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SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION

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Title - Sujet Réaménagement salles conférences Réaménagement des salles de conférence au 105 McGill, Montréal	
Solicitation No. - N° de l'invitation EE520-221630/A	**Amendment No. - N° modif.** 005
Client Reference No. - N° de référence du client R.101521.100	**Date** 2022-03-01
GETS Reference No. - N° de référence de SEAG PW-$MTC-170-16386	
File No. - N° de dossier MTC-1-44178 (170)	**CCC No./N° CCC - FMS No./N° VME**

Solicitation Closes - L'invitation prend fin
at - à 02:00 PM Eastern Standard Time EST
on - le 2022-03-11 Heure Normale du l'Est HNE

F.O.B. - F.A.B.
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Canada

Redevelopment work of the conference rooms at 105 McGill
Montreal, Quebec

AMENDMENT 005

Included in this amendment :

1. Addendum 2

ADDENDUM 1

See the following pages for addendum 2.

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.

SPAC – R.101521.001

Phase 2

ADDENDUM Nº02

ISSUED FOR ADDENDUM #2

28/02/2022

Previously issued Addendum:

Addendum no.1 (2022-02-16)

This document shall be read with and forms an integral part of the Contract Documents. It modifies and clarifies the drawings and the specifications of the above-mentioned project. The modifications described herein come into force immediately.

Architecture

Modifications to Specifications

- Modify section 02 41 99 and add the following documents:
  - F2010 Hazardous Materials Remediation – in connection with the removal of paint containing lead.
  - F2010 Moderate Risk Asbestos Removal Procedure – In connection with removing asbestos-containing heat insulation from irregular piping sections (elbows) in the work area

Modifications to Drawings

- N/A

Prepared by: D.R.	Reviewed by: D.E.	Issued by: D.R.

1.0 GENERAL

1.1 Conditions

.1 Division 01 - General Requirements shall be read in conjunction with and shall govern this Section.

1.2 References

.1 Comply with all standards mentioned in this specification, unless more stringent requirements are given herein.

.2 See **Section 01 41 00** for legend of standards.

.3 CSA International
.1 CSA S350-FM1980(R2003), Code of Practice for Safety in Demolition of Structures.

.4 National Research Council Canada (NRC)
.1 National Building Code of Canada 2015(NBC).

1.3 Submittals

.1 Submit documents and elements as per **Section 01 33 00** and the following requirements:
.1 Shop drawings (S.D.):
.1 Before proceeding with demolition and where required by authority having jurisdiction, submit for review by the Departmental Representative shoring and underpinning drawings
.2 The drawings shall be prepared by qualified professional engineer registered or licensed in the province concerned, showing proposed method.
.2 Waste reduction work plan (W.R.):
.1 Prior beginning of work on site submit details waste reduction work plan in accordance with **Section 01 74 21**.

1.4 Site Conditions

.1 **Sections 01 51 00**.

1.5 Waste Management and Disposal

.1 Waste management and disposal to be performed as per **Section 01 74 21** as instructed by the Departmental Representative.

2.0 PRODUCTS

(not applicable)

3.0 EXECUTION

Rev.1 **3.1 General**

.1 To accommodate mechanical, electrical or other work:
  .1 Repair and make good temporary openings in partitions and ceilings required for electromechanical service penetrations as indicated. Ensure weather-tightness, fire-resistance and acoustical properties of partitions and ceilings if necessary.

.2 See document **F2010 Hazardous Materials Remediation** – in connection with the removal of paint containing lead.

.3 See document **F2010 Moderate Risk Asbestos Removal Procedure** – In connection with removing asbestos-containing heat insulation from irregular piping sections (elbows) in the work area

3.2 Salvage

.1 Visit the work site with the Departmental Representative and refer to demolition drawings and specifications for items to be salvaged for reuse. See also **Section 01 11 00**.

.2 Remove items to be salvaged or reused, store as directed by the Departmental representative, and re-install under the appropriate Section of specification, if so indicated. See also **Mechanical** and **Electrical**.

3.3 Demolition and Alteration Work

.1 Security:
  .1 Unless otherwise indicated, execute demolition according to the following prescriptions:
    .1 Observe and ensure satisfaction of security measures for construction work, as prescribed by **Sections 01 35 30** and **01 50 00**.
    .2 Comply with the Government of Canada Fire Protection Standard requirements, 2014 (Federal Buildings).

.2 Condition of work to be demolished:
  .1 Before commencing work, visit the work site with the Departmental representative to take note of existing conditions and work to be demolished.
  .2 Report all defective work and deficiencies in writing to the Departmental representative with supporting documentation (photos, drawings, etc.).
  .3 Any damage observed after the commencement of the demolition work will be presumed to be the result of the work of this Section and shall be repaired at the Contractor's own cost, to the Departmental representative

.3 Coordination:
  .1 Coordinate all work with the various trades and cooperate with the Departmental representative at all times to insure least possible interference in maintaining the existing services.
  .2 Notify Departmental representative at least **5 working days** in advance before proceeding with demolition work.

.4 Temporary enclosures:
  .1 Construct temporary partitions as specified in **Section 01 56 00**.

.5 Preparatory work:

.1 Locate and protect utilities. Preserve active utilities traversing site in operating condition.

.2 Install warning signs on electrical equipment and cables which shall remain live during work for other parts of the building or site

.3 Notify and obtain approval of utility companies before starting demolition.

.4 Disconnect, cap, plug or divert, as required, existing public utilities within the property where they interfere with the execution of the work, in conformity with the requirements of the authorities having jurisdiction. Mark the location of these and previously capped or plugged services on the site and indicate location (horizontal and vertical) on the record drawings, Support, shore up and maintain pipes and conduits encountered.

.5 Immediately notify the Departmental representative and the utility company concerned in case of damage to any utility or service, designated to remain in place.

.6 Immediately notify the Departmental representative should uncharted utility or service be encountered, and await instruction in writing regarding remedial action.

.7 Defray the costs of preparatory work mentioned above.

.6 Protection:

.1 Take all necessary steps to prevent movement, settlement or damage of adjacent areas and services. Provide bracing, shoring and underpinning as required.

.2 Provide protection for new and existing work, for material, equipment, fixtures and accessories which must remain undamaged for whatever reason.

.3 Keep waste containers covered with a securely fixed plastic tarpaulin all times. Keep all garbage chutes closed when not in use.

.4 Prevent debris from blocking surface drainage system, sanitary systems, mechanical and electrical systems which must remain in operation to service other parts of the building.

.5 Ensure that debris in no way obstruct the exits and corridors and provide for the installation of dust screens or other protective devices around the elements to be demolished and prevent respectively, the penetration of dust, rain, or snow into occupied areas and through building air intakes.

.6 Immediately repair any utility services which are interrupted or damaged accidentally during the work.

.7 Fully protect the work, the materials and the equipment during any temporary closures of the site for whatever reason.

.8 Furnish and maintain temporary enclosures until use is terminated, as indicated and prescribed.

.9 See also **Section 01 35 29.06** and **Section 01 52 00**.

.7 Demolition and repair work:

.1 Perform work in accordance with standards, codes and regulations mentioned or referred to in this specification, and see that all workers are fully aware of such safety requirements.

.2 Plan and execute each operation in a secure way and with the objective of minimum disturbance, noise and vibration to the users of the existing services. Demolish in a manner to minimize dust.

.3 Remove elements and work indicated.

.4 Demolish parts or elements of existing building to accommodate new construction of alterations and remedial work, as indicated on drawings, or for the passage of **Mechanical** and **Electrical** elements**.**

.5 Trim edges of partially demolished building elements to tolerances as specified or required, to suit installation of new elements.

.6 Block, patch and make air/water tight, if necessary, all openings performed in walls, floors and ceilings, required for the passage of **Mechanical** and **Electrical** elements**.**

.7 In case of excessive demolition resulting from an error or exceeding limits shown on drawings, or accidental damage to parts or elements of the building, make good all parts demolished, or replace them at no extra cost.

.8 Obtain Departmental representative approval before demolishing any structural elements.

.9 All repair materials shall match existing materials; the materials shall be new and shall be compatible with existing materials.

3.4 Openings in Building Envelope

.1 Obtain written permission from Departmental representative **72 hours** before commencing any openings in building envelope.

.2 Make necessary cuttings, holes and penetrations in the existing walls and roof to provide pathways for mechanical/electrical services or special equipment, or for other elements.

.3 When opening existing walls or roofs, cut existing membrane, insulation and vapour barriers with precision before executing holes or penetrations.

.4 After installation of services or other elements, build required curbs on roof and make necessary repairs to the vapour barrier, insulation, and membrane, including flashings, flexible flashings, and caulking to seal well around these elements and ensure their continuity.

.5 Ensure that demolition of exterior walls is executed in a fashion to obtain continuous protection against water infiltration at all times. Repair and refinish as required or as indicated. Ensure at the end of each workday the continuity of the waterproofing and air infiltration and thermal insulation to prevent excessive heat loss and condensation.

.6 Do not perforate steel deck or interior metal liner panels.

.7 Provide watertight safety enclosures if openings in the building envelope shall remain open for construction work.

3.5 Mechanical and Electrical Demolition Work

.1 Undertake necessary security measures before commencing work.

.2 Notify the Departmental representative before interrupting mechanical and electrical services in occupied areas.

.3 Do demolition and demounting of existing mechanical and electrical services as per **Mechanical** and **Electrical** specifications and drawings and in close cooperation with the respective subcontractors.

.4 Temporarily place existing wall thermostats in the ceiling space for walls to be demolished.

.5 Take all ventilation equipment (i.e. convectors) off-line during the demolition work.

.6 Protect against dust with filters diffusers , evacuators and shut-off all ventilation elements (such as convectors) during demolition work.

.7 Remove floor outlets where required, fill and patch with appropriate mortar or grout openings left in the concrete slab.

.8 Remove electrical elements from walls to be demolished.

.9 Remove switches, outlets, lighting fixtures as well as electrical wiring going to the closest junction boxes above the wall to be demolished.

.10 Relocate manual fire alarm stations on adjacent walls.

.11 Perform removing or demounting of electromechanical elements which obstruct the installation of new work with great attention and care, number them and store them outside the work area, if necessary, and reinstall those elements which will remain in place at the end.

.12 See also **Mechanical** and **Electrical**

3.6 Disposal

.1 Dispose of removed materials, except where specified otherwise, in accordance with requirements of **Sections 01 73 00 and 01 74 21**.

3.7 Cleaning

.1 See **Section 01 74 11**.

END OF SECTION

ISSUED FOR TENDER

HAZARDOUS MATERIALS REMEDIATION

Section F2010

DFO Coast Guard R.101524.300
105 McGill Street, Montreal, Quebec

Prepared for:

Public Services and Procurement Canada

800 De La Gauchetière Street West, Suite 7300
Montreal, Quebec H5S 1N6

February 23, 2022

Gesfor Project No.: 1707515

Written for:	**Public Services and Procurement Canada**
Issued on:	**February 23, 2022**
Gesfor Project No.:	**1707515**
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PARTIE 1 – GENERAL CONDITIONS

1.1 GENERAL WORK REQUIREMENTS

1.1.1 In general, the work aims to remove paint containing lead in accordance with the maximum precautions established according to the scope of the work as described in the drawings and specifications designed by the Ministerial Representative, and the volume of debris generated.

1.1.2 Work area:

1º Rooms 305-11 and 305-12 located on the 3rd floor between axes 1-1 and 4, according to the drawings and specifications designed by the Ministerial Representative.

1.1.3 Specifically, work under Lead conditions following maximum precautions consists of:

1º Setting up hoarding walls, building decontamination enclosures for workers, waste and equipment, and establishing negative pressure;

a) Setting up a worker decontamination shower.

2º Removing all lead-containing paint applied to the ceiling of the rooms as described in the drawings by the Ministerial Representative;

a) Follow the sanding method specified by the Ministerial Representative. Water is prohibited inside the work enclosure. If water is mistakenly found inside the enclosure, treat it as ordinary construction waste;

b) Dispose of all sandblasting residue (e.g., : glass, sand) and worker decontamination water as ordinary construction waste.

1.1.4 The Contractor is responsible for providing all personal protective equipment required and for carrying out effective dust control during the removal of lead-containing paints.

1.2 RELATED REQUIREMENTS

1.2.1 All tender documents, in particular the drawings and specifications designed by the Ministerial Representative, the general conditions and the additional general conditions, are added to these sections of the specifications.

1º Refer to the drawings and specifications designed by the Ministerial Representative for the full scope of work and the location of each intervention;

1.2.2 Articles of Section 1.15 “Existing Conditions” of these specifications identify the location and condition of the lead-containing materials that will be disturbed by the work.

1.2.3 The Contractor is responsible for verifying existing conditions, the composition of building materials, including substrates, as well as the presence, location, and quantity of lead-containing materials before submitting a bid;

1º No request for additional costs will be accepted due to poor understanding of existing conditions.

1.2.4 The Contractor must indicate any discrepancies in the bidding documents in writing during the bidding period;

1º No claims due to said discrepancies will be considered during execution of the work.

1.2.5 All workers who have access to the work area must have received the required training, as per the Safety Code for the Construction Industry.

1.3 REFERENCES

1.3.1 CSA-Z180.1-13: *Compressed breathing air and systems*.

1.3.2 Safety Code for the construction industry (CQLR, c. S-2.1, r. 4).

1.3.3 *CSA-Z94.4-11: Selection, use and care of respirators.*

1.3.4 Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST). *Guide des appareils de protection respiratoire utilisés au Québec,* 2002.

1.3.5 Act Respecting Occupational Health and Safety (AROHS), CQLR c. S-2.1.

1.3.6 Regulation respecting occupational health and safety (ROHS), CQLR c S-2.1, 13.

1.3.7 Workplace Hazardous Materials Information System (WHMIS), Material Safety Data Sheets (MSDS);

1.3.8 Regulation respecting hazardous materials (RRHM), CQLR, c. Q-2, r. 32;

1.3.9 Transportation of Dangerous Goods Act, 1992 (S.C. 1992, c. 34) and regulations made under this Act.

1.4 DEFINITIONS

1.4.1 Work area: area where work on and in the presence of lead-containing paint is performed and could disturb the paints.

1.4.2 Occupied area: Any area of the building outside the work area.

1.4.3 Contaminated worksite: Work disturbing lead-containing material that must be performed in accordance with these specifications.

1.4.4 Non-contaminated worksite: Work with no risk of disturbing lead-containing material.

1.4.5 Paint remover: Commercial product used to remove paint from a surface.

1.4.6 Contractor: Private individual or corporate entity contractually responsible for executing the work described in these specifications.

1.4.7 Polyalphaolefin (PAO) Test: A testing method using a solution containing polyalphaolefins as a HEPA filter leak test to determine the integrity of the air exhaust units.

1.4.8 Polyethylene sheeting: Impervious or rip-proof plastic material used to provide a continuous membrane so as to protect the surfaces in the work area from contamination or water damage, and to prevent any contamination of hazardous materials into the occupied areas.

1.4.9 P100 or HEPA (High Efficiency Particulate Arrestance) Filter: A high-efficiency filter capable of filtering particles of 0.3 µm in size at an efficiency rate of at least 99.97%.

1.4.10 Leaching: Technique for extracting soluble products. It consists of slowly passing a liquid through a powdered solid. The leachate, the liquid produced by the operation, can then be processed to extract the dissolved substances.

1.4.11 Lead-containing material: According to the Workplace Hazardous Materials Information System (WHMIS), any product containing 0.1% (1,000 mg/kg) or more of lead.

1.4.12 Tool: Manual equipment or electrical equipment with an adaptor for a HEPA vacuum or equipment with an integrated HEPA vacuum system approved for this type of work.

1.4.13 Lead: Soft, malleable and heavy metal, used especially in paints.

1.4.14 Negative pressure: A reduced pressure in the work area established by extracting air directly from the work area and discharging it outside the work area or to the exterior of the building.

1.4.15 Ministerial Representative: Private individual or corporate entity, or their representative, who mandates a Contractor to perform work under the terms of a contract, or Expert, consultant, engineer, architect, professional in decontamination, or their representative for the management of the work.

1.4.16 Floor drain: Water drain situated at a low point on an inclined floor, covered with a metal or plastic filter grid.

1.4.17 Authorized visitor: The Ministerial Representative and individuals representing any regulatory body.

1.5 NOTIFICATION

1.5.1 Notify the Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST) at least ten (10) days prior to starting work, as per the Safety Code for the construction industry. Provide a copy of the "Notice of Opening a Construction Site" to the Ministerial Representative.

1.5.2 Inform all tradespeople of the presence lead-containing materials as defined in Section 1.15 "Existing Conditions" of these specifications.

1.6 SUBMITTALS

1.6.1 At least five (5) days after the attribution of the At least five (5) days after contract attribution the Contractor must submit the following information:

1º Proof of training and experience for the supervisory team (see Section 1.7 "Worker Supervision" in these specifications);

1.6.2 At least five (5) days before start of work, the Contractor must submit the following documentation to the Ministerial Representative for approval:

1º A copy of all notifications issued (see Section 1.5 "Notification" of these specifications);

2º For each worker having access to the work area, a copy of their training certificate for lead removal as per the requirements of the Safety Code for the construction industry;

3º A copy of each worker's qualitative fit test card proving that the personal respirator assigned to them was successfully verified;

4º A plan for each phase of work detailing the duration of each phase, the number of workers required for each phase, the location of facilities, access

paths to the work area and the dates of inspection phases by the Ministerial Representative (see Section 1.12 “Work Supervision”);

5º Complete technical data sheets of equipment, tools, and products to be used for the work;

6º A document indicating the number of air exhaust units to be used at the worksite to ensure a rate of four air rotations per hour as per the requirements of the Safety Code for the construction industry;

7º The technical report of a structural engineer on the bearing capacity of the floor slabs indicating whether they can support the weight of the equipment and materials stored;

a) The report should include, but not be limited to:

i. Specifications for recommended methods of stacking materials;

ii. Measures to be taken when using problematic equipment for the structure.

8º The emergency response plan including the location of emergency exits in the work area as well as the emergency exits for the building itself;

9º A declaration of site condition identifying existing damages in the work area and in the worksite access areas;

10º If supplied-air-type respiratory protection devices are used, a certificate of compliance dated less than six months for each of them.

1.6.3 The results of any PAO tests performed on the air exhaust units, which must be submitted to the Ministerial Representative before the start of work.

1.6.4 During the work, the Contractor must submit the following to the Ministerial Representative:

1º Any changes made to the scope of work;

a) Any work deemed as additional, as per the drawings and specifications, must be approved by the Ministerial Representative. Quantities must be reviewed with the Ministerial Representative.

2º A weekly update of the work schedule, including phasing and milestone inspection dates;

3º Proof of waste disposal (quantity, transportation, and engineered landfill);

4º Inspection reports from the CNESST.

1.6.5 At the end of the work, the Contractor must submit to the Ministerial Representative a signed statement confirming the work was performed in accordance with this specification and that it is completed, including the repair of any damages not mentioned in the declaration of site condition as well as the location of lead-

containing material that could not be removed for valid reasons before or during the work.

1.7 WORKER SUPERVISION

1.7.1 All members of the supervisory personnel must hold a recognized certificate proving attendance at a lead removal training course (one (1) day minimum duration) acceptable to the Ministerial Representative.

1.7.2 On the worksite, the Contractor must appoint a General Foreman to oversee all aspects of the work, including negotiating changes to the contract and estimating related costs, updating bids and requirements of tender documents, work planning as well as labour and equipment needs, directing communications and coordination with the Ministerial Representative.

1.7.3 The Contractor must also provide a Team Foreman who will be responsible for all aspects of manpower, equipment and work execution on the worksite.

1.7.4 The General Foreman or the Team Foreman must be on the worksite at all times when there is a risk of disturbing lead-containing materials. Failure to comply with this requirement will result in immediate work stoppage at no additional cost to the Ministerial Representative.

1.7.5 Replace supervisory personnel with qualified and approved replacements, within three (3) days of a written request from the Ministerial Representative;

1.8 QUALITY ASSURANCE

1.8.1 The Contractor:

1º Must ensure that the work is performed by licensed, experienced and qualified workers using the methods, procedures, and practices employed in the hazardous materials industry in compliance with the requirements of these specifications;

2º Must adhere to the work schedule established before work start-up;

3º Must ensure that all work in these specifications, including electrical, mechanical, plumbing, carpentry and glazing, must be performed by licensed, experienced and qualified tradespeople;

4º Must coordinate work between all trades in relation to those for decontamination;

5º Is responsible for, among others:

a) Ensuring compliance of the means, construction methods or techniques, procedures, sequences, deadlines, practices or programs and precautions related to safety required for the work in accordance

with the applicable health and safety on construction sites regulations, or any other legislation pertaining to general construction practices;

b) Their own acts and omissions as well as those of the Contractor's subcontractors, agents, employees, or other persons performing the work that are under the Contractor's responsibility.

6º Must verify the load-bearing capacity of the floor slabs so that they support the weight of the equipment and materials stored;

a) Must appoint a structural engineer to write a technical report on the bearing capacity of the slabs.

7º Must perform the work in a way that guarantees that neither lead-containing materials nor wastewater contaminates occupied areas under his responsibility;

8º Must comply with federal, provincial, and local regulations, and in any case of conflict between the aforementioned regulations and these specifications, must apply the more stringent requirements;

a) Work procedures must be performed in compliance with the legislation in effect at the time the work is being performed.

9º During the work, the Contractor must provide all equipment necessary to perform work in the presence of lead properly;

10º Must replace any defective, damaged, or inadequate equipment.

1.8.2 The Ministerial Representative:

1º Has a mandate to supervise lead-containing paint removal work to ensure that it is carried out in accordance with these specifications;

a) Is not mandated to manage the work, whether operational or administrative;

2º May intervene at any time at the request of the Ministerial Representative to judge the quality of the work. Has the right to access the worksite and possesses the necessary competencies to address deficiencies, submit recommendations, and order the Contractor to correct their work to attain compliance with these specifications;

3º Cannot, in any case, be held responsible for the Contractor's actions nor assume the Contractor's responsibilities.

1.9 WORKER PROTECTION

1.9.1 General:

1º Provide instruction to workers before allowing entry to the work area. Instruction must include the use of respirators, protective coveralls, other protective measures, entry to and exit from the work area, and work procedures;

2º Ensure that workers are fully protected at all times when the possibility of disturbance of lead-containing materials exists;

3º Eating, drinking, smoking or chewing gum or tobacco is strictly prohibited, except in clearly marked designated areas outside of the work area.

1.9.2 Respirator:

1º Workers must be trained in respirator use before entering any work area;

2º Provide appropriate respirators for persons who are required to enter the work area;

3º Respirators must meet the standards of the *Guide des appareils de protection respiratoire utilisés au Québec*, published by the IRSST, or by any other organization recognized in Quebec;

a) Provide and use full-facepiece powered air-purifying respirators equipped with a HEPA filter or air-supplied if the sandblasting method is used;

b) Charge batteries and store respirators and tested filters that will be reused on the clean side of the shower room;

c) Once worn in any of the work areas, the filters cannot be removed without being either decontaminated or treated as ordinary construction waste;

d) During sanding work (prescribed by the Ministerial Representative) to remove paint containing lead, follow the recommendations of CSA Z180.1-00 Compressed breathing air and systems.

4º Anyone with a beard, moustache, glasses, or any other element that may impede the seal between the respirator and the face will be prohibited from entering the work area;

5º Verify that the filters used meet the manufacturer's standards;

a) Replace the filters after 16 hours of use or when they are saturated;

i. Once used in the work area, filters from half or full-face respirators cannot be removed from the area before being either cleaned and sealed, or disposed of as ordinary construction waste.

b) Test the compressed breathing air supply system of air-supplied type respirators according to CSA Z180.1-13: Compressed breathing air and systems;

i. Ensure that the system has been tested within the last six (6) months.

1.9.3 Other personal protective equipment:

1º Supply the workers with protective coveralls;

a) Once used, treat as lead waste.

2º Supply the workers with safety helmets, protective shoes, safety glasses, appropriate single-use work gloves (nitrile) and any other personal protective equipment required by the Safety Code for the construction industry or by the bid documents;

3º Clean reusable personal protective equipment with a HEPA vacuum before leaving the work area.

1.9.4 Work area entry procedure:

1º In the clean changing room:

a) Take off your street clothes and shoes, and put away all your personal effects (street clothes, towels, etc.);

b) Put on protective coveralls;

c) Put on the respirator with a new or verified filter and check its adjustment by testing negative and positive pressure;

d) Pull the hood of the protective coveralls over the respirator straps;

e) Make sure the elastic cuffs at the end of the protective coverall legs are fitted over the protective shoes. Use duct tape as needed;

f) Put on the work gloves, ensuring that the sleeves of the protective coveralls cover their cuffs. Use duct tape as needed;

g) Put on the safety helmet and all other required personal protective equipment.

1.9.5 Work area exit procedure:

1º Before leaving the contaminated work area, remove gross contamination from the protective clothing using a HEPA vacuum or by wet wiping;

2º Proceed to the contaminated changing room and remove all contaminated personal protective equipment, with the exception of the respirator and the safety helmet;

a) Wash reusable equipment;

i. Take them directly out of the work area or place them in bags and store them in the contaminated changing room.

b) Dispose of disposable equipment as ordinary construction waste.

3º While still wearing the respirator and safety helmet, proceed to the showers;

4º In the shower, remove and rinse the safety helmet, rinse the outside of the respirator, then remove the latter, wash your body, head and hair and rinse the inside of the mask;

5º On the clean side of the shower, remove the mask filter for verification;

a) If the filter is reusable, put it back in the mask, clean the filter compartment and seal it;

b) If the filters are to be discarded, place it in the waste container provided for this purpose.

c) Enter the clean changing room;

d) Dry off and put on your street clothes;

e) Store the respiratory protective device and the safety helmet in the place provided for this purpose.

1.10 VISITOR PROTECTION

1.10.1 Provide the following personal protective equipment to authorized visitors at no cost:

1º Protective coveralls;

a) Once used, treat as lead waste.

2º Approved respirators appropriate for the levels of risk;

3º Any other equipment required by the Safety Code for the construction industry or by the bid documents.

1.10.2 Ensure authorized visitors have received the required training on the use of protective coveralls and respirators, as well as the procedures for entry into and exit from the work area.

1.11 PROTECTION IN CASE OF EMERGENCY

1.11.1 The Contractor must always have available on the worksite two (2) regulatory respirators and two regulatory (2) protective coveralls for any external emergency responders requiring access to the work area.

1.11.2 In case of incident or accident on the worksite requiring emergency response : (firefighter, paramedic, police), the Contractor must immediately suspend any work in the presence of hazardous materials and implement all measures necessary to reduce the concentration of lead dust. An access path must be cleared between the area of the emergency and the nearest exit.

1.11.3 Once the incident or accident has been resolved, the Contractor must clean all the areas situated outside the work area that were used by emergency responders.

1.12 WORKSITE SUPERVISION

1.12.1 The Ministerial Representative is authorized to:

1º Ensure compliance with procedures as well as the completion of work and the cleanliness of the work area;

2º Stop work when lead contamination has occurred or is likely to occur;

a) Contamination is particularly possible due to the inefficiency of air exhaust units, inadequate wetting of materials, lack of sealing of an enclosure and water leaks.

1.12.2 The Ministerial Representative is periodically present on the site from the start of the work until the end of the cleaning.

1.12.3 The Ministerial Representative will conduct daily inspections of the work area to ensure the Contractor complies with the requirements of these specifications and current legislation;

1º Any deviation from these requirements that have not been approved in writing may result in work stoppage;

2º If the work area is not compliant with these requirements, the costs for any additional work ordered by the Ministerial Representative to meet the requirements (including additional workforce and equipment, if necessary) will be borne by the Contractor;

3º Costs incurred for additional inspections in the work area due to deficiencies by the Contractor with regards to quality, safety or schedule will be charged to the Contractor under a Change Order;

4º In the case of a leak, the occupied areas will be considered contaminated until the Ministerial Representative performs a visual inspection and deems the work satisfactory.

1.12.4 In addition to the daily inspections, the Ministerial Representative carries out the milestone inspections listed below. These are carried out at the Ministerial Representative's expense and must be coordinated by the Contractor with the Ministerial Representative at least 48 hours in advance:

1º Milestone Inspection A – Clean Site Preparation: Inspection of the preparations preceding the start of the preparations of the perimeter of the contaminated site;

2º Milestone Inspection B – Contaminated Perimeter Preparation: Inspection of work area perimeter preparations;

3º Milestone Inspection C – Prior to Removing Lead Paint: Inspection of the work area (preparations for the contaminated site) prior to the start of the work;

4º Milestone Inspection D – Visual acceptance of the cleaning work: Inspection of the cleaning of the work area after the work;

5º Milestone Inspection E – Dismantling: Inspection following the dismantling of the work area and the waste and equipment decontamination enclosure, but preceding the dismantling of the worker decontamination enclosure.

1.13 WASTE MANAGEMENT

1.13.1 Use waste containers to enclose waste.

1.13.2 Use a bin to store waste containers on the worksite before transporting them to a engineered landfill that accepts this type of waste;

1º Move all waste to the ground floor before transferring it to the bin;

2º In the event that the Contractor wants to use a waste chute to transport the waste to the bin, the Contractor must obtain prior approval from the Ministerial Representative and a CNESST inspector;

a) The Ministerial Representative reserves the right to refuse the use of a waste chute if they deem it to be improperly installed or maintained throughout the duration of work;

b) The waste chute must be impervious and under negative pressure at all times to prevent dust dispersion.

1.13.3 Coordinate with the Ministerial Representative:

1º The location of the waste bin;

2º Any waste transport 24 hours in advance.

1.13.4 The waste bin must be:

1º Collected and dropped off at pre-approved times, without disturbing the operations of surrounding buildings;

2º Kept covered and closed at all times when stored in proximity to the building where work is being performed. Keep these areas clean at all times;

3º Placed so as not to damage the ground surface (e.g., grass, pavement).

1.13.5 After each waste transfer, clean the paths travelled, as well as the loading areas.

1.13.6 For each load of waste removed from the worksite, fill out and provide the Ministerial Representative with a waste transport or disposal document.

1.13.7 Once the ordinary construction waste has been unloaded in the engineered landfill, submit the transmission slip for the site in question to the Ministerial Representative.

1.14 WORK SCHEDULE

1.14.1 Execute the work according to the planned schedule, in compliance with all the requirements of these specifications.

1.14.2 Submit in writing any changes to the initial work schedule to the Ministerial Representative for approval.

1.15 EXISTING CONDITIONS

1.15.1 Paint containing lead is applied to the concrete ceiling in rooms 305-11 and 305-12;

1º The paint is non-leachable. It can therefore be treated as ordinary construction waste and sent to an engineered landfill;

2º The concrete ceiling of these premises is confined above suspended acoustic ceiling tiles.

1.15.2 All landings, stairs, exits as well as emergency equipment must be accessible at all times during the work.

1.15.3 The following equipment can be found in the work area and must be protected:

1º Lights and lighting fixtures;

2º Emergency lights;

3º Exit indicator panels;

4º Loudspeakers;

5º Light switches;

6º Plates for electrical sockets on walls or ceilings;

7º Heating systems;

8º Other equipment affixed to the walls and ceilings.

PARTIE 2 – PRODUCTS AND FACILITIES

2.1 EQUIPMENT AND MATERIALS

2.1.1 The equipment and materials brought to the worksite must be clean and in good condition. It must be free of debris and dust. Disposable (single use) materials and equipment must be new.

2.1.2 Warning signs: Such signs shall read as follows (the size of the lettering is identified in parentheses):

WARNING – RISK OF LEAD EXPOSURE – DANGER (25 mm)

AUTHORIZED PERSONNEL ONLY (19 mm)

PROTECTIVE EQUIPMENT COMPULSORY (19 mm)

INHALING LEAD DUST MAY BE SERIOUSLY HARMFUL TO YOUR HEALTH (7 mm)

2.1.3 HEPA vacuum: Vacuum equipped with a HEPA filter.

2.1.4 Protective coveralls: Single-use coveralls made of polyolefin, a material that is resistant to the penetration of lead dust. It must cover the whole body, excluding the face, hands and feet, with closures at the wrists, ankles and neck and an attached hood to protect hair.

2.1.5 Discharge ducting: 300 mm (12 in.) diameter flexible tube with metal reinforcement.

2.1.6 Waste container: Container which conforms to federal, provincial, territorial and municipal regulations. Dispose of waste in 0.15-mm (6-mil) sealed bags that have been double-bagged, or in sealed containers. Identify waste containers using appropriate warning labels.

2.1.7 Air exhaust unit: Portable air handling system that extracts air directly from the work area and discharges it outside the building. It must be equipped with:

1º a prefilter and a HEPA filter. Air must pass through the HEPA filter before discharge;

2º a differential pressure gauge to monitor filter loading;

3º an auto shutoff and warning system for filter failure;

4º separate clamps to retain the HEPA filter in place allowing separate replacement of the filter and the pre-filter.

2.1.8 Pressure gauge: Instrument used to measure the differential pressure between the work area and the occupied area. It is generally measured in pascals (Pa).

2.1.9 Temporary electrical panel: Transportable electrical panel, with the following characteristics:

1º The panel must be equipped with all the necessary accessories, in particular various Ground Fault Circuit Interrupters (GFCIs), including a main one, and electrical outlets equipped with a GFCI;

a) Electrical outlets must be equipped with a ground fault interrupt indicator light, a test button to ensure proper operation of the GFCI and a circuit reset button;

b) There must be a sufficient number of power outlets to use all the electrical equipment and lighting equipment necessary to carry out the work;

c) Power outlet GFCIs must have a minimum ground fault protection of 5 mA.

2º The panel must be connected to a main circuit breaker in the building;

3º The main GFCI of the temporary electrical panel as well as the main circuit breaker of the building must be of sufficient capacity to supply all electrical and lighting equipment used in the work area;

4º The panel openings must be protected with either polyethylene sheeting or with a cover (for the electrical outlets) in order to avoid any humidity or dust infiltration.

2.1.10 Impervious polyethylene sheeting: Transparent membrane, impervious to air and water, in standard sheet size, 0.15 mm (6 mil) minimum thickness, in order to minimize the number of joints. New materials only.

2.1.11 Rip-proof polyethylene sheeting: Orange, closely woven, rip-proof membrane, with a minimum thickness of 0.15 mm (6 mil) and standard sheet size to minimize the number of joints. New materials only.

2.1.12 Curtain door: Closing device allowing the passage between two areas with a minimum displacement of air. It consists of two (2) panels that overlap at the centre.

2.2 WORK AREA PERIMETER

2.2.1 Separating a work area from an occupied area or another work area, hoarding walls must be constructed where required as follows:

1º Type A – A partition made of wooden or metal studs with continuous sill and top plates, covered with one (1) layer of impervious polyethylene sheeting and one (1) layer of rip-proof polyethylene sheeting on the side exposed to the work area;

2º Type B – Ceiling space sealing partition made of wooden or metal studs with continuous sill and top plates, covered with one (1) layer of impervious polyethylene sheeting and one (1) layer of rip-proof polyethylene sheeting on the side exposed to the work area; Anchor the frame of these partition walls beneath the ceiling slab and extend downward to the upper part of the false ceiling or of the previously built perimeter partition walls. Construct this ceiling space sealing partition wall so that it remains intact when the perimeter partition wall below is removed.

2.3 WORKER DECONTAMINATION ENCLOSURE

2.3.1 Install the worker decontamination enclosure at a location approved by the Ministerial Representative.

2.3.2 The worker decontamination enclosure is comprised of three (3) connected rooms: equipment and access room that leads to the work area, a shower room and a clean changing room. The rooms, occupied areas, and work area must be separated by curtain doors.

1º Contaminated changing room: The room between the work area and the shower room is used to store protective equipment that will be reused in the work area. The main requirements of this room are as follows:

a) Install a waste container, mainly for protective coveralls or equipment that cannot be reused;

b) Provide storage facilities for any personal protective equipment to be reused;

c) Equip the room with individual lockers for workers to dry and store their work clothes. The storage area of each locker must be at least 0.14 m^3 (5 ft^3), and there must be a clearance of at least 600 mm (2 ft) in front of each row of lockers;

d) Minimum surface area of 9.5 m^2 (100 ft^2);

e) Minimum lighting level of 250 lux;

f) Minimum room temperature of 20 °C.

2º Shower room: The room located between the clean changing room and the contaminated changing room. The main requirements of this room are as follows:

a) A separate shower room must be installed for each sex;

b) A ratio of at least one (1) shower for every six (6) workers of each sex;

c) A constant supply of hot and cold water, controllable at each shower; The hot water supply must be sufficient to guarantee all workers a complete shower, allowing them to decontaminate properly; the temperature must be able to reach a minimum of 40 °C (maximum 50 °C);

d) A water supply with individual hot and cold shutoff valves located on the clean side of shower room. Connect the showers to these valves;

e) Use rigid piping with watertight connections for the water supply and drains;

f) Cover a drip pan that has been sealed on all sides of the lower part of the shower stall with a duckboard. Empty the drip pan every day with a pump sufficient for the volume of waste shower water generated. Route wastewater from the shower to watertight containers to be tested before disposal;

g) Provide a ground fault protected power switch for the pump on both sides of the shower, or provide an automatic timer for the shutoff;

h) Supply soap, clean towels and appropriate waste containers for the disposal of used respirator filters;

i) Install, on the clean side of the shower room, shelves for respirator storage, and outlets powered by electricity from the ground fault system to recharge batteries when required;

j) Minimum lighting level of 250 lux;

k) Minimum room temperature of 20 °C.

3º Clean Changing Room: The room between the shower room and the occupied areas. The main requirements of this room are as follows:

a) Equip the room with individual lockers for workers to dry and store their work clothes. The storage area of each locker must be at least 0.14 m^3 (5 ft^3), and there must be a clearance of at least 600 mm (2 ft) in front of each row of lockers;

b) Supply potable water;

c) Install a wood door in a wood frame. The door must have a locking passage set. Provide three (3) keys to the Ministerial Representative;

d) If necessary, install the water heater for the showers in this room;

e) Minimum lighting level of 250 lux;

f) Minimum room temperature of 20 °C;

g) Minimum area of 9.5 m² (100 ft²) or 1 m² (10 ft²) per worker (whichever is greater).

2.4 WASTE AND EQUIPMENT DECONTAMINATION ENCLOSURE

2.4.1 The waste and equipment decontamination enclosure is comprised of three (3) connected rooms: a cleaning room, a storage room, and a transfer room. The purpose of this set up is to provide a means to decontaminate waste containers, materials, vacuums, sprayers, scaffolding, and various other tools and materials required in the work area. The rooms, occupied areas, and work area must be separated by curtain doors.

1º Cleaning room: The room located between the work area and the storage room. It must be of sufficient size to allow proper washing of equipment and waste containers. The wash wastewater should be treated as lead waste until leaching results are obtained;

2º Storage room: The room between the cleaning room and the transfer room. Its surface area must be sufficient to allow waste to be placed in containers and to accommodate at least two (2) barrels of waste or the largest items of equipment used;

3º Transfer room: The room between the storage room and the occupied area, acting as an air lock for the transfer of waste. At the doorway to the occupied area, provide and install a vented wood door in wood frame. The door must have a locking passage set. Provide three (3) keys to the Ministerial Representative.

2.5 CONSTRUCTION OF DECONTAMINATION ENCLOSURES

2.5.1 Protect the floors as follows:

1º Prior to erecting the wall frame, apply one (1) layer of rip-proof polyethylene sheeting over the floor that will be covered by the decontamination enclosure;

2º Once the wall structure is constructed, raise the rip-proof polyethylene sheeting 600 mm (24 in.) high of over the interior walls of the enclosure;

3º Cover the floor of the equipment and work area access room, storage room and transfer room, as well as the floor of the clean changing room with rip-proof polyethylene sheeting, on which the polyethylene sheeting of the walls will overlap and be sealed;

4º In the shower room, install a 1,000 mm (40 in.) wide x 2,700 mm (108 in.) long x 150 mm (6 in.) deep sealed drip pan below the shower stall, extending 900 mm (36 in.) into the shower room on each side of the shower stall. This drip pan must be able to hold all the waste shower water generated. Install a duckboard walking surface over the drip pan on both sides of the shower stall.

2.5.2 Construct the perimeter walls as follows:

1º Wood frame made of 38 mm x 89 mm (2 in. x 4 in.) wood studs every 400 mm (16 in.) with continuous sill and top plates on the upper portion;

2º Cover the lower portion of this interior frame with plywood panels 13 mm (0.5 in.) thick, to a height of 1,200 mm (48 in.);

3º Cover the interior of the wall with one (1) layer of polyethylene sheeting;

4º For the perimeter walls exposed to the occupied areas, install one (1) layer of polyethylene sheeting directly over the framing, and cover with one (1) painted 13 mm (0.5 in.) thick plywood paneling.

2.5.3 Construct the interior walls to separate the rooms of the decontamination enclosures as follows:

1º Wood frame made of 38 mm x 89 mm (2 in. x 4 in.) studs every 600 mm (24 in.) with continuous sill and top plates on the upper portion;

2º Cover the lower 1,200 mm (48 in.) of the interior of this frame with 13 mm (0.5 in.) thick plywood paneling;

3º Cover the plywood and frame with one (1) layer of polyethylene sheeting.

2.5.4 Construct the ceilings as follows:

1º The size of the joists is to be determined by the span. For spans up to 3.3 m (10 ft), use joists of at least 38 mm x 150 mm (2 in. x 6 in.) every 400 mm (16 in.) with a continuous header of 38 mm x 150 mm (2 in. x 6 in.);

2º Cover the joists with one (1) layer of 19 mm (0.75 in.) plywood paneling and caulk and tape the joints. Cover the plywood with two (2) layers of rip-proof polyethylene sheeting, one of which extends continuously over the rip-proof polyethylene sheeting on the perimeter walls;

3º Put one (1) layer of polyethylene sheeting over the joists to cover the sides;

4º The minimum interior clearance height must be 2.0 m (6.6 ft) from the floor to the underside of the joists.

2.5.5 Construct the curtain doors as follows:

1º For each door between the rooms or between the enclosures and the work area, install two (2) overlapping flaps over the full width and height of the opening;

2º Each flap must be constructed of two (2) layers of polyethylene sheeting with all edges tape-reinforced. Use wood strapping to securely fasten the flaps to the alternating jambs and to the joists;

3º Attach a weight to the bottom edge of each door flap to ensure that it closes spontaneously;

4º Provide direction arrows on the flaps to indicate the openings.

PARTIE 3 – EXECUTION

3.1 SITE PREPARATION

3.1.1 Clean all surfaces of the work area using a HEPA vacuum or a damp cloth while carefully removing all lead-containing materials that could have spread around the work area.

3.2 CLEAN SITE PREPARATION

3.2.1 Conduct an inspection of existing damage before the start of work and submit a report of this damage to the Ministerial Representative.

3.2.2 Remove from the work area all furniture, shelving and any other material (including stored material), equipment and tools that can be moved without disturbing the lead-containing paint.

3.2.3 Clean and protect any furniture or mechanical or electrical equipment that must remain in the work area.

3.2.4 Coordinate with the Ministerial Representative the shut down of the HVAC, electrical and sprinkler systems;

1º Isolate the HVAC system that services the work area from the rest of the building to prevent lead dust from dispersing into occupied areas during the work. Seal all connections and joints of the air return ducts that run through the work area;

2º Properly identify all systems (return grilles, mixing boxes, supply grilles, dampers, etc.) that cannot be deactivated and protect them with a plywood panel or a metal cover, sealed with tape.

3.2.5 Coordinate with the Ministerial Representative the location of the worker and waste decontamination enclosures. Proceed to their construction, as specified in Section 2.5 “Construction of Decontamination Enclosures” of these specifications.

3.2.6 Seal all the floor surfaces in the work area with one (1) layer of rip-proof polyethylene sheeting and one (1) layer of impervious polyethylene sheeting, independently sealed with duct tape to prevent water leakage and contamination of finishes. Pull the polyethylene sheeting a minimum of 300 mm (12 in.) up the walls.

3.2.7 Erect Type A hoarding walls between the work area and the occupied area, as indicated in Sections 2.2 “Work Area Perimeter” and 2.3 “Worker Decontamination Enclosure” of these specifications.

3.2.8 Seal all the openings facing the work area and located below the ceiling, including windows and doors, using one (1) layer of impervious polyethylene sheeting, one (1) layer of rip-proof polyethylene sheeting and adhesive tape.

3.2.9 Protect with one (1) layer of rip-proof polyethylene sheeting and one (1) layer of impervious polyethylene sheeting sealed independently, the walls, partitions, ceiling, electrical panels, etc., which are not to be removed during the work period.

3.2.10 Keep emergency exits within the work area accessible or establish alternate exits, as required by fire department officials or local authorities;

1º Set up, as needed, extra exits in the occupied areas.

2º Post emergency exit signs that clearly indicate the directions to follow for emergency evacuation;

3º Seal the emergency exit door, but in such a way as to not to prevent its use during evacuation.

3.2.11 Provide battery-powered emergency lighting for:

1º lighting the work area upon loss of power to the temporary electrical panel;

2º lighting exit routes for transporting waste through the work area.

3.2.12 Light all emergency exits for workers in the work area.

3.2.13 Provide one (1) fire extinguisher at each emergency exit and in the decontamination enclosures.

3.2.14 Install a fire extinguisher near the exits of the work area that has a surface area of 500 m² (5,380 ft²) or less and an additional portable extinguisher for every additional 500 m² (5,380 ft²).

3.2.15 Protect extinguishers with one (1) layer of impervious polyethylene sheeting and one (1) layer of rip-proof polyethylene sheeting, in a manner that does not impede their use in case of fire.

3.2.16 Establish negative pressure in the work area as follows:

1º Provide a sufficient number of air exhaust units to maintain, at all times, a rate of four (4) air changes per hour and a pressure differential of 1 Pa to 4 Pa, as stipulated by the Safety Code for the construction industry;

2º Evenly distribute the air exhaust units throughout work area;

3º Place the air exhaust units as far away as possible from the decontamination enclosures;

4º If necessary, set up weighted hatches made of rip-proof polyethylene sheeting on the perimeter walls to create a source of make-up air;

5º Operate air exhaust units continuously from the completion of clean site preparation until the end of dismantling of the worksite;

6º Replace the prefilters frequently to maintain the flow rate of the air exhaust units;

7º Replace the HEPA filter as required to maintain the flow rate and the integrity of the air exhaust units;

8º Provide additional air exhaust units if the pressure differential is insufficient or at the request of the Ministerial Representative;

9º Prior to the start of work, all air exhaust units must be tested by an independent firm to verify their effectiveness. This must be done whether the air is discharged inside or outside the building;

a) A PAO test must be conducted on each air exhaust unit directly on the worksite.

3.2.17 Control and maintain negative air pressure in the work area:

1º Install pressure differential gauges at locations approved by the Ministerial Representative. Collaborate with the Ministerial Representative to determine when the differential pressure data will be collected;

2º Record the readings in a journal twice (2) per day for the duration of the work on the contaminated worksite;

3º Maintain a minimum differential pressure required by the Safety Code for construction industry at the pressure gauge installed for the worksite;

4º Stop work and take corrective action when the pressure differential is below the 5 Pa threshold. Immediately notify the Ministerial Representative.

3.2.18 Install a temporary electrical panel equipped with GFCIs for each 500 m^2 (5,380 ft^2) of work area. All electrical apparatus must be powered by a GFCI system.

3.2.19 Provide safe and effective temporary lighting in the work area with a power of 550 lux or lighting that is acceptable according to the Ministerial Representative.

3.2.20 Post a warning sign at all curtain doors leading directly into the work area (refer to Article 2.1.2 of these specifications).

3.2.21 Notify the Ministerial Representative within the agreed-upon time prior to Milestone Inspection A (Clean Site Preparation) (see Article 1.12.4 of these specifications).

1º Obtain their written approval for this Milestone Inspection before continuing work.

3.3 CONTAMINATED PERIMETER PREPARATION (IN THE CEILING SPACE)

3.3.1 Remove only the number of ceiling tiles necessary to access the ceiling space along the perimeter walls of the work area.

1º Construct Type B partition walls in the ceiling space;

2º Cover all existing walls adjacent to the occupied areas with one (1) layer of impervious polyethylene sheeting and one (1) layer of rip-proof polyethylene sheeting;

3º Treat the ceiling tiles as waste or clean and reinstall them.

3.3.2 Notify the Ministerial Representative within the agreed-upon time prior to Milestone Inspection B (Contaminated Perimeter Preparation) (see Article 1.12.4 of these specifications).

1º Obtain written approval from the Decontamination Professional for this milestone before proceeding.

3.4 CONTAMINATED SITE PREPARATION

3.4.1 Before removing the light fixtures and other electrical installations affixed to the ceiling or walls of the work area, have all the systems that remain in function labelled in red by a licensed electrician.

3.4.2 Remove the junction boxes affixed to the ceilings in the work area and return the power supply cables to the main junction box before protecting it.

3.4.3 In the work area, temporarily support all electrical and mechanical services, and any other component supported by the ceiling that must remain functional or in place.

3.4.4 Protect all pneumatic controls and lines inside the work area with one (1) layer of impervious polyethylene sheeting and one (1) layer of rip-proof polyethylene sheeting.

3.4.5 Using one (1) layer of impervious polyethylene sheeting and one (1) layer of rip-proof polyethylene sheeting, protect systems and equipment that cannot be removed such as cables, loudspeakers, fire systems, smoke and heat detectors, alarms, and thermostats.

3.4.6 Seal openings in the slab, ventilation ducts and in walls when they are exposed after the removal of the ceiling.

3.4.7 Clean all surfaces of the work area using a HEPA vacuum or a damp cloth while carefully removing all lead-containing materials that could have spread around the work area.

3.4.8 Notify the Ministerial Representative within the agreed-upon time prior to Milestone Inspection C (Prior to removing lead paint) (see Article 1.12.4 of these specifications).

1º Obtain written approval for this milestone from the Decontamination Professional before continuing work.

3.5 MAINTENANCE OF ENCLOSURES

3.5.1 Keep the work area and decontamination enclosures clean and tidy.

3.5.2 Ensure that the polyethylene sheeting on the walls, partitions, floors, and ceilings is properly sealed. Repair damaged polyethylene sheeting and correct deficiencies as soon as they are discovered.

3.5.3 Inspect the enclosures at the beginning and end of each work shift. This inspection must be performed by the General Foreman or the Team Foreman.

3.5.4 Inspect the air exhaust units, including air exhaust ducts, at the beginning and end of each shift. Replace the filters when the air circulation rate falls to 70% of the maximum rate. Immediately replace defective devices.

3.5.5 Clean the work area, the decontamination enclosures as well as each access to the worksite with a damp cloth or a HEPA vacuum.

3.6 WORK UNDER LEAD CONDITIONS

3.6.1 Workers must wear proper personal protective equipment, including a respirator and coveralls, at all times.

3.6.2 Execute the work thoroughly at the required locations using the proper tools, while referring to Section 1.1 « General Work requirement » of these specifications, avoiding as much as possible the release of dust into the air.

3.6.3 Remove, as needed, any obstructions, such as ventilation ducts or equipment, in order to access the lead-containing materials to be removed.

1º Clean the equipment before reinstalling it at the end of work.

3.6.4 Remove the paint by sandblasting.

3.6.5 Cleaning of the floor (polyethylene sheeting) and walls:

1º If necessary, scrape off all loosened paint containing lead;

a) Do not use water. If it comes into contact with the lead flakes, it must be disposed of as lead waste.

2º Clean all surfaces.

3.6.6 When work under Lead conditions is complete:

1º Collect any sanding residue used to remove the lead, as well as any other dirt present in the work area, and place them in sealed bags;

2º Collect wastewater from worker decontamination showers in watertight containers;

3º Clean all surfaces (building, enclosures) using a HEPA filter vacuum. Be sure to remove all visible residue. Finish off the cleaning by passing a damp cloth over all surfaces.

3.6.7 Handling of waste and materials:

1º Pack, transport, then discard as ordinary construction waste the debris generated by work under Lead conditions. Place all waste in sealed waste containers;

a) Place all waste contained in waste bags that is likely to puncture the bags in rigid containers such as drums (plastic, metal or cardboard).

2º Remove waste containers (bags or drums), equipment, and any other materials from the work areas by passing through the decontamination enclosure as follows:

a) Prior to entering the cleaning room of the decontamination enclosure, the first worker, who was wearing protective equipment in the work area, removes any trace of visible contamination from its surface before leaving the work area;

b) The first worker then carries the item into the cleaning room and cleans it using a damp sponge prior to passing the item through the curtain door to a second worker in the storage room. The second worker is also fully protected with respirator and protective coveralls and may only leave the waste decontamination enclosure via the work area;

c) The second worker places the item into a second bag (double bagging) or drum and then seals it. Without entering the transfer room, the second worker passes the container through the curtain door into the transfer room;

d) A third worker enters the transfer room. The third worker must never enter the storage room. The third worker picks up the container and transports it to the waste bin.

3.6.8 Cleaning of the Work Area:

1º Once all waste has been collected and evacuated from the work area, clean all surfaces that were exposed to lead dust using a HEPA vacuum and a wet cloth;

2º Clean all equipment used during the work and dispose of them in a waste container.

3.6.9 Transportation of all materials and waste:

1º Equip workers with full personal protective equipment and all the tools required to properly clean up lead debris that could spill from the waste containers if a rip occurs.

3.7 HANDLING OF DEBRIS

3.7.1 The waste bins must:

1º Be placed and picked up during pre-approved hours and without disturbing the operations of surrounding buildings;

2º Be placed in areas designated by the Ministerial Representative;

3º Be kept covered and closed at all times when stored in proximity to the building. Keep these areas clean at all times.

3.7.2 After each waste transfer, clean the paths travelled, as well as the loading areas.

3.7.3 Bring the waste generated by the work to an engineered landfill that accepts such waste materials. Provide the Ministerial Representative or their representative with the waste dump receipts.

3.7.4 Dispose of waste according to the requirements of the Ministerial Representative.

3.7.5 For each load leaving the worksite, provide the Ministerial Representative or their representative with transportation and/or disposal documents containing all the required information as described in the Transportation of Dangerous Goods Act.

3.8 DISMANTLING THE WORKSITE

3.8.1 Keep the perimeter of the work area and the worker decontamination enclosure sealed until the Ministerial Representative provides written approval of Milestone Inspection D (Visual Acceptance of Cleaning).

3.8.2 The air exhaust units should remain in operation throughout the dismantling.

3.8.3 Wear a full-facepiece powered air-purifying respirator equipped with a HEPA filter, and protective coveralls for the duration of the dismantling work.

3.8.4 In the work area and the waste and equipment decontamination enclosure, remove contaminated polyethylene sheeting and duct tape while taking care not to damage

the underlying finishes. Roll the polyethylene sheets from the partitions toward the centre of the work area;

1º Remove the first layer of polyethylene sheeting from the surfaces that are protected by two (2) layers and cut the bottom layer to expose the electric baseboard heaters, windows, furniture, shelves, and any other horizontal surface that may be contaminated by falling lead-containing materials. Remove the second layer of polyethylene sheeting and immediately clean the dust or debris using a HEPA vacuum.

3.8.5 Place the polyethylene sheeting, duct tape, cleaning material, protective coveralls, and any other contaminated waste into the waste containers.

3.8.6 Dismantle the structure of the perimeter partitions of the work area and the waste and equipment decontamination enclosure.

3.8.7 Remove temporary lighting, the temporary electrical panel with GFCI and air exhaust units.

3.8.8 Notify the Ministerial Representative within the prescribed time prior to requiring Milestone Inspection E (Dismantling Inspection).

1º Obtain written approval of this milestone from the Decontamination Professional before proceeding.

3.8.9 Dismantle the worker decontamination enclosure using the same method detailed above.

3.8.10 Dampen the areas that were located under these facilities and clean with a HEPA vacuum.

3.9 RE-ESTABLISHMENT OF SYSTEMS AND EQUIPMENT

3.9.1 At the completion of work, repair all damage not identified in the pre-work visit.

3.9.2 Put back equipment, furniture, tools as well as any other material removed at the beginning of work.

3.9.3 Restart all systems that were shut down for the duration of the work.

END OF SPECIFICATIONS

LE GROUPE GESFOR POIRIER, PINCHIN

DEFINING Consulting Engineering

FOR TENDER

Moderate Risk Asbestos Removal Procedure

DFO Coast Guard R.101524.300-

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1.0 GENERAL WORK REQUIREMENTS

- The work consists of removing asbestos-containing heat insulation from irregular piping sections (elbows) in the work area, i.e. rooms 305-11 and 305-12 on the 3rd floor between axes 1-1 and 5, according to the drawings and specs from the Ministerial Representative.

- Heat insulation will need to be removed using the glove bag method from 8 convectors, each with 2 connections, for a total of 16.

2.0 GENERAL REQUIREMENTSS

- The purpose of this section of specifications is to remove and dispose of all insulation that contain asbestos cover piping sections.

- During the work that will be conducted according to Medium Risk asbestos procedure, provide all the equipment necessary to conduct the work (as prescribed in the safety code for construction work).

- Provide the services of a General Foreman authorized to supervise all aspects of the work. The Contractor must also provide a Team Foreman who will be responsible for all aspects of manpower, equipment and production

- All workers who have access to the Asbestos Abatement Work Area must have received the necessary training on asbestos abatement work

- Coordinate, with the Owner, the shutdown, if possible, and re-establishment of the heating, ventilation and air-conditioning (HVAC) systems, as required for this type of work.

- Coordinate with the Owner the shutdown of all all electrical, telecommunication, and fire alarm systems, etc., as necessary.

- Conduct the work in a manner to ensure that, at all times, no airborne asbestos fibres, contaminated waste or water leaks contaminate the areas adjacent to the Asbestos Remediation Work Area under the Contractor’s responsibility.

- Ensure that the work procedure, when it is applied, complies with all federal, provincial and local requirements in effect.

- Provide adequate respiratory protection for workers, as specified by the IRSST in its *Guide des appareils de protection respiratoire utilisés au Québec*, or by any other organization approved by the Commission des normes, de l’équité, de la santé et de la sécurité du travail du Québec (CNESST).

- Provide Authorized Visitors in the Asbestos Abatement/Mould Asbestos Work Area with protective coveralls and respirators approved for this type of work .

3.0 EXISTING CONDITIONS

- Cementitious pulp insulation found on irregular sections (elbows) of piping contains chrysotile asbestos.

4.0 EQUIPMENT AND MATERIALS

- HEPA Vacuum: Vacuum equipped with a HEPA filter and all the necessary fittings, tools and attachments.
- Protective Coveralls: Single-use, full-body clothing made of polyolefin, a material that does not permit penetration of asbestos spores, with a hood to protect hair.
- Waste Bin: Impermeable container for disposing of worksite waste. Asbestos waste bins must be labelled according to the Safety Code for the construction industry and be comprised of one of the following:
    - Two (2) 0.15 mm (6 mil) sealable polyethylene bags, inserted one inside the other;

      OR
    - One (1) 0.15 mm (6 mil) sealable polyethylene bag, placed inside a rigid sealable container of sufficient strength (e.g., fibre or metal barrel) to prevent perforation of the container during filling, transportation and disposal.
- Impermeable Polyethylene Sheeting: Must have a minimum thickness of 0.15 mm (6 mil) and a standard width (sheet) to minimize joints. Use new materials only.
- Rip-Proof Polyethylene Sheet: Polyethylene made with a 0.13 mm (5 mil) thick fabric closely woven between two (2) layers of polylaminate with a minimum thickness of 0.04 mm (1.5 mil) each, in sheets large enough to minimize the number of joints on the worksite.
- Sealing Agent (encapsulating product): penetrating and impermeable water- or silicon-based spray-applied coating that traps the fibres inside a product or substrate. Use a red pigment agent.
- Respiratory Protection Equipment: For Moderate Risk Asbestos work, half-mask non-powered air-purifying respirator with P100 filters.
- HEPA Vacuum: Vacuum equipped with a HEPA filter and all the necessary fittings, tools and attachments.
- Protective Coveralls: Single-use full-body clothing made of polyolefin, a material that does not permit penetration of fibres, with a hood to protect hair.
- HEPA or P100 Filter: A high-efficiency filter capable of filtering particles of 0.3 µm in size at an efficiency rate of at least 99.97%.
- Sprayer: Garden-type, airless, portable manual sprayer, capable of producing a fine spray. The flow rate must be adjusted for the work.
- Glove Bag: Prefabricated glove bag that conforms to the following specifications:
    - Polyvinyl chloride (PVC) bag with a 0.25-mm (10 mil) minimum thickness;
    - PVC gloves with a 0.25-mm (10 mil) thickness and integrated elastic entrance holes;

- Bag with reversible double-throw zippers located at the top and approximately the centre of the bag;
- Straps to seal the bag around the piping in various places;
- Integrated interior fastening bands for worksites where the same bags must be used at different locations.

5.0 EXECUTION

Worksite Preparation

- The Contractor must conduct a survey of existing damage before starting the Asbestos remediation work and submit it to the Ministerial Representative;
  - The survey must identify the damage observed in the area where the work will be performed as well as the areas that will be entered when transporting waste.
- All furniture, shelving and other stored materials must be removed by the Owner.
  - Clean the furniture of any dust accumulations.
- Clean with a HEPA vacuum and protect with polyethylene the electrical components and equipment, including radiators, electrical plugs, wiring, loudspeakers, smoke and heat detectors, junction boxes and communication equipment;
- Using polyethylene sheets and duct tape, seal the air vents, diffuser and return air ducts, etc., exposed to the work area;
- Protect all uncontaminated porous materials, such as wool insulation, rigid insulation, acoustic ceiling tiles and wallpaper that will be exposed to the asbestos remediation work, using impermeable polyethylene sheets.
- Remove and clean any equipment asbestos-containing materials that are to be kept, if doing so facilitates the work or at the request of the Owner or their representative. Coordinate storage of this equipment with the Owner or their representative. Reinstall equipment at the end of the work, if necessary.
- Keep a functional emergency lighting system permanently in place.
- Coordinate with the Owner the location of the Workers' and Waste Decontamination Facilities.;
- Cover all carpet floor surfaces that are to be kept using one (1) layer of impermeable polyethylene and one (1) layer of rip-proof polyethylene.

5.2 Abatement Work

- Put on the personal protective equipment as follows:
  - Put on protective coveralls;

- Put on the respirator and check its adjustment by testing negative and positive pressure;
- If using a half-mask, don safety glasses;
- Pull the hood of the coveralls over the respirator straps;
- Extend the elastics at the ankles of the coverall legs over the safety shoes. Use duct tape as needed;
- Put on the safety hat.

- Proceed with the heat insulation removal using the glove bag method as follows:
  - Temporarily fix with duct tape or plastic the locations where the insulation is exposed and where it must be removed in order to prevent the spread of asbestos fibres when installing the glove bag;
  - Place tools at the bottom of the bag, close the zipper and install the bag around the pipe while sealing the extremities with adjustable straps;
  - Make sure that the extremities are properly affixed to the pipe to prevent the spread of fibres in this location. Use duct tape as needed to ensure that the glove bag is impermeable;
  - Insert the sprayer nozzle in the bag opening;
  - Place hands in the gloves incorporated into the bag;
  - Remove the heat insulation only from the identified areas, wetting it frequently. Stop using the bag when it is three-quarters full;
  - During the removal of the insulation, place the debris at the bottom of the bag. Avoid dropping it;
  - Avoid perforating the bag with the tools. However, if the bag rips, gets cut, or opens during work:
    - Stop all work;
    - Repair the bag before continuing;
    - If debris falls outside the bag, continue the removal work using the work enclosure method.
  - After removing the asbestos-containing heat insulation and other contaminated elements, remove any residual debris from the piping using a brush;
  - To move the bag to an adjacent section of the same pipe:
    - Properly clean the bare section of the pipe, the walls of the bag and the tools;
    - Wet the debris at the bottom of the bag in order to reduce the release of fibres;
    - Close the centre zipper in order to isolate the upper part of the bag from the lower part;
    - Loosen the straps, slide the bag along the pipe and tighten the straps;
    - The zipper at the top of the bag must only be opened to move the bag from one pipe to another or to pass over an obstruction (such as a tee). Double the bag using another impermeable bag during moves to avoid damaging the glove bag.
  - Be careful not to overload the bag with debris and water;
  - Upon completion of the Asbestos removal, isolate and clean the upper part of the bag; Also clean the bare section of pipe and the tools;

- To remove the tools:
  - Put all the tools in one glove or in the pouch provided;
  - Turn the glove inside out or close the internal zipper of the pouch;
  - Twist it to create a small bag;
  - Seal this small bag using duct tape and then cut or open the external zipper of the pouch;
  - Place the small bag into a bucket of water and clean the tools;
  - Dispose of the cut-off sleeve as asbestos waste.
- Remove the glove bag as follows:
  - Pull out the sprayer's nozzle and seal the opening with duct tape;
  - Slide an impermeable bag over the glove bag;
  - Loosen the straps of the glove bag and open the upper zipper;
  - Fold the glove bag over and place it in the impermeable bag;
  - Seal the impermeable bag.
- Apply a sealing agent on the bare section of the piping, as well as on heat insulation sections still in place.

- During the entire asbestos removal, ensure that the asbestos-containing materials stay wet in order to reduce the spread of airborne fibres.

5.3 Handling of Debris

- Bring the asbestos waste to an approved site that accepts such waste materials. Provide the Owner or their representative with the waste dump receipts.

- Place all debris that can tear 6 mm (0,15 mil) thick polyethylene bags into rigid containers and seal them before disposal.

5.4 End of Work

- As a precautionary measure, clean the surfaces adjacent to the work using a damp cloth or HEPA vacuum;

- Clean the personal protective equipment, including the respirator, using a HEPA vacuum.

- Remove and dispose of protective coveralls as asbestos waste.

- Clean the reusable clothing before wearing it again.

- Clean the parts of the body that were exposed to asbestos dust.

- Clean the respirator and safety hat in clean, soapy water. Rinse in clean water and dry completely. Store in a clean place. Dispose of filters as asbestos waste.

END OF PROCEDURE