N: D**	**LDR**	**1555950**
% Humidité	%					0.2	7.1
Étalon de recouvrement	**Unités**			**Limites**			
Rec. Naphtalène-d8	%			50-140			89
Rec. Pyrène-d10	%			50-140			101
Rec. p-Terphényl-d14	%			50-140			97

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes: A se réfère QC PTC 2016 A, B se réfère QC PTC 2016 B, C se réfère QC PTC 2016 C, D se réfère QC RESC (Annexe 1)
Les valeurs des critères sont uniquement fournies comme référence générale. Les critères fournis peuvent être ou ne pas être pertinents pour l'utilisation prévue. Se référer directement à la norme applicable pour l'interprétation réglementaire.

1555950 Une LDR plus élevée indique qu'une dilution a été effectuée afin de réduire la concentration des analytes ou de réduire l'interférence de la matrice.

Certifié par:



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Certificat d'analyse

N° BON DE TRAVAIL: 20Q663228

N° DE PROJET: 677671

NOM DU CLIENT: SNC-LAVALIN INC

À L'ATTENTION DE: Tristan Boutin-Miller

PRÉLEVÉ PAR:DAVID Lamontagne

LIEU DE PRÉLÈVEMENT:Sept-Îles

Hydrocarbures pétroliers C10-C50 (Sol)

DATE DE RÉCEPTION: 2020-10-13

DATE DU RAPPORT: 2020-10-20

					IDENTIFICATION DE L'ÉCHANTILLON:		**PU-1 /PM-5**	**PU-2 /PM-5**	**PU-3 /PM-4**	**PU-3 /PM-5**	**PU-4 /PM-4**
					MATRICE:		**Sol**	**Sol**	**Sol**	**Sol**	**Sol**
					DATE D'ÉCHANTILLONNAGE:		**2020-10-08**	**2020-10-08**	**2020-10-08**	**2020-10-08**	**2020-10-08**
Paramètre	**Unités**	**C / N: A**	**C / N: B**	**C / N: C**	**C / N: D**	**LDR**	**1555948**	**1555949**	**1555950**	**1555951**	**1555952**
Hydrocarbures pétroliers C10 à C50	mg/kg	100	700	3500	10000	100	<100	<100	267[A-B]	2700[B-C]	<100
% Humidité	%					0.2	1.1	9.9	7.1	6.7	2.7
Étalon de recouvrement	**Unités**			**Limites**							
Rec. Nonane	%			60-140			113	99	124	119	107

					IDENTIFICATION DE L'ÉCHANTILLON:		**F5 / CF-3**	**PU-3 /PM-5-DUP-4**
					MATRICE:		**Sol**	**Sol**
					DATE D'ÉCHANTILLONNAGE:		**2020-10-08**	**2020-10-08**
Paramètre	**Unités**	**C / N: A**	**C / N: B**	**C / N: C**	**C / N: D**	**LDR**	**1555953**	**1555954**
Hydrocarbures pétroliers C10 à C50	mg/kg	100	700	3500	10000	100	1750[B-C]	5170[C-D]
% Humidité	%					0.2	10.7	13.0
Étalon de recouvrement	**Unités**			**Limites**				
Rec. Nonane	%			60-140			97	106

Commentaires: LDR - Limite de détection rapportée; C / N - Critères Normes: A se réfère QC PTC 2016 A, B se réfère QC PTC 2016 B, C se réfère QC PTC 2016 C, D se réfère QC RESC (Annexe 1)
Les valeurs des critères sont uniquement fournies comme référence générale. Les critères fournis peuvent être ou ne pas être pertinents pour l'utilisation prévue. Se référer directement à la norme applicable pour l'interprétation réglementaire.

1555948-1555954 Une LDR plus élevée indique qu'une dilution a été effectuée afin de réduire la concentration des analytes ou de réduire l'interférence de la matrice.

Certifié par:

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Contrôle de qualité

NOM DU CLIENT: SNC-LAVALIN INC
N° BON DE TRAVAIL: 20Q663228
N° DE PROJET: 677671
À L'ATTENTION DE: Tristan Boutin-Miller
PRÉLEVÉ PAR:DAVID Lamontagne
LIEU DE PRÉLÈVEMENT:Sept-Îles

Analyse des Sols

Date du rapport: 2020-10-20			DUPLICATA			MATÉRIAU DE RÉFÉRENCE				BLANC FORTIFIÉ			ÉCH. FORTIFIÉ		
PARAMÈTRE	Lot	N° éch.	Dup #1	Dup #2	% d'écart	Blanc de méthode	% Récup.	Limites		% Récup.	Limites		% Récup.	Limites	
								Inf.	Sup.		Inf.	Sup.		Inf.	Sup.
Balayage - 14 Métaux extractibles totaux															
Argent	1545274		<0.5	<0.5	NA	< 0.5	102%	70%	130%	97%	80%	120%	106%	70%	130%
Arsenic	1545274		<5	<5	NA	< 5	102%	70%	130%	98%	80%	120%	105%	70%	130%
Baryum	1545274		21	20	NA	< 20	94%	70%	130%	98%	80%	120%	109%	70%	130%
Cadmium	1545274		<0.9	<0.9	NA	< 0.9	100%	70%	130%	101%	80%	120%	112%	70%	130%
Chrome	1545274		<45	<45	NA	< 45	95%	70%	130%	102%	80%	120%	111%	70%	130%
Cobalt	1545274		<15	<15	NA	< 15	106%	70%	130%	103%	80%	120%	109%	70%	130%
Cuivre	1545274		<40	<40	NA	< 40	104%	70%	130%	105%	80%	120%	111%	70%	130%
Étain	1545274		<5	<5	NA	< 5	102%	70%	130%	99%	80%	120%	99%	70%	130%
Manganèse	1545274		52	56	6.7	< 10	130%	70%	130%	96%	80%	120%	92%	70%	130%
Molybdène	1545274		<2	<2	NA	< 2	113%	70%	130%	100%	80%	120%	99%	70%	130%
Nickel	1545274		<30	<30	NA	< 30	101%	70%	130%	101%	80%	120%	107%	70%	130%
Plomb	1545274		<30	<30	NA	< 30	110%	70%	130%	111%	80%	120%	119%	70%	130%
Sélénium	1545274		<1.0	<1.0	NA	< 1.0	104%	70%	130%	104%	80%	120%	113%	70%	130%
Zinc	1545274		15	15	NA	15	110%	70%	130%	103%	80%	120%	110%	70%	130%

Commentaires: NA : Non applicable
NA dans l'écart du duplicata indique que l'écart n'a pu être calculé car l'un ou les deux résultats sont < 5x LDR.
NA dans le pourcentage de récupération de l'échantillon fortifié indique que le résultat n'est pas fourni en raison de l'hétérogénéité de l'échantillon ou de la concentration trop élevée par rapport à l'ajout.
NA dans le blanc fortifié ou le MRC indique qu'il n'est pas requis par la procédure.
Pour les métaux, l'écart acceptable est applicable pour 90% des composés. Pour les 10% des composés restant, un écart de 10% de plus du critère applicable est accepté.
Le résultat du blanc de méthode n'a pas été soustrait aux échantillons (Zn).

Certifié par: Alexa Leblanc

CHIMISTE Alexa Leblanc 2019-098 QUÉBEC

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Contrôle de qualité

NOM DU CLIENT: SNC-LAVALIN INC
N° BON DE TRAVAIL: 20Q663228
N° DE PROJET: 677671
À L'ATTENTION DE: Tristan Boutin-Miller
PRÉLEVÉ PAR:DAVID Lamontagne
LIEU DE PRÉLÈVEMENT:Sept-Îles

Analyse organique de trace

Date du rapport: 2020-10-20

PARAMÈTRE	Lot	N° éch.	DUPLICATA			MATÉRIAU DE RÉFÉRENCE				BLANC FORTIFIÉ			ÉCH. FORTIFIÉ		
			Dup #1	Dup #2	% d'écart	Blanc de méthode	% Récup.	Limites		% Récup.	Limites		% Récup.	Limites	
								Inf.	Sup.		Inf.	Sup.		Inf.	Sup.
Hydrocarbures pétroliers C10-C50 (Sol)															
Hydrocarbures pétroliers C10 à C50	1566878		361	411	NA	< 100	78%	60%	140%	111%	60%	140%	138%	60%	140%
Rec. Nonane	1566878		104	104	0.0	96	94%	60%	140%	114%	60%	140%	121%	60%	140%
% Humidité	1548903		14.5	13.2	9.1	< 0.2	99%	80%	120%	NA			NA		
Hydrocarbures aromatiques monocycliques (HAM) (Sol)															
Benzène	1555893		<0.1	<0.1	NA	< 0.1	111%	50%	140%	121%	60%	130%	98%	50%	140%
Chlorobenzène	1555893		<0.2	<0.2	NA	< 0.2	102%	50%	140%	114%	60%	130%	89%	50%	140%
Dichloro-1,2 benzène	1555893		<0.2	<0.2	NA	< 0.2	101%	50%	140%	110%	60%	130%	90%	50%	140%
Dichloro-1,3 benzène	1555893		<0.2	<0.2	NA	< 0.2	102%	50%	140%	112%	60%	130%	87%	50%	140%
Dichloro-1,4 benzène	1555893		<0.2	<0.2	NA	< 0.2	100%	50%	140%	108%	60%	130%	85%	50%	140%
Éthylbenzène	1555893		<0.2	<0.2	NA	< 0.2	103%	50%	140%	115%	60%	130%	90%	50%	140%
Styrène	1555893		<0.2	<0.2	NA	< 0.2	99%	50%	140%	113%	60%	130%	87%	50%	140%
Toluène	1555893		<0.2	<0.2	NA	< 0.2	105%	50%	140%	117%	60%	130%	93%	50%	140%
Rec. Fluorobenzène	1555893		83	81	2.7	87	88%	50%	140%	97%	50%	140%	78%	50%	140%
% Humidité	1548903		14.5	13.2	9.1	< 0.2	99%	80%	120%	NA			NA		
Hydrocarbures aromatiques polycycliques (HAP) (Sol)															
Acénaphtène	1552556		<0.1	<0.1	NA	< 0.1	96%	50%	140%	114%	50%	140%	96%	50%	140%
Acénaphtylène	1552556		<0.1	<0.1	NA	< 0.1	96%	50%	140%	114%	50%	140%	98%	50%	140%
Anthracène	1552556		<0.1	<0.1	NA	< 0.1	94%	50%	140%	108%	50%	140%	98%	50%	140%
Benzo (a) anthracène	1552556		<0.1	<0.1	NA	< 0.1	110%	50%	140%	116%	50%	140%	112%	50%	140%
Benzo (a) pyrène	1552556		<0.1	<0.1	NA	< 0.1	100%	50%	140%	107%	50%	140%	102%	50%	140%
Benzo (b) fluoranthène	1552556		<0.1	<0.1	NA	< 0.1	98%	50%	140%	99%	50%	140%	102%	50%	140%
Benzo (j) fluoranthène	1552556		<0.1	<0.1	NA	< 0.1	108%	50%	140%	117%	50%	140%	110%	50%	140%
Benzo (k) fluoranthène	1552556		<0.1	<0.1	NA	< 0.1	94%	50%	140%	100%	50%	140%	86%	50%	140%
Benzo (c) phénanthrène	1552556		<0.1	<0.1	NA	< 0.1	102%	50%	140%	110%	50%	140%	104%	50%	140%
Benzo (g,h,i) pérylène	1552556		<0.1	<0.1	NA	< 0.1	94%	50%	140%	107%	50%	140%	98%	50%	140%
Chrysène	1552556		<0.1	<0.1	NA	< 0.1	102%	50%	140%	58%	50%	140%	106%	50%	140%
Dibenzo (a,h) anthracène	1552556		<0.1	<0.1	NA	< 0.1	88%	50%	140%	102%	50%	140%	93%	50%	140%
Dibenzo (a,i) pyrène	1552556		<0.1	<0.1	NA	< 0.1	98%	50%	140%	107%	50%	140%	104%	50%	140%
Dibenzo (a,h) pyrène	1552556		<0.1	<0.1	NA	< 0.1	96%	50%	140%	117%	50%	140%	116%	50%	140%
Dibenzo (a,l) pyrène	1552556		<0.1	<0.1	NA	< 0.1	76%	50%	140%	86%	50%	140%	84%	50%	140%
Diméthyl-7,12 benzo (a) anthracène	1552556		<0.1	<0.1	NA	< 0.1	66%	50%	140%	75%	50%	140%	72%	50%	140%
Fluoranthène	1552556		<0.1	<0.1	NA	< 0.1	108%	50%	140%	116%	50%	140%	110%	50%	140%
Fluorène	1552556		<0.1	<0.1	NA	< 0.1	94%	50%	140%	111%	50%	140%	96%	50%	140%
Indéno (1,2,3-cd) pyrène	1552556		<0.1	<0.1	NA	< 0.1	88%	50%	140%	103%	50%	140%	90%	50%	140%

Commentaires: NA : Non applicable
NA dans l'écart du duplicata indique que l'écart n'a pu être calculé car l'un ou les deux résultats sont < 5x LDR.
NA dans le pourcentage de récupération de l'échantillon fortifié indique que le résultat n'est pas fourni en raison de l'hétérogénéité de l'échantillon ou de la concentration trop élevée par rapport à l'ajout.

Commentaires: NA : Non applicable
NA dans l'écart du duplicata indique que l'écart n'a pu être calculé car l'un ou les deux résultats sont < 5x LDR.
NA dans le pourcentage de récupération de l'échantillon fortifié indique que le résultat n'est pas fourni en raison de l'hétérogénéité de l'échantillon ou de la concentration trop élevée par rapport à l'ajout.

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Contrôle de qualité

NOM DU CLIENT: SNC-LAVALIN INC
N° DE PROJET: 677671
PRÉLEVÉ PAR:DAVID Lamontagne

N° BON DE TRAVAIL: 20Q663228
À L'ATTENTION DE: Tristan Boutin-Miller
LIEU DE PRÉLÈVEMENT:Sept-Îles

Analyse organique de trace (Suite)

Date du rapport: 2020-10-20			DUPLICATA			MATÉRIAU DE RÉFÉRENCE				BLANC FORTIFIÉ			ÉCH. FORTIFIÉ		
PARAMÈTRE	Lot	N° éch.	Dup #1	Dup #2	% d'écart	Blanc de méthode	% Récup.	Limites		% Récup.	Limites		% Récup.	Limites	
								Inf.	Sup.		Inf.	Sup.		Inf.	Sup.
Méthyl-3 cholanthrène	1552556		<0.1	<0.1	NA	< 0.1	74%	50%	140%	82%	50%	140%	90%	50%	140%
Naphtalène	1552556		<0.1	<0.1	NA	< 0.1	90%	50%	140%	107%	50%	140%	92%	50%	140%
Phénanthrène	1552556		<0.1	<0.1	NA	< 0.1	96%	50%	140%	110%	50%	140%	94%	50%	140%
Pyrène	1552556		<0.1	<0.1	NA	< 0.1	112%	50%	140%	122%	50%	140%	114%	50%	140%
Méthyl-1 naphtalène	1552556		<0.1	<0.1	NA	< 0.1	103%	50%	140%	92%	50%	140%	80%	50%	140%
Méthyl-2 naphtalène	1552556		<0.1	<0.1	NA	< 0.1	94%	50%	140%	101%	50%	140%	96%	50%	140%
Diméthyl-1,3 naphtalène	1552556		<0.1	<0.1	NA	< 0.1	90%	50%	140%	104%	50%	140%	88%	50%	140%
Triméthyl-2,3,5 naphtalène	1552556		<0.1	<0.1	NA	< 0.1	82%	50%	140%	109%	50%	140%	82%	50%	140%
Rec. Naphtalène-d8	1552556		84	87	3.5	84	89%	50%	140%	102%	50%	140%	90%	50%	140%
Rec. Pyrène-d10	1552556		96	99	3.1	97	94%	50%	140%	104%	50%	140%	97%	50%	140%
Rec. p-Terphényl-d14	1552556		93	96	3.2	97	94%	50%	140%	105%	50%	140%	96%	50%	140%
% Humidité	1548903		14.5	13.2	9.1	< 0.2	99%	80%	120%	NA			NA		

Commentaires: NA : Non applicable
NA dans l'écart du duplicata indique que l'écart n'a pu être calculé car l'un ou les deux résultats sont < 5x LDR.
NA dans le pourcentage de récupération de l'échantillon fortifié indique que le résultat n'est pas fourni en raison de l'hétérogénéité de l'échantillon ou de la concentration trop élevée par rapport à l'ajout.
L'écart acceptable est applicable pour 90% des composés. Pour les 10% des composés restant, un écart de 10% de plus du critère applicable est accepté.

Certifié par:

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Sommaire de méthode

NOM DU CLIENT: SNC-LAVALIN INC

N° BON DE TRAVAIL: 20Q663228

N° DE PROJET: 677671

À L'ATTENTION DE: Tristan Boutin-Miller

PRÉLEVÉ PAR:DAVID Lamontagne

LIEU DE PRÉLÈVEMENT:Sept-Îles

PARAMÈTRE	PRÉPARÉ LE	ANALYSÉ LE	AGAT P.O.N.	RÉFÉRENCE DE LITTÉRATURE	TECHNIQUE ANALYTIQUE
Analyse des Sols					
Argent	2020-10-19	2020-10-19	MET-161-6106F, 6108F	MA. 200 - Mét 1.2	ICP/MS
Arsenic	2020-10-19	2020-10-19	MET-161-6106F, 6108F	MA. 200 - Mét 1.2	ICP/MS
Baryum	2020-10-19	2020-10-19	MET-161-6106F, 6108F	MA. 200 - Mét 1.2	ICP/MS
Cadmium	2020-10-19	2020-10-19	MET-161-6106F, 6108F	MA. 200 - Mét 1.2	ICP/MS
Chrome	2020-10-19	2020-10-19	MET-161-6106F, 6108F	MA. 200 - Mét 1.2	ICP/MS
Cobalt	2020-10-19	2020-10-19	MET-161-6106F, 6108F	MA. 200 - Mét 1.2	ICP/MS
Cuivre	2020-10-19	2020-10-19	MET-161-6106F, 6108F	MA. 200 - Mét 1.2	ICP/MS
Étain	2020-10-19	2020-10-19	MET-161-6106F, 6108F	MA. 200 - Mét 1.2	ICP/MS
Manganèse	2020-10-19	2020-10-19	MET-161-6106F, 6108F	MA. 200 - Mét 1.2	ICP/MS
Molybdène	2020-10-19	2020-10-19	MET-161-6106F, 6108F	MA. 200 - Mét 1.2	ICP/MS
Nickel	2020-10-19	2020-10-19	MET-161-6106F, 6108F	MA. 200 - Mét 1.2	ICP/MS
Plomb	2020-10-19	2020-10-19	MET-161-6106F, 6108F	MA. 200 - Mét 1.2	ICP/MS
Sélénium	2020-10-19	2020-10-19	MET-161-6106F, 6108F	MA. 200 - Mét 1.2	ICP/MS
Zinc	2020-10-19	2020-10-19	MET-161-6106F, 6108F	MA. 200 - Mét 1.2	ICP/MS

AGAT Laboratoires

350, rue Franquet
Québec, Québec
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FAX (418)653-2335
http://www.agatlabs.com

Sommaire de méthode

NOM DU CLIENT: SNC-LAVALIN INC

N° BON DE TRAVAIL: 20Q663228

N° DE PROJET: 677671

À L'ATTENTION DE: Tristan Boutin-Miller

PRÉLEVÉ PAR:DAVID Lamontagne

LIEU DE PRÉLÈVEMENT:Sept-Îles

PARAMÈTRE	PRÉPARÉ LE	ANALYSÉ LE	AGAT P.O.N.	RÉFÉRENCE DE LITTÉRATURE	TECHNIQUE ANALYTIQUE
Analyse organique de trace					
Benzène	2020-10-15	2020-10-15	VOL-160-5005F	MA. 400 - COV. 2.0	(HS)GC/MS
Chlorobenzène	2020-10-15	2020-10-15	VOL-160-5005F	MA. 400 - COV. 2.0	(HS)GC/MS
Dichloro-1,2 benzène	2020-10-15	2020-10-15	VOL-160-5005F	MA. 400 - COV. 2.0	(HS)GC/MS
Dichloro-1,3 benzène	2020-10-15	2020-10-15	VOL-160-5005F	MA. 400 - COV. 2.0	(HS)GC/MS
Dichloro-1,4 benzène	2020-10-15	2020-10-15	VOL-160-5005F	MA. 400 - COV. 2.0	(HS)GC/MS
Éthylbenzène	2020-10-15	2020-10-15	VOL-160-5005F	MA. 400 - COV. 2.0	(HS)GC/MS
Styrène	2020-10-15	2020-10-15	VOL-160-5005F	MA. 400 - COV. 2.0	(HS)GC/MS
Toluène	2020-10-15	2020-10-15	VOL-160-5005F	MA. 400 - COV. 2.0	(HS)GC/MS
Xylènes	2020-10-15	2020-10-15	VOL-160-5005F	MA. 400 - COV. 2.0	(HS)GC/MS
Rec. Fluorobenzène	2020-10-15	2020-10-15	VOL-160-5005F	MA. 400 - COV. 2.0	(HS)GC/MS
% Humidité	2020-10-17	2020-10-17	INOR-161-6006F	MA. 100 - S.T. 1.1	GRAVIMÉTRIE
Acénaphtène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Acénaphtylène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Anthracène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Benzo (a) anthracène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Benzo (a) pyrène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Benzo (b) fluoranthène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Benzo (j) fluoranthène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Benzo (k) fluoranthène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Benzo (b+j+k) fluoranthène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Benzo (c) phénanthrène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Benzo (g,h,i) pérylène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Chrysène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Dibenzo (a,h) anthracène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Dibenzo (a,i) pyrène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Dibenzo (a,h) pyrène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Dibenzo (a,l) pyrène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Diméthyl-7,12 benzo (a) anthracène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Fluoranthène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Fluorène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Indéno (1,2,3-cd) pyrène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Méthyl-3 cholanthrène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Naphtalène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Phénanthrène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Pyrène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Méthyl-1 naphtalène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Méthyl-2 naphtalène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Diméthyl-1,3 naphtalène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Triméthyl-2,3,5 naphtalène	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Rec. Naphtalène-d8	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Rec. Pyrène-d10	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
Rec. p-Terphényl-d14	2020-10-19	2020-10-19	ORG-160-5102F	MA. 400 - HAP 1.1	GC/MS
% Humidité	2020-10-17	2020-10-17	INOR-161-6006F	MA. 100 - S.T. 1.1	GRAVIMÉTRIE
Hydrocarbures pétroliers C10 à C50	2020-10-19	2020-10-19	ORG-160-5100F	MA. 400 - HYD. 1.1	GC/FID
Rec. Nonane	2020-10-19	2020-10-19	ORG-160-5100F	MA. 400 - HYD. 1.1	GC/FID
% Humidité	2020-10-17	2020-10-17	INOR-161-6006F	MA. 100 - S.T. 1.1	GRAVIMÉTRIE

AGAT Laboratoires

Chaîne de traçabilité: Environnement

350, rue Franquet, Québec (Québec) G1P 4P3
Téléphone: (418) 266-5511 - Télécopieur: (418) 653-2335 - www.agatlabs.com

À l'usage exclusif du laboratoire
Condition à l'arrivée: Bonne ☐ Mauvaise (voir notes) ☐
Température à l'arrivée : 5°C
No de travail AGAT : 2020 663228
Notes :

Information du client
Compagnie: SNC-Lavalin inc.
Adresse: 5500 boulevard des Galeries, Québec, G2K 2E2
Téléphone: 418-621-5500 #42966 Fax:
Projet client: 677671
Bon de commande: 677671-0002 Soumission:
Lieu de prélèvement: Sept-Iles
Prélevé par: David Lamontagne

Envoyer rapport à:
Nom: Tristan Boutin-Miller
Courriel: Tristan.Boutin-Miller@snclavalin.com

Commentaires:
Province du Grenville

Matrice (légende) :
S Sol | SL Solide | SE Sédiment | EP Eau potable (Note pour réseau: Veuillez fournir votre formulaire MDDEP)
B Boue | EU Eau usée | ST Eau souterraine
ES Eau de surface | EF Effluent | AF Affluent

Délai d'analyse requis
Délai régulier ☑ 5 à 7 jours ouvrables Date requise :
Délai rapide ☐ même jour (6-12 hres) ☐ 24 heures ☐ 48 heures ☐ 72 heures
Les échantillons reçus après 16:00 seront enregistrés comme étant reçus le jour ouvrable suivant

Format de rapport
☐ Portrait : 1 par page
☐ Paysage : plusieurs par page

Critères à respecter:
RMD (mat. Lixiviable) ☐
RDS (mat. Lixiviable) ☐
REIMR art. ☐
Terrains contaminés
A ☐ B ☐ C ☐ D* ☐
Eau Consommation ☐ Eau Résurgence ☐
*Règ. sur l'enfouissement des sols contaminés
Règ 87 CUM (art. 10) ☐
Règ 87 CUM (art. 11) ☐
Autre (spécifier)

Identification de l'échantillon	Date de prélèvement	Matrice	Nb de contenants	COSV: AGR ☐ Chlorobenzènes ☐ Phthalates ☐	Composés phénoliques (GC-MS) D130 ☐ D131 ☐	HAP	COV: HHT ☐ HMA ☑ BTEX ☐ THM ☐	Hydrocarbures pétroliers C10-C50	Huiles et graisse: minérales ☐ totales ☐	BPC: Congénères ☐ Aroclor ☐	Pesticides (spécifier) :	Métaux (spécifier) :	6 métaux (Cd, Cr, Cu, Ni, Pb, Zn)	Métaux TC	Cations (Ca, K, Mg, Na)	Mercure (Hg)	P total ☐ P inor. ☐ o-phosphate ☐	Phénol (colorimétrique)	DBO5 ☐ DCO ☐	Fluorures ☐ Chlorures ☐ SO4 ☐ Sulfures ☐	Cyanures: Totaux ☐ Disponibles ☐ Oxydables ☐	Azote: TKN ☐ NH4 ☐	NO2 ☐ NO3 ☐ NO2+NO3 ☐ Turbidité ☐	Couleur ☐ pH ☐ Alcalinité ☐ Conductivité ☐	Solides: totaux ☐ volatiles ☐ dissous ☐	MES ☐ COT ☐	Salmonelle ☐ E. coli ☐	RDS ☐ RMD ☐ REIMR art.	Règlement 87 CUM: Article 10 ☐ Article 11 ☐	Microbiologie (spécifier)
PU-1 / PM-5	2020-10-08		1					X																							
PU-2 / PM-5	2020-10-08		1					X						X																	
PU-3 / PM-4	2020-10-08					X	X	X						X																	
PU-3 / PM-5	2020-10-08		1					X																							
PU-4 / PM-4	2020-10-08		1					X																							
F5 / CF-3	2020-10-08		1					X																							
PU-3 / PM-5-DUP-4	2020-10-08		1					X																							

Échantillon remis par (nom en lettres moulées et signature)	Date / heure	Échantillon reçu par (nom en lettres moulées et signature)	Date / heure	Copies	Page 1 de 1
David Lamontagne		13 oct 8h00 PN CF		Rose = client Jaune = AGAT Blanche = AGAT	No.:

Appendix 4

Management of Excavated Soils Grille from Intervention Guide

Annexe 5 : Grille de gestion des sols excavés

La grille de gestion des sols excavés a été élaborée de manière à encourager la valorisation des sols contaminés, en respect de la réglementation en vigueur (section 6.5.1.2 du présent guide d'intervention). Il est attendu que la gestion des sols contaminés sur leur terrain d'origine ou non s'effectue en tout temps dans une optique de **valorisation**, c'est-à-dire pour satisfaire un besoin spécifique (infrastructures utiles et nécessaires) qui nécessiterait autrement l'apport de matériaux propres provenant de milieux naturels qui devraient alors être exploités pour combler la demande (carrières, sablières, tourbières, etc.). Le cas particulier des sols qui sont mélangés à des matières résiduelles est discuté à la section 7.7. du présent guide.

La grille de gestion des sols excavés ne s'applique que pour une contamination de nature anthropique. S'il est établi, en utilisant la procédure décrite dans les *Lignes directrices sur l'évaluation des teneurs de fond naturelles dans les sols* (voir l'encadré de la section 8.2.1.2), que la concentration naturelle d'une substance dans le sol est supérieure au critère A, cette concentration sera considérée comme équivalente au critère A.

≤ critère A[1]

Utilisés sans restriction sur tout terrain.

< critère B (valeurs limites de l'annexe I du RPRT)

1. Ailleurs que sur le terrain d'origine[2], les sols ne peuvent être déposés que sur des sols dont la concentration en contaminants est égale ou supérieure à celle des sols remblayés (article 4 du RSCTSC) et s'ils ne dégagent pas d'odeurs d'hydrocarbures perceptibles. Cette valorisation doit se faire de façon contrôlée, pour éviter qu'elle ne se transforme en une simple élimination sauvage de contaminants dans l'environnement.
2. Aux mêmes conditions, déposés sur ou dans des terrains destinés à l'habitation s'ils sont utilisés comme matériau de remblayage dans le cadre de travaux de réhabilitation de terrains faits conformément à la LQE.

≤ critère B (valeurs limites de l'annexe I du RPRT)

1. Valorisés sur le terrain d'origine[2] ou sur le terrain à partir duquel a eu lieu l'activité à l'origine de la contamination. Les sols ne doivent pas dégager d'odeurs d'hydrocarbures perceptibles. Cette valorisation doit se faire de façon contrôlée, pour éviter qu'elle ne se transforme en une simple élimination sauvage de contaminants dans l'environnement.
2. Valorisés comme matériau de recouvrement journalier ou final dans un lieu d'enfouissement technique (LET), comme matériau de recouvrement hebdomadaire ou final dans un lieu d'enfouissement en tranchée ou comme recouvrement mensuel ou final dans un lieu d'enfouissement de débris de construction ou de démolition, conformément au REIMR aux conditions des articles 42, 50, 90, 91, 105 ou 106.
3. Valorisés comme recouvrement final dans un lieu d'enfouissement de sols contaminés (LESC) aux conditions décrites à l'article 38 du RESC ou valorisés dans un système de captage des gaz prévu à l'article 13 du RESC.
4. Valorisés comme recouvrement final d'un lieu de dépôt définitif de matières dangereuses aux conditions de l'article 101 du RMD.
5. Valorisés comme matériau de recouvrement final dans un système de gestion qui comporte le dépôt définitif par enfouissement de déchets de fabriques de pâtes et papiers, aux conditions de l'article 116 du Règlement sur les fabriques de pâtes et papiers (RFPP).

6. Valorisés sur un lieu d'élimination nécessitant un recouvrement, aux conditions prévues dans l'autorisation délivrée en vertu de l'article 22 de la LQE.
7. Valorisés avec ou sans MRF comme matériau apte à la végétation dans des projets de restauration d'aires d'accumulation de résidus miniers[3] ou dans la couverture de lieux visés par le RFPP, le RESC ou le RMD. Les sols ne doivent pas dégager d'odeurs d'hydrocarbures perceptibles. Dans le cas d'ajout de MRF, le projet doit être autorisé et respecter le *Guide sur l'utilisation de matières résiduelles fertilisantes pour la restauration de la couverture végétale de lieux dégradés*[4].
8. Valorisés comme couche de protection d'une géomembrane utilisée dans un système multicouche lors de la restauration d'une aire d'accumulation de résidus miniers générateurs d'acide[3].
9. Éliminés dans un lieu d'enfouissement visé par le RESC.
10. Éliminés dans un LET, un lieu d'enfouissement en tranchée, un lieu d'enfouissement en milieu nordique, un lieu d'enfouissement de débris de construction ou de démolition ou un lieu d'enfouissement en territoire isolé, conformément à l'article 4 du REIMR.

≥ critère B et ≤ critère C

1. Valorisés sur le terrain d'origine[2] comme matériau de remblayage, à la condition que les concentrations mesurées respectent les critères ou valeurs limites réglementaires applicables aux sols selon l'usage et le zonage. Cette valorisation doit se faire de façon contrôlée, pour éviter qu'elle ne se transforme en une simple élimination sauvage de contaminants dans l'environnement.

1. Valorisés comme matériau de recouvrement dans un LET ou comme matériau de recouvrement hebdomadaire dans un lieu d'enfouissement en tranchée, aux conditions des articles 42, 50 ou 90 du REIMR. Ces conditions incluent notamment que les concentrations de composés organiques volatils soient égales ou inférieures aux critères B.
2. Traités sur place ou dans un lieu de traitement autorisé.
3. Éliminés dans un lieu d'enfouissement visé par le RESC.

< annexe I du RESC

1. Valorisés pour remplir des excavations sur le terrain d'origine[2] lors de travaux de réhabilitation, aux conditions prévues dans le plan de réhabilitation approuvé dans le cadre d'une analyse de risque (dossiers GTE), à la condition que les hydrocarbures pétroliers C_{10}-C_{50} et les COV respectent les critères d'usage.
2. Traités sur place ou dans un lieu de traitement autorisé.
3. Éliminés dans un lieu d'enfouissement visé par le RESC.

≥ annexe I du RESC

1. Décontaminés sur place ou dans un lieu de traitement autorisé et gestion selon le résultat obtenu. Si cela est impossible, éliminés dans un lieu d'enfouissement visé par le RESC pour les exceptions mentionnées à l'article 4, paragraphe 1°, sous-paragraphe *a), b)* ou *c)*.

SNC·LAVALIN