MUNICIPALITY OF
SHUNIAH INC. 1873
A Superior Living Experience

REQUEST FOR QUOTATION

HAZARDOUS MATERIAL REMOVAL & DISPOSAL

McTAVISH RECREATION CENTRE

Quote No. 2024-06

Bid Closing: May 9th, 2024

INVITATION TO QUOTE

The Municipality of Shuniah, is inviting qualified contractors to submit their bids, for hazardous material removal and disposal at the McTavish Recreation Centre located at Fire # 100 Road No.5 South, Shuniah, ON.

Owner: Municipality of Shuniah
420 Leslie Avenue
Thunder Bay, ON.
P7A 1X8
Ph: 807-683-4545
Fax: 807-683-6982

INTRODUCTION

The Municipality of Shuniah invites contractors to provide a quotation on the form attached as Schedule A (the "Quotation Bid Form") for the supply of goods (if any) and services described in Schedule B (the "Work"). The description of the Work sets out the minimum requirements of the Municipality. A person that submits a Quotation (the "Contractor") should prepare a Quotation that meets the minimum requirements, and may as it may choose, in addition, to also include goods, services or terms that exceed the minimum requirements.

BID SUBMISSION

1.0) The Contractor should submit the Quotation **electronically** in a single PDF file which must be submitted by email at: tenders@shuniah.org , on or before before 2:00 pm (local time) on May 9th, 2024.

1.1) Bids will be opened publicly immediately after the official closing time.

1.2) Bids received after the official closing time is considered LATE and will not be accepted and will be returned unopened to the bidder.

1.3) All pages contained in the bid documents form an integral part of this bid.

1.4) The lowest or any bid will not necessarily be accepted. The owner may decide, at its sole discretion, that no bid submitted will be accepted and no contract will be awarded pursuant to this bid process. If the owner elects to reject all bids, all bidders will be notified and the owner will not be liable to any bidder in preparing the bid, damages, loss of anticipated profit in connection with the work, or any matter whatsoever.

1.5) Bidders are required to check the Municipality of Shuniah website for addenda issued before the closing date and time. If the contract administrator determines that an amendment is required to the bid documents, the contract administrator will prepare an addendum and post it to the Municipality of Shuniah website.

1.6) Bidders may withdraw its bid at any time prior to closing provided the withdrawal: i) is in the form of a letter and, ii) state the name of the bidder and clearly identifies the bid that is being withdrawn and; iii) is signed by the bidder's duly authorized signing officer; BID DOCUMENT DISCREPENCIES AND OMMISSION

1.7) Bidders are responsible to review the bid documents and to verify they are complete. If the bidder finds discrepancies or omissions from the drawings, specifications and other documents, the bidder should submit a written request for correction to the contract administrator. Any required correction, addition, deletion, or revision to the bid documents will be by written addenda to the bid documents issued by the contract administrator by posting to the Municipality of Shuniah website.

1.8) Partial or incomplete bids will not be considered.

1.9) In case of a corporation that has a corporate seal, the corporate seal shall be affixed to the bid form.

QUESTIONS AND CLARIFICATIONS

2.0) Enquiries, request for explanation, interpretations or clarifications must be submitted by email to Craig Baumann, Manager of Operations at pw@shuniah.org . Only those inquiries submitted by email will be considered. Emails submitted must include the quotation title and quotation reference number.

2.1) Enquiries will be received up to noon local time on May 3, 2024. Enquiries received after the date and time noted will not receive a response.

INFORMATION METTING

3.0 An information meeting will be hosted by the Municipality's representative to discuss the requirements under this RFQ (the "Information Meeting"). While attendance is at the discretion of Contractors, Contractors who do not attend will be deemed to have attended the Information Meeting and to have received all of the information given at the Information Meeting.

At the time of issuance of this RFQ a meeting has been schedule as follows:

Date: Tuesday April 30, 2024, 2024 Time: 10:00 am (local time)

Location: Fire # 100 Road No.5 South, Shuniah ON.

Contractors are to examine the site prior to submitting a Quotation to fully acquaint themselves with all existing conditions reasonably inferable from examination of the site and its surroundings and the RFQ and to make allowance for such conditions in the Quotation. By submitting a Quotation, a Contractor represents that it has examined the site fully as to all conditions, contingencies, risks and circumstances, local or otherwise, which might influence or affect the performance or the cost of the work, including but not limited to: RFQ 2024-06 – Building Hazardous Material Removal and Disposal. Fire #100 Road No.5 South location of the Contractor occupancy during the work, access and all other conditions that a competent Contractor experienced in work similar to the work would consider and take into account and is further deemed to have included in the contract price all costs occasioned thereby.

CONTRACTOR'S QUALIFICATIONS

5.0) By submitting a Quotation, a Contractor represents that it has the expertise, qualifications, resources, and relevant experience to supply the Goods and Services. Tradesmen engaged in the performance of the Services shall be qualified in accordance with the requirements of the Tradesman Qualification Act and all pertinent licensing requirements required by the Ministry of Municipal Affairs.

REQUEST OF APPROVED EQUALS AND ALTERNATIVES

6.0) Request for equals to the material, equipment or methods of fabrications specified, should be submitted in writing to the contract administrator. These requests should contain pertinent data such as specifications, construction and operational characteristics, cost savings etc. in order to assist the contract administrator in his decision. Approvals for equals will be in the form of addenda. The contract administrator is not obligated to review and approve equals prior to the bid closing time.

RFQ 2024-06

Schedule A – Bid Form

Owner

Legal Name: **The Corporation of the Municipality of Shuniah**

Address for Service: Fire # 100 Rd.5 South
Shuniah , ON.

Bidder

Legal Name: ----------

Address for Service: .....

City ..... Province ..... Postal Code .....

Bid Price

Having examined the bid documents as listed in Schedule "B" of RFQ 2024-06 and provided Designated Substance Report and TCLP Certificate of Analysis to this Stipulated Price Bid
and
Addenda No. ..... to ..... inclusive, all as issued by **the Municipality of Shuniah**, and having visited the Place of the Work, we hereby offer to enter into a contract to perform the Work required by the bid documents for the stipulated price of:

..... /100 Dollars $ .....

In Canadian Funds excluding Provincial and Federal Taxes

Signatures

SIGNED AND SUBMITTED for and on behalf of:

_____
Name of Bidder (please print)

_____
Signature

Affix Seal Above

PREVIOUS EXPERIENCE

Please indicate three (3) past/current related work experience

All bidders must demonstrate similar experience by providing references from a government/public sector entity of similar nature. Bidders without or with insufficient government/public sector experience may be disqualified. Past experience with the Municipality will also be considered. Prior poor performance with the Municipality may result in disqualification. Decisions of disqualification by the Municipality will be deemed final and will be given to the bidder in writing.

Reference#1

Project Title & brief description of work:

_____

_____

Project start date: _____ Project end date: _____
Total value of contract awarded: $_____

Owner or Contractor who awarded contract: _____

Contact person: (Full Name) _____Phone:_____

_____

Reference#2

Project Title & brief description of work:

_____

_____

Project start date: _____ Project end date: _____
Total value of contract awarded: $_____

Owner or Contractor who awarded contract: _____

Contact person: (Full Name) _____Phone:_____

_____

PREVIOUS EXPERIENCE

Reference#3

Project Title & brief description of work: Project Title & brief description of work:

_____

_____ _

Project start date: _____ Project end date: _____
Total value of contract awarded: $_____

Owner or Contractor who awarded contract: _____

Contact person: (Full Name) _____Phone:_____

HEALTH & SAFETY

General: Contractor must comply with the Occupational Health and Safety Act (OHSA) and the Municipality of Shuniah safety policy.

Competent person: Contractor is responsible using their training, knowledge, and experience to protect the health and safety of their workers and others, reporting to their supervisor the absence of, or defect in any protective equipment or device, and reporting to their supervisor, any circumstances or conditions that may limit their ability to comply with the requirements of the OHSA and the Municipality of Shuniah Safety policy.

Equipment & tools: All equipment and tools used by the contractor shall conform to Canadian Standards Association (CSA) or manufacturer specifications. The Municipality of Shuniah reserves the right to prohibit the use of any equipment and methods or practices that do not conform to acceptable standards. Defective equipment and tools shall be removed from the work site premises immediately.

PPE: All workers must wear appropriate CSA approved eye protection, hearing protection, CSA approved hard hats, CSA approved foot protection and CSA approved gloves at all times while working in prescribed areas.

Reporting: Contractor must report immediately to the contract administrator all workplace incidents, near misses, injuries and illnesses and environmental damages. Contractor shall also report accidents/incidents to the Ministry of Labour or any other appropriate authority required by legislation.

Supervision: Contractor shall comply with OHSA regulations.

WSIB: Contractor shall provide the Municipality with a current WSIB Clearance Certificate within five (5) days of contract award.

GENERAL LIABILITY INSURANCE

The successful Bidder's General Liability Insurance policy shall not be less than $5,000,000 (five million dollars) per occurrence. The successful Bidder agrees to provide proof of a General Liability insurance policy in the amount of not less than $5,000,000, (five million dollars) per occurrence, to indemnify the Corporation of the Shuniah against any damages occasioned through any act, omission or neglect of the successful Bidder while carrying out the service under this Proposal.

The Municipality shall be included as an "additional insured" on the successful Respondent's insurance policy.

PROTECTION OF WORK & PROPERTY

The successful contractor shall provide continuous and adequate protection of all work from damage and shall protect the Municipality's property from injury or damage arising from or in connection with this work. The successful Respondent shall make good any such damage or injury.

PERFORMANCE

Any undue delays in the execution of the work and/or costs incurred by the Municipality due to inefficiencies in performance on behalf of the successful Respondent shall be deemed to be the

responsibility of that Respondent and as such, any and all costs, as deemed appropriate and reasonable compensation for the Municipality, will be assessed to the successful Respondent.

CHARACTER AND EMPLOYMENT OF STAFF

The successful contractor shall employ only orderly, competent, and skillful employees to ensure that the services are carried out in a respectable manner. Workmanship and services shall be of the best quality, executed by employees qualified, experienced and thoroughly skilled in the respective duties for which they are employed.

Decision as to the quality or professionalism of workmanship in case of any dispute rests solely with the contact administrator, whose decision is final.

Contractor will be informed about any unsatisfactory performance, as identified by the contractor administrator, and given a reasonable opportunity to remedy. Unresolved unsatisfactory performance issues may result in termination of the remainder of the contract. The Municipality reserves the right to disqualify a contractor due to the contractor's past performance on previous contracts awarded, failure to complete awarded work, or termination of previous contracts.

ASSIGNMENT OF CONTRACT

The successful contractor shall not assign transfer, convey, sublet or otherwise dispose of this contract or his/her right, title or interest therein, or his power to execute such contract, to any other person, company or Corporation, without the previous consent, in writing, of the Municipality's officials, which consent shall not be unreasonably withheld.

SUB-CONTRACTORS

No portion of the work under this award may be sub-contracted without the written authorization of the Municipality. The contractor is fully responsible to the Municipality for the acts and omissions of sub-respondents and/or persons directly or indirectly engaged by the contractor in respect to this work. Sub-contractor will be required to abide by all the requirements of the Proposal document as though the primary successful contractor (Insurance, WSIB, Health & Safety Policy, etc.). The contractor agrees to bind every sub-contractor by the terms of the RFQ documents as far as it is applicable to their work.

PAYMENT

All Invoices submitted by the Consultant must show the project name, the Project reference number and the Contract administrator's name.

Change orders will only be processed if submitted with a change order notice signed by the contract administrator.

Only original copy of invoices will be processed for payment. Invoices must indicate the landfill site and a detailed breakdown of hours.

Contractor shall invoice on an equal monthly billing from November 1st to May 15th of each year for the duration of the 3-year contract.

TERMINATION

The owner shall have the right to terminate this project whenever and for whatever reason it chooses. Such termination shall be effective thirty (30) days following written termination notice to the contractor or at the time specified in such termination notice. The Owner shall pay the contractor for the portion of services completed up to the time of the termination.

SCHEDULE "B"

SCOPE OF WORK

Part 1 General

1.1 WORK COVERED BY CONTRACT DOCUMENTS

.1 Municipality of Shuniah (Owner) requires a qualified contractor to safely remove identified designated and other hazardous materials in preparation for demolition of the McTavish Recreation Centre (subject building) located in Pearl, Ontario.

.2 The subject building is a recreation centre comprising a main floor and a basement. An addition is present towards the rear of the original building. The subject building has a total footprint of approximately 320 square metres. The interior building construction is wood framing and concrete block foundation. The exterior building construction is red brick, a peaked asphalt shingled roof, and painted wood on the trim around the edge of the roof, windows, and sills. The year of construction of the original building and addition is unknown, however both sections are presumed to be constructed in or around 1960.

.3 The scope of work includes, but may not be limited to, the following tasks (specifications are provided):

- .1 Remove asbestos-containing materials (ACM) in the subject building. The following ACM have been identified: mud joint compound associated with finished drywall and limited to the original building construction; non-friable 12"x12" cream/ brown/ gold pattern vinyl floor tiles; and friable air cell pipe insulation on pipe straights. NOTE: If the entire building is demolished without first removing identified ACM inside then the following will apply: the demolition will be considered an outdoor Type 3 asbestos operation; and all waste generated as part of the demolition will be considered to be ACM and should be disposed of as asbestos waste.
- .2 Remove leachate toxic lead painted materials. The following leachate toxic lead painted material has been identified: cream paint on exterior wood. Dispose of leachate toxic lead waste as hazardous waste. NOTE: leachate toxic lead painted wood must be removed prior to demolition.
- .3 Remove PCB-containing materials. The following potential PCB-containing material has been identified: fluorescent lamp ballasts.
- .4 Remove mercury-containing materials. The following mercury-containing materials have been identified: fluorescent light tubes; and thermostats.
- .5 Remove refrigerants that may contain CFCs. The following refrigerants have been identified: a freezer; and a refrigerator.

1.2 CONTRACT METHOD

.1 Not used.

1.3 WORK BY OTHERS

.1 Not used.

1.4 WORK SEQUENCE

.1 Designated and other hazardous materials must be removed from the building prior to demolition.

.2 Following removal of ACM, no one shall enter the building without appropriate personal protective equipment (i.e., ACM should be removed last).

.1 If ACM are not removed prior to demolition then the demolition will be considered an asbestos operation.

1.5 CONTRACTOR USE OF PREMISES

.1 Not used.

1.6 OWNER OCCUPANCY

.1 Not used.

1.7 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

.1 Not used.

1.8 EXISTING CONDITIONS

.1 Where unknown materials are encountered, immediately advise Owner and confirm findings in writing.

.2 Construct barriers to prevent unauthorized access to work area.

1.9 DOCUMENTS REQUIRED

.1 Refer to attached specifications sections.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Work on this project may involve disturbance of asbestos-containing materials (ACM) as identified in Section 1.8 below.

.2 Comply with requirements of this Section when performing the following work:

- .1 Installing or removing non-friable ACM if the material is installed or removed without being broken, cut, drilled, abraded, sanded or vibrated.
- .2 Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable ACM if,
  - .1 the material is wetted to control the spread of dust or fibres, and
  - .2 the work is done only by means of non-powered hand-held tools.
- .3 Removing less than 1 m^2 of drywall which has ACM mud joint compound (MJC) as long as the work is done using non-powered hand-held tools.

1.2 SECTION INCLUDES

.1 Requirements and procedures for asbestos abatement of non-friable ACM (i.e. Type 1 Asbestos Operations).

1.3 REFERENCES

.1 Department of Justice Canada (Jus)

- .1 Canadian Environmental Protection Act, 1999 (CEPA)

.2 Transport Canada (TC)

- .1 Transportation of Dangerous Goods Act, 1992 (TDGA)

.3 Ontario Ministry of Labour, Immigration, Training and Skills Development (MLITSD)

- .1 Occupational Health and Safety Act (OHSA)
  - .1 Ontario Regulation 278/05 – Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations

.4 Ontario Ministry of the Environment, Conservation and Parks (MECP)

- .1 Environmental Protection Act (EPA)
  - .1 Ontario Regulation 347/90 – General – Waste Management

1.4 DEFINITIONS

.1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.

.2 Amended Water: water with non-ionic surfactant wetting agent added to reduce water tension to allow thorough wetting of fibres.

.3 Asbestos-Containing (AC) Materials (ACMs): materials identified under Existing Conditions including fallen materials and settled dust.

.4 Asbestos Work Area: area where work takes place which will, or may, disturb ACMs.

.5 Authorized Visitors: Engineer, Consultants or designated representatives, and representatives of regulatory agencies.

.6 Equivalent Measure: A constructor may vary a measure or procedure described in O. Reg. 278/05 as long as the measure or procedure, as varied, affords protection for the health and safety of workers that is at least equal to the protection that would be provided by complying with O. Reg. 278/05. The varied measure may not change the type of operation and it may not change the personal protective equipment as required under O. Reg. 278/05 for a given asbestos operation.

.7 Non-Friable Material: material that when dry cannot be crumbled, pulverized or powdered by hand pressure.

.8 Occupied Area: any area of the building or work site that is outside Asbestos Work Area.

.9 Polyethylene: polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide protection and isolation.

.10 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have appropriate capacity for work.

1.5 SUBMITTALS

.1 Submit proof satisfactory to Owner or Owner's Representative that asbestos removal methods will satisfy requirements for Type 1 procedures.

.1 If, in the opinion of the Owner or Owner's Representative, the Contractor's proposed work methods do not meet the intent of this section, carry out work in accordance with Asbestos Abatement – Type 2 or Type 3 Operations.

.2 The onus is on the Contractor to select the appropriate removal method to satisfy regulatory requirements and these specifications.

.2 Submit proof satisfactory to Owner or Owner's Representative that employees have had instruction on hazards of asbestos exposure, respirator use, dress, entry and exit from Asbestos Work Area, and aspects of work procedures and protective measures.

.1 Training to meet or exceed requirements of O. Reg. 278/05.

.3 Submit proof that supervisory personnel have attended asbestos abatement course approved by Owner or Owner's Representative. Minimum of one supervisor for every ten workers.

.1 Training to meet or exceed requirements of O. Reg. 278/05.

.4 Submit proof satisfactory to Owner or Owner's Representative that suitable arrangements have been made to dispose of asbestos-containing waste in accordance with requirements of authority having jurisdiction.

.5 Submit Provincial and/or local requirements for Notice of Project Form.

.6 Submit proof of Contractor's Asbestos Liability Insurance.

.7 Submit to Owner or Owner's Representative necessary permits for transportation and disposal of asbestos-containing waste and proof that asbestos-containing waste has been received and properly disposed.

1.6 QUALITY ASSURANCE

.1 Regulatory Requirements: comply with Federal, Provincial/Territorial, and local requirements pertaining to asbestos, provided that in case of conflict among these requirements or with these specifications, more stringent requirement applies. Comply with regulations in effect at time Work is performed.

.2 Health and Safety:

.1 Safety Requirements: worker protection.

.1 Protective equipment and clothing are not required for Type 1 asbestos operations; however, if a worker requests respiratory protection, the following is to be supplied by Contractor and worn by workers while in the Asbestos Work Area:

.1 Non-powered reusable or replaceable filter-type respirator equipped with HEPA filter cartridges, personally issued to worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to Provincial Authority having jurisdiction.

.2 Disposable-type protective clothing that does not readily retain or permit penetration of asbestos fibres, consisting of full-body covering including head covering with snug-fitting cuffs at wrists, ankles, and neck.

.3 In the event of discrepancy between these specifications and Table 2 of O. Reg. 278/05, the requirements of Table 2 will apply.

.2 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.

.3 Before leaving Asbestos Work Area, dispose of protective clothing as contaminated waste as specified.

.4 Ensure workers wash hands and face when leaving Asbestos Work Area. Facilities for washing are located as close to Asbestos Work Area as possible.

.5 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Place materials defined as hazardous or toxic in designated containers.

.2 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.

.3 Disposal of asbestos waste generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Dispose of asbestos waste in sealed double thickness 6 ml bags or leak proof drums. Label containers with appropriate warning labels. NOTE: If the entire building is demolished without first removing identified ACM inside then all waste generated as part of the demolition will be considered to be ACM and should be disposed of as asbestos waste.

.4 Provide manifests describing and listing waste created. Transport containers by approved means to licenced landfill for burial.

1.8 EXISTING CONDITIONS

.1 Information pertaining to confirmed and potential ACMs to be handled, removed or otherwise disturbed and disposed of in the subject building has been provided.

.2 Notify Owner or Owner's Representative of ACM discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material pending instructions from Owner or Owner's Representative.

.3 Asbestos is present in the following building materials in the subject building as summarized in the designated substance survey report (existing report) entitled, *Designated Substance Survey, McTavish Recreation Centre, Pearl, Ontario,* dated December 22, 2009:

.1 Mud joint compound (MJC) associated with finished drywall and limited to the old construction portion of the building (room 9 in the existing report) contains 1-10% Chrysotile asbestos (NOTE: The existing report classifies the MJC as a friable ACM; however, a review of the photographs associated with the existing report do not show that the MJC was in poor condition (e.g., friable and crumbling) and O. Reg. 278/05 provides specific direction for AC MJC based on the amount of associated drywall to be disturbed. These specifications have been prepared based on the requirements of O. Reg. 278/05 with respect to disturbance of AC MJC associated with finished drywall.);

.2 Non-friable 12"x12" cream/ brown/ gold pattern vinyl floor tile contains 1-10% Chrysotile asbestos; and

.3 Friable air cell pipe insulation on pipe straights contains 50-75% Chrysotile asbestos (estimated amount is >1 m^2).

.4 Figures, tables and reports pertaining to ACM to be handled, removed, or otherwise disturbed and disposed of during this project are provided for general information only and are not necessarily representative of all ACM covered within the scope of this project. Contractors are to satisfy themselves as to the exact quantity and location of ACM for disturbance or removal as part of the current project PRIOR TO BID CLOSE.

1.9 SCHEDULING

.1 Contractor is responsible for scheduling of asbestos abatement work in order to achieve the desired schedule.

.2 Inform sub-trades of presence of asbestos-containing materials identified in Existing Conditions.

.3 Co-ordinate with Owner or Owner's Representatives and other contractors when scheduling work.

1.10 OWNER'S INSTRUCTIONS

.1 Before beginning Work, provide Owner or Owner's Representative satisfactory proof that every worker has had instruction and training in hazards of asbestos exposure, in personal hygiene and work practices, and in use, cleaning, and disposal of respirators and protective clothing.

.2 Instruction and training related to respirators includes, following minimum requirements:

.1 Fitting of equipment.

.2 Inspection and maintenance of equipment.

.3 Disinfecting of equipment.

.4 Limitations of equipment.

.3 Instruction and training must be provided by a competent, qualified person.

Part 2 Products

2.1 MATERIALS

.1 Drop Sheets:

.1 Polyethylene: 0.15 mm thick.

.2 FR polyethylene: 0.15 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.

.2 Wetting Agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with water in a concentration to provide thorough wetting of asbestos-containing material.

.3 Waste Containers: contain waste in two separate containers.

.1 Inner container: 0.15 mm thick sealable polyethylene waste bag.

.2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.

.3 Labelling requirements: affix preprinted cautionary asbestos warning in both official languages that is visible when ready for removal to disposal site.

Part 3 Execution

3.1 PROCEDURES

.1 Before beginning Work, isolate Asbestos Work Area using, minimum, preprinted cautionary asbestos warning signs in both official languages that are visible at access routes to Asbestos Work Area.

.1 Remove visible dust from surfaces in the work area where dust is likely to be disturbed during course of work.

.2 Use HEPA vacuum, or damp cloths where damp cleaning does not create a hazard and is otherwise appropriate.

.3 Do not use compressed air to clean up or remove dust from any surface.

.2 Prevent spread of dust from Asbestos Work Area using measures appropriate to work to be done.

.1 Use FR polyethylene drop sheets over flooring such as carpeting that absorbs dust and over flooring in Asbestos Work Area where dust and contamination cannot otherwise be safely contained.

.3 Wet materials containing asbestos to be cut, ground, abraded, scraped, drilled, or otherwise disturbed unless wetting creates hazard or causes damage.

.1 Use garden reservoir type low - velocity fine - mist sprayer.

.2 Perform Work to reduce dust creation to lowest levels practicable.

.3 Work will be subject to visual inspection.

.4 Contamination of surrounding areas indicated by visual inspection will require complete enclosure and clean-up of affected areas.

.5 All wetting shall be conducted with amended water.

.4 Clean-Up:

.1 Frequently during Work and immediately after completion of Work, clean up dust and asbestos-containing waste using HEPA vacuum or by damp mopping.

.2 Place dust and asbestos-containing waste in sealed dust-tight waste bags. Treat drop sheets and disposable protective clothing as asbestos waste; wet and fold these items to contain dust, then place in plastic bags.

.3 Drop sheets shall not be reused.

.4 Clean exterior of each waste-filled bag using damp cloths or HEPA vacuum and place in second clean waste bag immediately prior to removal from Asbestos Work Area.

.5 Seal waste bags and remove from site. Dispose of in accordance with requirements of Provincial/Territorial and Federal Authority having jurisdiction. Supervise dumping and ensure that dump operator is fully aware of hazardous nature of material to be dumped and that guidelines and regulations for asbestos disposal are followed.

.6 Perform final thorough clean-up of Work areas and adjacent areas affected by Work using HEPA vacuum.

.7 Reusable barriers shall be cleaned by HEPA vacuuming and damp wiping.

3.2 SITE VISITS

.1 The following site visits will be completed by the Owner or Owner's Representative over the duration of the work. The Contractor is to provide minimum 24 hours notice to the Owner or Owner's Representative to arrange for the site visits.

.1 Initial Site Visit: following completion of preparation of work area but prior to the commencement of ACM removal.

.2 Final Site Visit: following completion of all removal work and cleaning and sealing of all surfaces within the enclosure, but prior to removing hoarding, drop sheets or other containment barriers.

.2 If results of the visual site visits suggest that asbestos remains in the work area, re-clean in accordance with section 3.1 and any additional direction provided by the Owner or Owner's Representative. Re-cleaning shall be at no additional cost to the Client.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Work on this project may involve disturbance of asbestos-containing materials (ACM) as identified in Section 1.8 below.

.2 Comply with requirements of this Section when performing the following Work:

.1 Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable ACM if,

.1 the material is not wetted to control the spread of dust or fibres, and

.2 the work is done only by means of non-powered hand-held tools.

.2 Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable ACM if the work is done by means of power tools that are attached to dust-collecting devices equipped with HEPA filters.

.3 Removing 1 m^2 or more of drywall which has ACM mud joint compound (MJC) as long as the work is done using non-powered hand-held tools.

.4 The removal or disturbance of 1 m^2 or less of friable ACM as long as it is wetted and only non-powered hand-held tools are used.

.5 Removing insulation that is ACM from a pipe, duct or similar structure using a glove bag.

1.2 SECTION INCLUDES

.1 Requirements and procedures for asbestos abatement of intermediate amounts of ACM of the type described within (i.e. Type 2 Asbestos Operation).

1.3 REFERENCES

.1 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-1.205-2003, Sealer for Application of Asbestos-Fibre Releasing Materials

.2 Department of Justice Canada (Jus)

.1 Canadian Environmental Protection Act, 1999 (CEPA)

.3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS)

.4 Transport Canada (TC)

.1 Transportation of Dangerous Goods Act, 1992 (TDGA)

.5 Underwriters' Laboratories of Canada (ULC)

.6 Ontario Ministry of Labour, Immigration, Training and Skills Development (MLITSD)

.1 Occupational Health and Safety Act (OHSA)

.1 Ontario Regulation 278/05 – Designated Substance – Asbestos on Construction Projects and in buildings and Repair Operations

.7 Ontario Ministry of the Environment, Conservation and Parks (MECP)

.1 Environmental Protection Act (EPA)

.1 Ontario Regulation 347/90 – General – Waste Management

1.4 DEFINITIONS

.1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any dimension at 99.97% efficiency.

.2 Amended Water: water with non-ionic surfactant wetting agent added to reduce water tension to allow wetting of fibres.

.3 Asbestos-Containing (AC) Materials (ACMs): materials identified under Existing Conditions Article, including fallen materials and settled dust.

.4 Minor Amounts of ACMs: less than or equal to 1 m^2 of friable material containing asbestos.

.5 Asbestos Work Area: area where work takes place which will, or may disturb ACMs.

.6 Authorized Visitors: Engineer, or designated representatives, and representatives of regulatory agencies.

.7 Equivalent Measure: A constructor may vary a measure or procedure described in O. Reg. 278/05 as long as the measure or procedure, as varied, affords protection for the health and safety of workers that is at least equal to the protection that would be provided by complying with O. Reg. 278/05. The varied measure may not change the type of operation and it may not change the personal protective equipment as required under O. Reg. 278/05 for a given asbestos operation.

.8 Friable Material: material that when dry can be crumbled, pulverized or powdered by hand pressure and includes such material that is crumbled, pulverized or powdered.

.9 Glove Bag: prefabricated glove bag as follows:

.1 Minimum thickness 0.25 mm (10 mil) polyvinyl-chloride bag.

.2 Integral 0.25 mm (10 mil) thick polyvinyl-chloride gloves and elastic ports.

.3 Equipped with reversible double-pull double throw zipper on top and at approximately mid-section of the bag.

.4 Straps for sealing ends around pipe.

.5 Must incorporate internal closure strip if it is to be moved or used in more than one specific location.

.10 Occupied Area: any area of building or work site that is outside Asbestos Work Area.

.11 Polyethylene: polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide protection and isolation.

.12 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have appropriate capacity for scope of work.

1.5 SUBMITTALS

.1 Submit proof satisfactory to Owner or Owner's Representative that asbestos removal methods will satisfy requirements for Type 2 procedures.

.1 If, in the opinion of the Owner or Owner's Representative, the Contractor's proposed work methods do not meet the intent of this section, carry out work in accordance with Asbestos Abatement – Type 3 Operations.

.2 The onus is on the Contractor to select the appropriate removal method to satisfy regulatory requirements and these specifications.

.2 Submit proof satisfactory to Owner or Owner's Representative that suitable arrangements have been made to dispose of asbestos-containing waste in accordance with requirements of authority having jurisdiction.

.3 Submit Provincial/Territorial and/or local requirements for Notice of Project Form.

.4 Submit proof of Contractor's Asbestos Liability Insurance.

.5 Submit to Owner or Owner's Representative necessary permits for transportation and disposal of asbestos-containing waste and proof that asbestos-containing waste has been received and properly disposed.

.6 Submit proof satisfactory to Owner or Owner's Representative that employees have had instruction on hazards of asbestos exposure, respirator use, dress, entry and exit from Asbestos Work Area, and aspects of work procedures and protective measures.

.1 Training to meet or exceed requirements of O. Reg. 278/05.

.7 Submit proof that supervisory personnel have attended asbestos abatement course approved by Owner or Owner's Representative. Minimum of one supervisor for every ten workers.

.1 Training to meet or exceed requirements of O. Reg. 278/05.

.8 Submit Worker's Compensation Board status and transcription of insurance.

.9 Submit documentation including test results, fire and flammability data, and Material Safety Data Sheets (MSDS) for chemicals or materials including:

.1 amended water; and

.2 slow-drying sealer.

1.6 QUALITY ASSURANCE

.1 Regulatory Requirements: comply with Federal, Provincial/Territorial and local requirements pertaining to asbestos, provided that in case of conflict among these requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at the time work is performed.

.2 Health and Safety:

.1 Safety Requirements: worker and visitor protection.

.1 Protective equipment and clothing to be worn by workers while in Asbestos Work Area include:

.1 Non-powered reusable or replaceable filter-type respirator equipped with HEPA filter cartridges, personally issued to worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to Provincial Authority having jurisdiction.

.2 Disposable-type protective clothing that does not readily retain or permit penetration of asbestos fibres, consisting of full-body covering including head covering with snug-fitting cuffs at wrists, ankles, and neck.

.3 Where conflict between these specifications and Table 2 of O. Reg. 278/05, the requirements of Table 2 will apply.

.2 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.

.3 Before leaving Asbestos Work Area, dispose of protective clothing as contaminated waste as specified.

.4 Ensure workers wash hands and face when leaving Asbestos Work Area. Facilities for washing shall be located as close as possible to the Asbestos Work Area.

.5 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.

.2 Visitor Protection:

.1 Provide protective clothing and approved respirators to Authorized Visitors to work areas.

.2 Instruct Authorized Visitors in the use of protective clothing, respirators and procedures.

.3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Asbestos Work Area.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Place materials defined as hazardous or toxic in designated containers.

.2 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.

.3 Disposal of asbestos waste generated by removal activities must comply with Federal, Provincial/Territorial and Municipal regulations. Dispose of asbestos waste in sealed double thickness 6 ml bags or leak proof drums. Label containers with appropriate warning labels. NOTE: If the entire building is demolished without first removing identified ACM inside then all waste generated as part of the demolition will be considered to be ACM and should be disposed of as asbestos waste.

.4 Provide manifests describing and listing waste created. Transport containers by approved means to licenced landfill for burial.

1.8 EXISTING CONDITIONS

.1 Information pertaining to confirmed and potential ACMs to be handled, removed or otherwise disturbed and disposed of in the subject building has been provided.

.2 Notify Owner or Owner's Representative of ACM discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material pending instructions from Owner or Owner's Representative.

.3 Asbestos is present in the following building materials in the subject building as summarized in the designated substance survey report (existing report) entitled, *Designated Substance Survey, McTavish Recreation Centre, Pearl, Ontario,* dated December 22, 2009:

.1 Mud joint compound (MJC) associated with finished drywall and limited to the old construction portion of the building (room 9 in the existing report) contains 1-10% Chrysotile asbestos (NOTE: The existing report classifies the MJC as a friable ACM; however, a review of the photographs associated with the existing report do not show that the MJC was in poor condition (e.g., friable and crumbling) and O. Reg. 278/05 provides specific direction for AC MJC based on the amount of associated drywall to be disturbed. These specifications have been prepared based on the requirements of O. Reg. 278/05 with respect to disturbance of AC MJC associated with finished drywall.);

.2 Non-friable 12"x12" cream/ brown/ gold pattern vinyl floor tile contains 1-10% Chrysotile asbestos; and

.3 Friable air cell pipe insulation on pipe straights contains 50-75% Chrysotile asbestos (estimated amount is >1 m^2).

.4 Figures, tables and reports pertaining to ACM to be handled, removed, or otherwise disturbed and disposed of during this project are provided for general information only and are not necessarily representative of all ACM covered within the scope of this project. Contractors are to satisfy themselves as to the exact quantity and location of ACM for disturbance or removal as part of the current project PRIOR TO BID CLOSE.

1.9 SCHEDULING

.1 Contractor is responsible for scheduling of asbestos abatement work in order to achieve the desired schedule.

.2 Inform sub-trades of presence of asbestos-containing materials identified in Existing Conditions.

.3 Co-ordinate with Owner or Owner's Representatives and other contractors when scheduling work.

1.10 OWNER'S INSTRUCTIONS

.1 Before beginning Work, provide Owner or Owner's Representative satisfactory proof that every worker has had instruction and training in hazards of asbestos exposure, in personal hygiene and work practices, in use of glove bag procedures, and in use, cleaning, and disposal of respirators and protective clothing.

.2 Instruction and training related to respirators includes, at minimum:

.1 Fitting of equipment.

.2 Inspection and maintenance of equipment.

.3 Disinfecting of equipment.

.4 Limitations of equipment.

.3 Instruction and training must be provided by competent, qualified person.

Part 2 Products

2.1 MATERIALS

.1 Drop and Enclosure Sheets.

.1 Polyethylene: 0.15 mm thick.

.2 FR polyethylene: 0.15 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.

.2 Wetting Agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with water in concentration to provide thorough wetting of asbestos-containing material.

.3 Waste Containers: contain waste in two separate containers.

.1 Inner container: 0.15 mm thick sealable polyethylene bag.

.2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.

.3 Labelling requirements: affix preprinted cautionary asbestos warning, in both official languages, that is visible when ready for removal to disposal site.

.4 Glove bag:

.1 Acceptable materials: safe-T-Strip products in configuration suitable for Work, or Alternative material approved by addendum during tendering period in accordance with Instructions to Tenderers.

.2 Glove bags intended for use in more than one location must be equipped with reversible, double-pull, double-throw zipper on top and at approximately mid-section of bag.

.5 Tape: tape suitable for sealing polyethylene to surfaces under both dry and wet conditions using amended water.

.6 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual asbestos fibres.

.1 Sealer: flame spread and smoke developed rating less than 50.

Part 3 Execution

3.1 SUPERVISION

.1 Minimum of one Supervisor for every ten workers is required.

.2 Approved Supervisor must remain within Asbestos Work Area during disturbance, removal, or other handling of asbestos-containing materials.

3.2 PROCEDURES

.1 Before beginning Work, at each access to Asbestos Work Area, install warning signs in both official languages in upper case 'Helvetica Medium' letters reading as follows, where number in parentheses indicates font size to be used: 'CAUTION ASBESTOS HAZARD AREA (25 mm) / NO UNAUTHORIZED ENTRY (19 mm) / WEAR ASSIGNED PROTECTIVE EQUIPMENT (19 mm) / BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM (7 mm)'.

.2 Before beginning Work remove visible dust from surfaces in work area where dust is likely to be disturbed during course of work.

.1 Use HEPA vacuum, or damp cloths where damp cleaning does not create hazard and is otherwise appropriate.

.2 Do not use compressed air to clean up or remove dust from any surface.

.3 Prevent spread of dust from Asbestos Work Area using measures appropriate to work to be done.

.1 Use FR polyethylene drop sheets over flooring such as carpeting that absorbs dust and over flooring in work areas where dust or contamination cannot otherwise be safely contained.

.2 Cover or remove from the work area any equipment or furniture inside of it.

.3 Cover wall surfaces with one layer of 6 mil polyethylene sheeting sealed with tape.

.4 If the work will involve disturbance of less than or equal to 1 m^2 of friable ACM then construct an enclosure around the work area of polyethylene and/or other means as described for the project (e.g. erection of a semi-permanent partition

wall and including, if the enclosure is opaque, one or more transparent window areas to allow observation of the entire work area from outside the enclosure), if the work area is not already enclosed by walls and a ceiling (NOTE: The enclosure shall include a ceiling).

.5 Disable the mechanical ventilation system serving the work area.

.6 Seal the ventilation ducts to and from (or near) the work area.

.4 Thoroughly wet material containing asbestos to be removed or disturbed before and during Work unless wetting creates hazard or causes damage.

.1 Use garden reservoir type low - velocity sprayer or airless spray equipment capable of producing mist or fine spray.

.5 Perform Work in a manner to reduce dust creation to lowest levels practicable.

.6 Pipe Insulation Removal Using Glove Bag:

.1 Place tools necessary to remove insulation in tool pouch. Wrap bag around pipe and close zippers. Seal bag to pipe with cloth straps.

.2 Place hands in gloves and use necessary tools to remove insulation. Arrange insulation in bag to obtain full capacity of bag.

.3 Insert nozzle of garden reservoir type sprayer into bag through valve and wash down pipe and interior of bag thoroughly. Wet surface of insulation in lower section of bag.

.4 When glove bags are intended for use at more than one location: after wash-down and application of sealer, seal off waste in lower section of bag using zipper at mid-section of bag. Remove air from top section of bag through elasticized valve using HEPA vacuum. Remove bag from pipe, reinstall in new location, and reseal to pipe prior to opening lower section of bag. Repeat stripping operation.

.5 If bag is to be moved along pipe, first remove air from top section through elasticized valve using HEPA vacuum. Next loosen straps, move bag, re-seal to pipe using double-pull zipper to pass hangers. Repeat stripping operation.

.6 To remove bag after completion of stripping, wash top section and tools thoroughly. Remove air from top section through elasticized valve using a HEPA vacuum. Pull polyethylene waste container over glove bag before removing from pipe. Release one strap and remove freshly washed tools. Place tools in water. Remove second strap and zipper. Fold over into waste container and seal.

.7 After removal of bag ensure that pipe is free of residue. Remove residue using HEPA vacuum or wet cloths. Ensure that surfaces are free of sludge which after drying could release asbestos dust into atmosphere. Seal exposed surfaces of pipe and ends of insulation with slow-drying sealer to seal in any residual fibres.

.8 Upon completion of Work shift, cover exposed ends of remaining pipe insulation with polyethylene taped in place.

.7 Work is subject to visual inspection. Owner or Owner’s Representative reserves the right to complete air monitoring on a random basis. Contamination of surrounding areas

indicated by visual inspection or air monitoring will require complete enclosure and clean-up of affected areas at no cost to the owner.

.8 Clean-up:

.1 Frequently during Work and immediately after completion of work, clean up dust and asbestos-containing waste using HEPA vacuum or by damp mopping.

.2 Place dust and asbestos-containing waste in sealed dust-tight waste bags. Treat drop sheets and disposable protective clothing as asbestos waste and wet and fold to contain dust and then place in waste bags.

.3 Immediately before their removal from Asbestos Work Area and disposal, clean each filled waste bag using damp cloths or HEPA vacuum and place in second clean waste bag.

.4 Seal and remove double-bagged waste from site. Dispose of in accordance with requirements of Provincial/Territorial and Federal authority having jurisdiction. Supervise dumping and ensure that dump operator is fully aware of hazardous nature of material to be dumped and that guidelines and regulations for asbestos disposal are followed.

.5 Perform final thorough clean-up of Asbestos Work Areas and adjacent areas affected by Work using HEPA vacuum.

.9 Re-establish mechanical and electrical systems in proper working order. Install new filters.

3.3 SITE VISITS

.1 The following site visits will be completed by the Owner or Owner's Representative over the duration of the work. The Contractor is to provide minimum 24 hours notice to the Owner or Owner's Representative to arrange for the site visits.

.1 Initial Site Visit: following completion of preparation of work area but prior to the commencement of ACM removal.

.2 Final Site Visit: following completion of all removal work and cleaning and sealing of all surfaces within the enclosure, but prior to removing hoarding, drop sheets or other containment barriers.

.2 If results of the site visits suggest that asbestos remains in the work area, re-clean in accordance with Section 3.2 and any additional direction provided by the Owner or Owner's Representative. Re-cleaning shall be at no additional cost to the Client.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Work on this project may involve disturbance of asbestos-containing materials (ACM) as identified in Section 1.8 below.

.2 Comply with the requirements of this Section when performing the following Work:

.1 The removal or disturbance of more than 1 m^2 of friable ACM. (NOTE: This includes demolition of the building without prior removal of more than 1 m^2 of friable ACM where present inside the building.)

.2 The spray application of sealant to friable ACM.

.3 Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable ACM, if the work is done by means of power tools that are not attached to dust-collecting devices equipped with HEPA filter.

1.2 SECTION INCLUDES

.1 Requirements and procedures for asbestos abatement of major amounts of ACM of the type described within (i.e., Type 3 Asbestos Operations).

1.3 REFERENCES

.1 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-1.205-2003, Sealer for Application to Asbestos-Fibre-Releasing Materials

.2 Canadian Standards Association (CSA International)

.3 Department of Justice Canada

.1 Canadian Environmental Protection Act (CEPA), 1999

.4 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS)

.5 Transport Canada (TC)

.1 Transportation of Dangerous Goods Act, 1992 (TDGA)

.6 Underwriters' Laboratories of Canada (ULC)

.7 U.S. Department of Health and Human Services/Centers for Disease Control and Prevention (CDC)/National Institute for Occupational Safety and Health (NIOSH)

.1 NIOSH 94-113-August 1994, NIOSH Manual of Analytical Methods (NMAM), 4th Edition

.8 Ontario Ministry of Labour, Immigration, Training and Skills Development (MLITSD)

.1 Occupational Health and Safety Act (OHSA)

.1 Ontario Regulation 278/05 – Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations

.9 Ontario Ministry of the Environment, Conservation and Parks (MECP)

.1 Environmental Protection Act (EPA)

.1 Reg. 347 – General – Waste Management

1.4 DEFINITIONS

.1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with a filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.

.2 Amended Water: water with a non-ionic surfactant wetting agent added to reduce water tension to allow wetting of fibres.

.3 Asbestos-Containing Materials (ACMs): materials identified under Existing Conditions Article, including fallen materials and settled dust.

.4 Asbestos Work Area: Area where actual removal of asbestos-containing materials takes place.

.5 Authorized Visitors: Engineer, Consultants or designated representatives, and representatives of regulatory agencies.

.6 Equivalent Measure: A constructor may vary a measure or procedure described in O. Reg. 278/05 as long as the measure or procedure, as varied, affords protection for the health and safety of workers that is at least equal to the protection that would be provided by complying with O. Reg. 278/05. The varied measure may not change the type of operation and it may not change the personal protective equipment as required under O. Reg. 278/05 for a given asbestos operation.

.7 Friable Material: material that when dry can be crumbled, pulverized or powdered by hand pressure and includes such material that is crumbled, pulverized or powdered.

.8 Occupied Area: any area of building or work site that is outside Asbestos Work Area.

.9 Polyethylene sheeting sealed with tape: Polyethylene sheeting of type and thickness specified sealed with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide continuous polyethylene membrane to protect underlying surfaces from water damage or damage by sealants, and to prevent escape of asbestos fibres through sheeting into clean area.

.10 DOP Test: testing method used to determine integrity of Negative Pressure unit using dioctyl phthalate (DOP) HEPA-filter leak test.

.11 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must be appropriate capacity for scope of work.

.12 Negative pressure: system that extracts air directly from work area, filters such extracted air through High Efficiency Particulate Air filtering system, and discharges this air directly outside work area to exterior of building.

.1 System to maintain minimum pressure differential of 0.02 inches of water relative to adjacent areas outside of work areas, be equipped with alarm to warn of system breakdown, and be equipped with instrument to continuously monitor and automatically record pressure differences.

.13 Airlock: system for permitting ingress or egress without permitting air movement between contaminated area and uncontaminated area, typically consisting of two curtained doorways at least 2 m apart.

.14 Curtained doorway: arrangement of closures to allow ingress and egress from one room to another while permitting minimal air movement between rooms, typically constructed as follows:

.1 Place two overlapping sheets of polyethylene over existing or temporarily framed doorway, secure each along top of doorway, secure vertical edge of one sheet along one vertical side of doorway, and secure vertical edge of other sheet along opposite vertical side of doorway.

.2 Reinforce free edges of polyethylene with duct tape and weight bottom edge to ensure proper closing.

.3 Overlap each polyethylene sheet at openings not less than 1.5 m on each side.

1.5 SUBMITTALS

.1 Before beginning work:

.2 Submit proof satisfactory to Owner or Owner's Representative that asbestos removal method will satisfy requirements for a Type 3 procedure or will qualify as an equivalent measure.

.1 The onus is on the Contractor to select the appropriate removal method to satisfy regulatory requirements and these specifications.

.3 Obtain from appropriate agency and submit to Owner or Owner's Representative necessary permits for transportation and disposal of asbestos waste. Ensure that dump operator is fully aware of hazardous nature of material being dumped, and proper methods of disposal. Submit proof satisfactory to Owner or Owner's Representative that suitable arrangements have been made to receive and properly dispose of asbestos waste.

.4 Provide to the Owner or Owner's Representative satisfactory proof that every worker has had instruction and training in the hazards of asbestos exposure, in personal hygiene including dress and showers, in entry and exit from the Asbestos Work Area, in all aspects of work procedures including glove bag procedures, and in the use, cleaning, and disposal of respirators and protective clothing. Training must meet the requirements of O. Reg. 278/05 made under the Occupational Health and Safety Act. Submit proof of training in the form of certificates for all workers (W253) and

supervisors (S253). NOTE: Where the building will be demolished without prior removal of >1m^2 of friable ACM inside then equipment operators involved in the demolition and waste removal process will be considered to be carrying out a Type 2 asbestos operation and the requirements of Section 02 82 11 will apply (e.g., training and personal protective equipment).

.5 Submit documentation including test results for sealer proposed for use.

.6 Submit Provincial/Territorial and/or local requirements for Notice of Project Form.

.7 Submit proof of Contractor's Asbestos Liability Insurance.

.8 Submit proof satisfactory to Owner or Owner's Representative that employees have respirator fitting and testing. Workers must be fit-tested (irritant smoke test) with respirator that is personally issued.

.9 Submit Worker's Compensation Board status and transcription of insurance.

.10 Submit documentation including test results, fire and flammability data, and Material Safety Data Sheets (MSDS) for chemicals or materials including but not limited to following:

.1 amended water; and

.2 slow-drying sealer.

1.6 QUALITY ASSURANCE

.1 Regulatory Requirements: comply with Federal, Provincial/Territorial and local requirements pertaining to asbestos, provided that in case of conflict among those requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at time work is performed.

.2 Health and Safety:

.1 Safety Requirements: worker and visitor protection.

.1 Protective equipment and clothing to be worn by workers while in Asbestos Work Area includes:

.1 Respirator equipped with HEPA filter cartridges or supplied-air type, personally issued to worker and marked as to efficiency and purpose, and acceptable to Authority having jurisdiction as suitable for type of asbestos and level of asbestos exposure in Asbestos Work Area. If disposable type filters are used, provide sufficient filters so that workers can install new filters following disposal of used filters and before re-entering contaminated areas.

.2 Disposable-type protective clothing that does not readily retain or permit penetration of asbestos fibres, consisting of full-body covering including head covering with snug-fitting cuffs at wrists, ankles, and neck.

.3 In the event of discrepancy between specifications and Table 2 of O. Reg. 278/05, the requirements of O. Reg. 278/05 apply.

.2 Requirements for each worker:

.1 Entry

.1 Remove street clothes in clean change room and put on respirator with new filters or reusable filters that have been tested as satisfactory, clean coveralls and head covers before entering Equipment and Access Rooms or Asbestos Work Area. Store street clothes, uncontaminated footwear, towels, and similar uncontaminated articles in clean change room.

.2 Exit

.1 With respirator on, remove protective clothing and dispose of as asbestos waste.

.2 Clean outside of respirator with soap and water while washing face and hands; remove respirator; remove filters and wet them and dispose of filters in container provided for purpose; and wash and rinse inside of respirator. When not in use in work area, store work footwear in Equipment and Access Room. Upon completion of asbestos abatement, dispose of footwear as contaminated waste or clean thoroughly inside and out using soap and water before removing from work area or from Equipment and Access Room.

.3 After washing and drying off, proceed to clean change room/area and dress in street clothes at end of each day's work, or in clean coveralls before eating, smoking, or drinking. If re-entering work area, follow procedures outlined in paragraphs above.

.4 Enter unloading room from outside dressed in clean coveralls to remove waste containers and equipment from Holding Room of Container and Equipment Decontamination Enclosure system. Workers must not use this system as means to leave or enter work area.

.3 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.

.4 Ensure workers are fully protected with respirators and protective clothing during preparation of system of enclosures prior to commencing actual asbestos abatement.

.5 Provide and post in Clean Change Room/Area and in Equipment and Access Room the procedures described in this Section, in both official languages.

.6 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.

.7 Visitor Protection:

.1 Provide protective clothing and approved respirators to Authorized Visitors to work areas.

.2 Instruct Authorized Visitors in the use of protective clothing, respirators and procedures.

.3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Asbestos Work Area.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Place materials defined as hazardous or toxic in designated containers.

.2 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.

.3 Disposal of asbestos waste generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Dispose of asbestos waste in sealed double thickness 6 ml bags or leak proof drums. Label containers with appropriate warning labels. NOTE: If the entire building is demolished without first removing identified ACM inside then all waste generated as part of the demolition will be considered to be ACM and should be disposed of as asbestos waste.

.4 Provide manifests describing and listing waste created. Transport containers by approved means to licenced landfill for burial.

1.8 EXISTING CONDITIONS

.1 Information pertaining to confirmed and potential ACMs to be handled, removed or otherwise disturbed and disposed of in the subject building has been provided.

.2 Notify Owner or Owner's Representative of ACM discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material pending instructions from Owner or Owner's Representative.

.3 Asbestos is present in the following building materials in the subject building as summarized in the designated substance survey report (existing report) entitled, *Designated Substance Survey, McTavish Recreation Centre, Pearl, Ontario,* dated December 22, 2009:

.1 Mud joint compound (MJC) associated with finished drywall and limited to the old construction portion of the building (room 9 in the existing report) contains 1-10% Chrysotile asbestos (NOTE: The existing report classifies the MJC as a friable ACM; however, a review of the photographs associated with the existing report do not show that the MJC was in poor condition (e.g., friable and crumbling) and O. Reg. 278/05 provides specific direction for AC MJC based on the amount of associated drywall to be disturbed. These specifications have been prepared based on the requirements of O. Reg. 278/05 with respect to disturbance of AC MJC associated with finished drywall.);

.2 Non-friable 12"x12" cream/ brown/ gold pattern vinyl floor tile contains 1-10% Chrysotile asbestos; and

.3 Friable air cell pipe insulation on pipe straights contains 50-75% Chrysotile asbestos (estimated amount is >1 m^2).

.4 Figures, tables and reports pertaining to ACM to be handled, removed, or otherwise disturbed and disposed of during this project are provided for general information only and are not necessarily representative of all ACM covered within the scope of this project. Contractors are to satisfy themselves as to the exact quantity and location of ACM for disturbance or removal as part of the current project PRIOR TO BID CLOSE.

1.9 SCHEDULING

.1 Not later than ten (10) days before beginning Work on this Project notify following in writing:

.1 Ontario Ministry of Labour, Immigration, Training and Skills Development.

.2 Disposal Authority.

.2 Inform sub-trades of presence of friable asbestos-containing materials identified in Existing Conditions.

.3 Submit to Owner or Owner's Representative copy of notifications prior to start of Work.

.4 Contractor is responsible for scheduling of asbestos abatement work in order to achieve the desired schedule.

.5 Co-ordinate with Owner or Owner's Representatives and other contractors when scheduling work.

1.10 OWNER'S INSTRUCTIONS

.1 Before beginning Work, provide to Owner or Owner's Representative satisfactory proof that every worker has had instruction and training in hazards of asbestos exposure, in personal hygiene including dress and showers, in entry and exit from Asbestos Work Area, in aspects of work procedures, and in use, cleaning, and disposal of respirators and protective clothing.

.2 Instruction and training related to respirators includes, at minimum:

.1 Proper fitting of equipment.

.2 Inspection and maintenance of equipment.

.3 Disinfecting of equipment.

.4 Limitations of equipment.

.3 Instruction and training must be provided by competent, qualified person.

.4 Supervisory personnel to complete required training.

Part 2 Products

2.1 MATERIALS

.1 Polyethylene: minimum 0.15 mm thick unless otherwise specified; in sheet size to minimize joints.

.2 FR polyethylene: minimum 0.15 mm thick, woven fibre reinforced fabric bonded both sides with polyethylene.

.3 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under both dry conditions and wet conditions using amended water.

.4 Wetting agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether, or other material approved by Owner or Owner's Representative, mixed with water in concentration to provide adequate penetration and wetting of asbestos-containing material.

.5 Asbestos waste containers: Metal or fibre - type acceptable to dump operator with tightly fitting covers and 0.15 mm minimum thickness sealable polyethylene liners.

.1 Label containers in accordance with requirements of O.Reg. 278/05 and O.Reg. 347/90. Label in both official languages.

.6 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual asbestos fibres.

Part 3 Execution

3.1 PREPARATION

.1 Work Areas:

.1 Shut off and isolate air handling and ventilation systems to prevent fibre dispersal to other building areas during work phase. Conduct smoke tests to ensure that duct work is airtight. Seal and caulk joints and seams of active return air ducts within Asbestos Work Area.

.2 Pre-clean moveable furniture and equipment within proposed work areas (unless the owner has instructed to dispose of) using HEPA vacuum and remove from work areas to temporary location as specified by Owner.

.3 Unless the area will not be entered by any other workers following abatement and prior to demolition: Put negative pressure system in operation and operate continuously from time first polyethylene is installed to seal openings until final completion of work including final cleanup. Provide continuous monitoring of pressure difference using automatic recording instrument.

.4 Seal off openings such as corridors, doorways, windows, skylights, ducts, grilles, and diffusers, with polyethylene sheeting sealed with tape and/or other means as described for the project (e.g. erection of a semi-permanent partition wall).

.5 Cover wall surfaces outside of and adjacent to the work area with one layer of 6 mil polyethylene sheeting sealed with tape.

.6 Build airlocks at entrances to and exits from work areas so that work areas are always closed off by one curtained doorway when workers enter or exit.

.7 At each access to work areas install warning signs in both official languages in upper case "Helvetica Medium" letters reading as follows where number in parentheses indicates font size to be used: "CAUTION ASBESTOS HAZARD AREA (25 mm) NO UNAUTHORIZED ENTRY (19 mm) WEAR ASSIGNED PROTECTIVE EQUIPMENT (19 mm) BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM (7 mm)".

.8 After work area isolation, remove heating, ventilating, and air conditioning filters, pack in sealed plastic bags 0.15 mm minimum thick and treat as contaminated asbestos waste. Remove ceiling - mounted objects such as lights, partitions, other fixtures not previously sealed off, and other objects that interfere with asbestos removal, as directed by Owner or Owner’s Representative. Use localized water spraying during fixture removal to reduce fibre dispersal.

.9 Maintain emergency and fire exits from work areas, or establish alternative exits satisfactory to Ontario Fire Marshall or other authority having jurisdiction.

.10 Where application of water is required for wetting asbestos-containing materials, shut off electrical power, provide 24 volt safety lighting and ground fault interrupter circuits on power source for electrical tools, in accordance with applicable CSA Standard. Ensure safe installation of electrical lines and equipment.

.2 Worker Decontamination Enclosure System:

.1 If the building will be demolished without first removing the identified ACM inside (i.e., the demolition will be considered an outdoor Type 3 asbestos operation) then the Worker Decontamination Enclosure System is to be constructed within reasonable proximity to the Work Area and access to the Worker Decontamination System should be arranged such that the walkway is maintained a part of the Work Area (i.e., it should be isolated using barriers or fencing as appropriate and restricted for use only by Asbestos Workers or Authorized Visitors). Worker Decontamination Enclosure System includes Equipment and Access Room, Shower Room, and Clean Room, as follows:

.1 Equipment and Access Room: build Equipment and Access Room between Shower Room and work areas, with two curtained doorways, one to Shower Room and one to work areas. Install waste receptor, and storage facilities for workers' shoes and protective clothing to be re-worn in work areas. Build Equipment and Access Room large enough to accommodate specified facilities, other equipment needed, and at least one worker allowing him /her sufficient space to undress comfortably.

.2 Worker Wash-up Room (for work involving non-friable ACM): build Wash-up Room between Clean Room and Equipment and Access Room, with two curtained doorways, one to Clean Room and one to Equipment and Access Room. Provide facilities for workers to wash face and hands.

Pump waste water through 5 micrometre filter system acceptable to Owner or Owner's Representative before directing into drains. Provide soap, clean towels, and appropriate containers for disposal of used respirator filters.

.3 Shower Room (for work involving friable ACM): build Shower Room between Clean Room and Equipment and Access Room, with two curtained doorways, one to Clean Room and one to Equipment and Access Room. Provide one shower for every five workers. Provide constant supply of hot and cold or warm water. Consult with Owner on location of available cold and hot water sources. Provide piping and connect to water sources and drains. Pump waste water through 5 micrometre filter system acceptable to Owner or Owner's Representative before directing into drains. Provide soap, clean towels, and appropriate containers for disposal of used respirator filters.

.4 Clean Room: build Clean Room between Wash-up/Shower Room and clean areas outside of enclosures, with two curtained doorways, one to outside of enclosures and one to Shower Room. Provide lockers or hangers and hooks for workers' street clothes and personal belongings. Provide storage for clean protective clothing and respiratory equipment. Install mirror to permit workers to fit respiratory equipment properly.

.3 Container and Equipment Decontamination Enclosure System:

.1 Container and Equipment Decontamination Enclosure System consists of Staging Area within work area, Washroom, Holding Room, and Unloading Room. Purpose of system is to provide means to decontaminate waste containers, scaffolding, waste and material containers, vacuum and spray equipment, and other tools and equipment for which Worker Decontamination Enclosure System is not suitable.

.1 Staging Area: designate Staging Area in work area for gross removal of dust and debris from waste containers and equipment, labelling and sealing of waste containers, and temporary storage pending removal to Washroom. Equip Staging Area with curtained doorway to Washroom.

.2 Washroom: build Washroom between Staging Area and Holding Room with two curtained doorways, one to Staging Area and one to Holding Room. Provide high - pressure low - volume sprays for washing of waste containers and equipment. Pump waste water through 5 micrometre filter system before directing into drains. Provide piping and connect to water sources and drains.

.3 Holding Room: build Holding Room between Washroom and Unloading Room, with two curtained doorways, one to Washroom and one to Unloading Room. Build Holding Room sized to accommodate at least two waste containers and largest item of equipment used.

.4 Unloading Room: build Unloading Room between Holding Room and outside, with two curtained doorways, one to Holding Room and one to outside.

.4 Construction of Decontamination Enclosures:

.1 Build suitable framing for enclosures or use existing rooms where convenient, and line with polyethylene sheeting sealed with tape. Use one layer of FR polyethylene on floors.

.2 Build curtained doorways between enclosures so that when people move through or when waste containers and equipment are moved through doorway, one of two closures comprising doorway always remains closed.

.5 Separation of Work Areas from Occupied Areas:

.1 Separate parts of building required to remain in use from parts of building used for asbestos abatement by means of airtight barrier system constructed as follows:

.1 Build suitable floor to ceiling lumber or metal stud framing, cover with polyethylene sheeting sealed with tape, and apply 9 mm minimum thick plywood. Seal joints between plywood sheets and between plywood and adjacent materials with surface film forming type sealer, to create airtight barrier.

.2 Cover plywood barrier with polyethylene sealed with tape, as specified for work areas.

.6 Maintenance of Enclosures:

.1 Maintain enclosures in tidy condition.

.2 Ensure that barriers and polyethylene linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.

.3 Visually inspect enclosures at beginning of each working period.

.4 Use smoke methods to test effectiveness of barriers when directed by Owner or Owner's Representative.

.7 Do not begin Asbestos Abatement work until:

.1 Arrangements have been made for disposal of waste.

.2 For wet stripping techniques, arrangements have been made for containing, filtering, and disposal of waste water.

.3 Work areas and decontamination enclosures and parts of building required to remain in use are effectively segregated.

.4 Tools, equipment, and materials waste containers are on hand.

.5 Arrangements have been made for building security.

.6 Warning signs are displayed where access to contaminated areas is possible.

.7 Notifications have been completed and other preparatory steps have been taken.

3.2 SUPERVISION

.1 Minimum of one Supervisor for every ten workers is required.

.2 Approved Supervisor must remain within Asbestos Work Area during disturbance, removal, or other handling of asbestos-containing materials.

3.3 ASBESTOS REMOVAL

.1 Before removing asbestos:

.1 Prepare site.

.2 Spray asbestos material with water containing specified wetting agent, using airless spray equipment capable of providing "mist" application to prevent release of fibres. Saturate asbestos material sufficiently to wet it to substrate without causing excess dripping. Spray asbestos material repeatedly during work process to maintain saturation and to minimize asbestos fibre dispersion.

.2 Remove asbestos material in small sections. Do not allow asbestos materials to dry out. As it is being removed pack material in sealable plastic bags 0.15 mm minimum thick and place in labelled containers for transport.

.3 Seal filled containers. Clean external surfaces thoroughly by wet sponging. Remove from immediate working area to Staging Area. Clean external surfaces thoroughly again by wet sponging before moving containers to decontamination Washroom. Wash containers thoroughly in decontamination Washroom, and store in Holding Room pending removal to Unloading Room and outside. Ensure that containers are removed from Holding Room by workers who have entered from uncontaminated areas dressed in clean coveralls.

.4 After completion of stripping work, wire brush and wet-sponge surfaces from which asbestos has been removed to remove visible material. During this work keep surfaces wet.

.5 Unless the area will not be entered after removal and is scheduled for demolition, then after wire brushing and wet sponging to remove visible asbestos, wet clean entire work area including Equipment and Access Room, and equipment used in process. After 24 hour period to allow for dust settling, wet clean these areas and objects again. During this settling period no entry, activity, or ventilation will be permitted. After second 24 hour period under same conditions, clean these areas and objects again using HEPA vacuum followed by wet cleaning. After site visit by Owner or Owner’s Representative, apply continuous coat of slow drying sealer to surfaces of work area. Allow at least 16 hours with no entry, activity, ventilation, or disturbance other than operation of negative pressure units during this period.

3.4 FINAL CLEANUP

.1 Following cleaning specified in Section 3.3 above, and, for areas that will be re-occupied, when air sampling shows that asbestos levels on both sides of seals do not exceed 0.01 fibres/cc as determined by membrane filter method at 400-500X magnification phase contrast illumination, as described in NIOSH 94-113 or equivalent, proceed with final cleanup.

.2 Remove polyethylene sheet by rolling it away from walls to centre of work area. Vacuum visible asbestos-containing particles observed during cleanup, immediately, using HEPA vacuum equipment.

.3 Place polyethylene seals, tape, cleaning material, clothing, and other contaminated waste in plastic bags and sealed labelled waste containers for transport.

.4 Include in clean-up Work areas, Equipment and Access Room, Washroom, Shower Room, and other contaminated enclosures.

.5 Include in clean-up sealed waste containers and equipment used in Work and remove from work areas, via Container and Equipment Decontamination Enclosure System, at appropriate time in cleaning sequence.

.6 Conduct final check to ensure that no dust or debris remains on surfaces as result of dismantling operations. Repeat cleaning using HEPA vacuum equipment, or wet cleaning methods where feasible to remove visible dust or debris or, for outdoor areas, by appropriate means such as shovel or rake.

.7 As work progresses, and to prevent exceeding available storage capacity on site, remove sealed and labelled containers containing asbestos waste and dispose of to authorized disposal area in accordance with requirements of disposal authority. Ensure that each shipment of containers transported to dump is accompanied by Contractor's representative to ensure that dumping is done in accordance with governing regulations.

3.5 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS

.1 When cleanup is complete and for areas that will be re-occupied:

.1 Re-establish objects and furniture moved to temporary locations in course of Work, in their proper positions.

.2 Re-secure mounted objects removed in course of Work in their former positions.

.3 Re-establish mechanical and electrical systems in proper working order. Install new filters.

.4 Repair or replace objects damaged in the course of Work, as directed by Owner or Owner’s Representative.

3.6 AIR MONITORING

.1 From beginning of Work until completion of cleaning operations, Owner or Owner’s Representative reserves the right to take air samples on daily basis outside of work area enclosure.

.1 Contractor will be responsible for monitoring inside enclosure in accordance with applicable Provincial Occupational Health and Safety Regulations.

.2 Use results of air monitoring inside work area to establish type of respirators to be used. Workers may be required to wear sample pumps for up to full-shift periods.

.1 If fibre levels are above safety factor of respirators in use, stop abatement, apply means of dust suppression, and use higher safety factor in respiratory protection for persons inside enclosure.

.2 If air monitoring shows that areas outside work area enclosures are contaminated, enclose, maintain and clean these areas, in same manner as that applicable to work areas.

3.7 SITE VISITS

.1 Perform site visits of Asbestos Work Area to confirm compliance with specification and governing authority requirements. Deviations from these requirements that have not been approved in writing by Owner or Owner's Representative may result in Work stoppage, at no cost to Owner.

.2 Owner or Owner's Representative will observe Work for:

.1 Adherence to specific procedures and materials.

.2 Final cleanliness and completion.

.3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

.3 When asbestos leakage from Asbestos Work Area has occurred or is likely to occur Owner or Owner's Representative may order Work shutdown.

.1 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Comply with requirements of this Section when performing the following Work:

.1 Removing lead-containing coatings with a chemical gel or paste and fibrous laminated cloth wrap.

.2 Removing or disturbing lead-containing coatings using a power tool that has an effective dust collection system equipped with a HEPA filter.

.3 Removing or disturbing lead-containing coatings using non-powered hand tools, other than manual scraping or sanding.

.4 Application of a sealant or encapsulant to lead-containing coatings using a brush, roller or airless sprayer.

1.2 EXISTING CONDITIONS

.1 Information pertaining to lead-containing materials (LCM) to be handled, removed, or otherwise disturbed and disposed of has been provided. Information is for general purposes only and is not necessarily representative of all LCM covered within the scope of this project. Contractors are to satisfy themselves as to the exact quantity and location of LCM for disturbance or removal as part of the current project prior to bid close.

.2 The following materials in the subject building were identified as lead-containing:

.1 Light brown paint on plaster;

.2 Cream paint on plaster;

.3 Light grey paint on concrete;

.4 Turquoise paint on plaster;

.5 Yellow paint on plaster;

.6 Grey/ black paint on plaster; and

.7 Cream paint on exterior wood.

.3 Lead-containing paints on plaster described above have been sampled and submitted for toxicity characteristic leaching procedure (TCLP) analysis. Lead-containing paints on plaster have been found to meet the criteria under Ontario Regulation 347, General - Waste Management (O. Reg. 347) to be disposed of as a non-hazardous waste. It is reasonable to treat lead-painted plaster and concrete waste resulting from the demolition activities as non-hazardous waste.

.4 Lead-containing paint on exterior wood described above has been sampled and submitted for TCLP analysis. Lead-containing paint on exterior wood has been found to exceed the criteria under Ontario Regulation 347, General - Waste Management (O. Reg. 347) and it should be disposed of as hazardous waste. Lead-painted wood waste resulting from the demolition activities is considered hazardous waste.

1.3 SECTION INCLUDES

.1 Requirements and procedures for minor removal or disturbance of lead-containing materials.

1.4 REFERENCES

.1 Department of Justice Canada (Jus)

.1 Canadian Environmental Protection Act, 1999 (CEPA)

.2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Safety Data Sheets (SDS)

.3 Transport Canada (TC)

.1 Transportation of Dangerous Goods Act, 1992 (TDGA)

.2 Transportation of Dangerous Goods Regulations (SOR/2012-245)

.4 Underwriters' Laboratories of Canada (ULC)

.5 Ontario Ministry of Labour, Immigration, Training and Skills Development (MLITSD)

.1 Occupational Health and Safety Act, 1990 (OHSA)

.2 Guideline – Lead on Construction Projects

.6 Ontario Ministry of Environment Conservation and Parks (MECP)

.1 Environmental Protection Act, 1990 (EPA)

.2 O. Reg. 347 - General - Waste Management

1.5 DEFINITIONS

.1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any dimension at 99.97% efficiency.

.2 Lead Work Area: area where work takes place which will, or may disturb lead-containing paint.

.3 Authorized Visitors: Architect, Engineer, Consultant or designated representatives, and representatives of regulatory agencies.

.4 Occupied Area: any area of building or work site that is outside the Lead Work Area.

.5 Polyethylene: polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide protection and isolation.

.6 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have appropriate capacity for scope of work.

1.6 SUBMITTALS

.1 Submit proof satisfactory to Owner or Owner's Representative that lead coating removal methods will satisfy requirements for Type 1 lead operations.

.1 If, in the opinion of the Owner or Owner's Representative, the Contractor's proposed work methods do not meet the intent of this section, carry out work in accordance with Lead Abatement – Intermediate Precautions as appropriate.

.2 The onus is on the Contractor to select the appropriate removal method to satisfy regulatory requirements and these specifications.

.2 Submit to Owner necessary permits for transportation and disposal of lead-containing waste and proof that lead-containing waste has been received and properly disposed including, but not limited to, MECP certificates of Approval for carrier and receiver and waste manifests.

.3 Submit proof satisfactory to Owner that employees have had instruction on hazards of lead exposure, respirator use, dress, entry and exit from Lead Work Area, and aspects of work procedures and protective measures.

.4 Submit Workplace Safety and Insurance Board status and transcription of insurance.

.5 Submit documentation including test results, fire and flammability data, and Safety Data Sheets (SDS) for chemicals or materials.

.6 Written work procedure for disturbance of lead-containing materials.

1.7 QUALITY ASSURANCE

.1 Regulatory Requirements: comply with Federal, Provincial and local requirements pertaining to lead, provided that in case of conflict among these requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at the time work is performed.

.2 Health and Safety:

.1 Safety Requirements: worker and visitor protection.

.1 Protective equipment and clothing are not required for Type 1 lead operations; however, if a worker requests respiratory protection, the following is to be supplied by Contractor and worn by workers while in the Lead Work Area:

.1 Non-powered reusable or replaceable filter-type respirator equipped with HEPA filter cartridges, personally issued to worker and marked as to efficiency and purpose, suitable for protection against lead and acceptable to Provincial Authority having jurisdiction (i.e., P/N/R 95, 99 or 100).

.2 Disposable-type protective clothing that does not readily retain or permit penetration of lead dust, consisting of full-body covering including head covering with snug-fitting cuffs at wrists, ankles, and neck.

.3 In the event of discrepancy between specifications and the MOL Guideline – Lead on Construction Projects, the requirements of the MOL Guideline – Lead on Construction Projects apply.

.2 Eating, drinking, chewing, and smoking are not permitted in Lead Work Area.

.3 Before leaving Lead Work Area, dispose of protective clothing as contaminated waste as specified.

.4 Ensure workers wash hands and face when leaving Lead Work Area. Facilities for washing shall be located in proximity to each work area and in a location that does not interfere with building day to day operations.

.5 Ensure that no person required to enter a Lead Work Area has facial hair that affects seal between respirator and face.

.2 Visitor Protection:

.1 Provide protective clothing and approved respirators to Authorized Visitors to work areas.

.2 Instruct Authorized Visitors in the use of protective clothing, respirators and procedures.

.3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Lead Work Area.

1.8 WASTE MANAGEMENT AND DISPOSAL

.1 Notify intended waste disposal facility of lead in waste materials.

.1 Provide copies of laboratory test results, if requested.

.2 Complete and submit Contaminants Release Form and any other required paperwork to facilitate disposal.

.2 Dispose of building materials containing lead and identified as non-leachate toxic (Please refer to Section 3.3 below) as solid non-hazardous waste.

.3 Dispose of building materials containing lead and identified as leachate toxic (Please refer to Section 3.3 below) as hazardous waste. Leachate toxic waste must be transported by a properly licensed carrier to a licensed disposal facility as per the requirements of O. Reg. 347. NOTE: Identified leachate toxic materials (i.e., exterior cream painted wood) must be removed from the building using appropriate methods prior to any demolition activities.

.4 Where possible, separate lead painted metals from regular waste stream for recycling.

.5 Dispose of lead materials in accordance with federal, provincial and municipal requirements.

1.9 SCHEDULING

.1 Contractor is responsible for scheduling of lead abatement work in order to achieve the desired renovation schedule.

.2 Co-ordinate with Owner or Owner's Representatives and other contractors when scheduling work.

1.10 OWNER'S INSTRUCTIONS

.1 Before beginning Work, provide Owner or Owner's Representative satisfactory proof that every worker has had instruction and training in hazards of lead exposure, in personal hygiene and work practices, in the use, cleaning, and disposal of respirators and protective clothing.

.2 Instruction and training related to respirators includes, at minimum:

.1 Fitting of equipment.

.2 Inspection and maintenance of equipment.

.3 Disinfecting of equipment.

.4 Limitations of equipment.

.3 Instruction and training must be provided by competent, qualified person.

Part 2 Products

2.1 MATERIALS

.1 Drop and Enclosure Sheets.

.1 Polyethylene: 0.15 mm thick.

.2 FR polyethylene: 0.15 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.

.2 Waste Containers: contain waste in two separate containers.

.1 Inner container: 0.15 mm thick sealable polyethylene bag.

.2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.

.3 Labelling requirements: affix preprinted cautionary lead warning, in both official languages, that is visible when ready for removal to disposal of recycling site.

Part 3 Execution

3.1 SUPERVISION

.1 Minimum of one Supervisor for every ten workers is required.

.2 Approved Supervisor must remain within Lead Work Area during disturbance, removal, or other handling of lead containing materials.

3.2 PREPARATION AND PROCEDURE

.1 Before beginning Work, at each access to Lead Work Area, install warning signs with the following information:

.1 There is a lead dust, fume or mist hazard.

.2 Access to the work area is restricted to authorized persons.

.2 Cover ground in the Work Area with polyethylene drop sheets to prevent the spread of lead-containing paint chips, dust and debris. Seal the polyethylene drop sheet in place using tape.

.3 Before beginning Work pre-clean and remove visible dust from surfaces in work area where dust is likely to be disturbed during course of work.

.1 Use HEPA vacuum, or damp cloths where damp cleaning does not create hazard and is otherwise appropriate.

.2 Do not use compressed air to clean up or remove dust from any surface.

.4 Prevent spread of dust from Lead Work Area using measures appropriate to work to be done.

.5 Perform work in a manner to reduce dust creation to lowest levels practicable.

.6 Work is subject to visual assessment. Contamination of surrounding areas indicated by visual assessment will require complete enclosure and clean-up of affected areas.

3.3 WASTE CHARACTERIZATION

.1 Painted lead-containing plaster materials were identified as non-leachate toxic. NOTE: It is considered reasonable to treat lead-painted concrete the same as lead-painted plaster.

.2 Painted lead-containing wood was identified as leachate toxic.

.3 TCLP results are provided under separate cover.

3.4 CLEAN-UP

.1 Arrange for transportation and disposal of all removed lead-containing paint (Please refer to Section 1.8 above).

.2 Clean-up:

.1 Frequently during Work and immediately after completion of work, clean up lead containing dust and waste using HEPA vacuum.

.2 Place lead containing dust and waste in sealed dust-tight waste bags or drums. Treat drop sheets and disposable protective clothing as lead waste and wet and fold to contain dust and then place in waste bags.

.3 Immediately before their removal from Lead Work Area and disposal, clean exterior of each filled waste bag or drum using damp cloths or HEPA vacuum. If using bags, place in second clean waste bag.

.4 Seal and remove waste from site. Dispose in accordance with requirements of Provincial and Federal authority having jurisdiction. Ensure that dump operator is fully aware of nature of material to be dumped and that guidelines and regulations for lead waste disposal are followed.

.5 Perform final thorough clean-up of Lead Work Areas and adjacent areas affected by Work using HEPA vacuum.

3.5 SITE VISITS

.1 The following site visits will be completed by the Owner or Owner's Representative over the duration of the work. The Contractor is to provide minimum 24 hours notice to the Owner or Owner's Representative to arrange for the site visits. Lead Abatement Work shall not proceed until each site visit is completed and approval to proceed is obtained from the Owner or Owner's Representative.

.1 Initial site visit: following completion of preparation of work area but prior to the commencement of lead-containing material removal.

.2 Final site visit: following completion of all removal work and cleaning and sealing of all surfaces within the enclosure, but prior to removing hoarding.

.2 If results of the visual assessment suggest that lead-containing materials remain in the work area, re-clean in accordance with section 3.4 and any additional direction provided by the Owner or Owner's Representative. Re-cleaning shall be at no additional cost to the Client.

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

.1 Comply with requirements of this Section when performing the following Work:

.1 Removing or disturbing lead-containing materials by scraping or sanding using non-powered hand tools.

.2 Manual demolition of lead-painted building materials by striking with a sledgehammer or similar tool. NOTE: Demolition of a building that contains identified lead-painted building materials can reasonably be considered to be equivalent to the work described herein.

1.2 EXISTING CONDITIONS

.1 Information pertaining to lead-containing materials (LCM) to be handled, removed, or otherwise disturbed and disposed of has been provided. Information is for general purposes only and is not necessarily representative of all LCM covered within the scope of this project. Contractors are to satisfy themselves as to the exact quantity and location of LCM for disturbance or removal as part of the current project prior to bid close.

.2 The following materials in the subject building were identified as lead-containing:

.1 Light brown paint on plaster;

.2 Cream paint on plaster;

.3 Light grey paint on concrete;

.4 Turquoise paint on plaster;

.5 Yellow paint on plaster;

.6 Grey/ black paint on plaster; and

.7 Cream paint on exterior wood.

.3 Lead-containing paints on plaster described above have been sampled and submitted for toxicity characteristic leaching procedure (TCLP) analysis. Lead-containing paints on plaster have been found to meet the criteria under Ontario Regulation 347, General - Waste Management (O. Reg. 347) to be disposed of as a non-hazardous waste. It is reasonable to treat lead-painted plaster and concrete waste resulting from the demolition activities as non-hazardous waste.

.4 Lead-containing paint on exterior wood described above has been sampled and submitted for TCLP analysis. Lead-containing paint on exterior wood has been found to exceed the criteria under Ontario Regulation 347, General - Waste Management (O. Reg. 347) and it should be disposed of as hazardous waste. Lead-painted wood waste resulting from the demolition activities is considered hazardous waste.

1.3 SECTION INCLUDES

.1 Requirements and procedures for intermediate removal or disturbance of lead-containing materials.

1.4 REFERENCES

.1 Department of Justice Canada (Jus)

.1 Canadian Environmental Protection Act, 1999 (CEPA)

.2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Safety Data Sheets (SDS)

.3 Transport Canada (TC)

.1 Transportation of Dangerous Goods Act, 1992 (TDGA)

.2 Transportation of Dangerous Goods Regulations (SOR/2012-245)

.4 Underwriters' Laboratories of Canada (ULC)

.5 Ontario Ministry of Labour, Immigration, Training and Skills Development (MLITSD)

.1 Occupational Health and Safety Act, 1990 (OHSA)

.2 Guideline – Lead on Construction Projects

.6 Ontario Ministry of Environment Conservation and Parks (MECP)

.1 Environmental Protection Act, 1990 (EPA)

.2 O. Reg. 347, General - Waste Management

1.5 DEFINITIONS

.1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any dimension at 99.97% efficiency.

.2 Lead Work Area: area where work takes place which will, or may disturb lead-containing paint.

.3 Authorized Visitors: Architect, Engineer, Consultant or designated representatives, and representatives of regulatory agencies.

.4 Occupied Area: any area of building or work site that is outside the Lead Work Area.

.5 Polyethylene: polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide protection and isolation.

.6 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have appropriate capacity for scope of work.

1.6 SUBMITTALS

.1 Submit proof satisfactory to Owner or Owner's Representative that lead coating removal methods will satisfy requirements for Type 2 lead operations.

.1 If, in the opinion of the Owner or Owner's Representative, the Contractor's proposed work methods do not meet the intent of this section, carry out work in accordance with Lead Abatement – Maximum Precautions as appropriate.

.2 The onus is on the Contractor to select the appropriate removal method to satisfy regulatory requirements and these specifications.

.2 Submit to Owner necessary permits for transportation and disposal of lead-containing waste and proof that lead-containing waste has been received and properly disposed including, but not limited to, MECP certificates of Approval for carrier and receiver and waste manifests.

.3 Submit proof satisfactory to Owner that employees, including equipment operators who will be involved in the demolition and removal of waste, have had instruction on hazards of lead exposure, respirator use, dress, entry and exit from Lead Work Area, and aspects of work procedures and protective measures.

.4 Submit Workplace Safety and Insurance Board status and transcription of insurance.

.5 Submit documentation including test results, fire and flammability data, and Safety Data Sheets (SDS) for chemicals or materials.

.6 Written work procedure for disturbance of lead-containing materials.

1.7 QUALITY ASSURANCE

.1 Regulatory Requirements: comply with Federal, Provincial and local requirements pertaining to lead, provided that in case of conflict among these requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at the time work is performed.

.2 Health and Safety:

.1 Safety Requirements: worker and visitor protection.

.1 Protective equipment and clothing are worn by workers and visitors while in the Lead Work Area:

.1 Non-powered reusable or replaceable filter-type respirator equipped with HEPA filter cartridges, personally issued to worker and marked as to efficiency and purpose, suitable for protection against lead and acceptable to Provincial Authority having jurisdiction (i.e., P/N/R 95, 99 or 100).

.2 Disposable-type protective clothing that does not readily retain or permit penetration of lead dust, consisting of full-body covering including head covering with snug-fitting cuffs at wrists, ankles, and neck.

.2 Eating, drinking, chewing, and smoking are not permitted in Lead Work Area.

.3 Before leaving Lead Work Area, dispose of protective clothing as contaminated waste as specified.

.4 Ensure workers wash hands and face when leaving Lead Work Area. Facilities for washing shall be located in proximity to each work area and in a location that does not interfere with building day to day operations.

.5 Ensure that no person required to enter a Lead Work Area has facial hair that affects seal between respirator and face.

.2 Visitor Protection:

.1 Provide protective clothing and approved respirators to Authorized Visitors to work areas.

.2 Instruct Authorized Visitors in the use of protective clothing, respirators and procedures.

.3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Lead Work Area.

1.8 WASTE MANAGEMENT AND DISPOSAL

.1 Notify intended waste disposal facility of lead in waste materials.

.1 Provide copies of laboratory test results, if requested.

.2 Complete and submit Contaminants Release Form and any other required paperwork to facilitate disposal.

.2 Dispose of building materials containing lead and identified as non-leachate toxic (Please refer to Section 3.3 below) as solid non-hazardous waste.

.3 Dispose of building materials containing lead and identified as leachate toxic (Please refer to Section 3.3 below) as hazardous waste. Leachate toxic waste must be transported by a properly licensed carrier to a licensed disposal facility as per the requirements of O. Reg. 347. NOTE: Identified leachate toxic materials (i.e., exterior cream painted wood) must be removed from the building using appropriate methods prior to any demolition activities.

.4 Where possible, separate lead painted metals from regular waste stream for recycling.

.5 Dispose of lead materials in accordance with federal, provincial and municipal requirements.

1.9 SCHEDULING

.1 Contractor is responsible for scheduling of lead abatement work in order to achieve the desired renovation schedule.

.2 Co-ordinate with Owner or Owner’s Representatives and other contractors when scheduling work.

1.10 OWNER'S INSTRUCTIONS

.1 Before beginning Work, provide Owner satisfactory proof that every worker has had instruction and training in hazards of lead exposure, in personal hygiene and work practices, in the use, cleaning, and disposal of respirators and protective clothing.

.2 Instruction and training related to respirators includes, at minimum:

.1 Fitting of equipment.

.2 Inspection and maintenance of equipment.

.3 Disinfecting of equipment.

.4 Limitations of equipment.

.3 Instruction and training must be provided by competent, qualified person.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Drop and Enclosure Sheets.

.1 Polyethylene: 0.15 mm thick.

.2 FR polyethylene: 0.15 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.

.2 Waste Containers: contain waste in two separate containers.

.1 Inner container: 0.15 mm thick sealable polyethylene bag.

.2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.

.3 Labelling requirements: affix preprinted cautionary lead warning, in both official languages, that is visible when ready for removal to disposal of recycling site.

PART 3 EXECUTION

3.1 SUPERVISION

.1 Minimum of one Supervisor for every ten workers is required.

.2 Approved Supervisor must remain within Lead Work Area during disturbance, removal, or other handling of lead containing materials.

3.2 PREPARATION AND PROCEDURES

.1 Work Area:

.1 Before beginning Work, at each access to Lead Work Area, install warning signs with the following information:

.1 There is a lead dust, fume or mist hazard.

.2 Access to the work area is restricted to authorized persons.

.3 Respirators must be worn in the Work Area.

.2 Isolate building HVAC system to prevent dust dispersal into the building.

.3 Before beginning Work pre-clean and remove visible dust from fixed casework and equipment surfaces in work area where dust is likely to be disturbed during course of work.

.1 Use HEPA vacuum, or damp cloths where damp cleaning does not create hazard and is otherwise appropriate.

.2 Do not use compressed air to clean up or remove dust from any surface.

.4 Cover fixed casework and equipment with polyethylene sheeting sealed with tape.

.5 Cover ground inside of the Work Area with polyethylene sheeting sealed in place with tape.

.6 Seal off openings into the building with polyethylene sheeting sealed with tape.

.7 Create a barrier for the Work Area to prevent entry of unauthorized persons.

.8 Visually inspect Work Area and barriers at beginning of each working period.

.2 Prevent spread of dust from Lead Work Area using measures appropriate to work to be done. This includes the use of drop sheets for all work that will produce dust, chips or debris containing lead.

.3 Perform work in a manner to reduce dust creation to lowest levels practicable.

.4 Work is subject to visual assessment. Contamination of surrounding areas indicated by visual assessment will require complete enclosure and clean-up of affected areas.

3.3 WASTE CHARACTERIZATION

.1 Painted lead-containing plaster materials were identified as non-leachate toxic. NOTE: It is considered reasonable to treat lead-painted concrete the same as lead-painted plaster.

.2 Painted lead-containing wood was identified as leachate toxic.

.3 TCLP results are provided under separate cover.

3.4 CLEAN-UP

.1 Arrange for transportation and disposal of all removed lead-containing paint (Please refer to Section 1.8 above).

.2 Clean-up:

.1 Frequently during Work and immediately after completion of work, clean up lead containing dust and waste using HEPA vacuum.

.2 Place lead containing dust and waste in sealed dust-tight waste bags or drums. Treat drop sheets and disposable protective clothing as lead waste and wet and fold to contain dust and then place in waste bags.

.3 Immediately before their removal from Lead Work Area and disposal, clean exterior of each filled waste bag or drum using damp cloths or HEPA vacuum. If using bags, place in second clean waste bag.

.4 Seal and remove waste from site. Dispose in accordance with requirements of Provincial and Federal authority having jurisdiction. Ensure that dump operator is fully aware of nature of material to be dumped and that guidelines and regulations for lead waste disposal are followed.

.5 Perform final thorough clean-up of Lead Work Areas and adjacent areas affected by Work using HEPA vacuum.

3.5 SITE VISITS

.1 The following site visits will be completed by the Owner or Owner's Representative over the duration of the work. The Contractor is to provide minimum 24 hours notice to the Owner or Owner's Representative to arrange for the site visits. Lead Abatement Work shall not proceed until each site visit is completed and approval to proceed is obtained from the Owner or Owner's Representative.

.1 Initial site visit: following completion of preparation of work area but prior to the commencement of lead-containing material removal.

.2 Final site visit: following completion of all removal work and cleaning and sealing of all surfaces within the enclosure, but prior to removing hoarding.

.2 If results of the visual assessment suggest that lead-containing materials remain in the work area, re-clean in accordance with section 3.4 and any additional direction provided by the Owner or Owner's Representative. Re-cleaning shall be at no additional cost to the Client.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Comply with requirements of this Section when performing the following Work:

.1 Removing or disturbance of lead-containing materials using power tools without an effective dust collection system equipped with a HEPA filter.

.2 Abrasive blasting of lead coatings or materials.

1.2 EXISTING CONDITIONS

.1 Information pertaining to lead-containing materials (LCM) to be handled, removed, or otherwise disturbed and disposed of has been provided. Information is for general purposes only and is not necessarily representative of all LCM covered within the scope of this project. Contractors are to satisfy themselves as to the exact quantity and location of LCM for disturbance or removal as part of the current project prior to bid close.

.2 The following materials in the subject building were identified as lead-containing:

.1 Light brown paint on plaster;

.2 Cream paint on plaster;

.3 Light grey paint on concrete;

.4 Turquoise paint on plaster;

.5 Yellow paint on plaster;

.6 Grey/ black paint on plaster; and

.7 Cream paint on exterior wood.

.3 Lead-containing paints on plaster described above have been sampled and submitted for toxicity characteristic leaching procedure (TCLP) analysis. Lead-containing paints on plaster have been found to meet the criteria under Ontario Regulation 347, General - Waste Management (O. Reg. 347) to be disposed of as a non-hazardous waste. It is reasonable to treat lead-painted plaster and concrete waste resulting from the demolition activities as non-hazardous waste.

.4 Lead-containing paint on exterior wood described above has been sampled and submitted for TCLP analysis. Lead-containing paint on exterior wood has been found to exceed the criteria under Ontario Regulation 347, General - Waste Management (O. Reg. 347) and it should be disposed of as hazardous waste. Lead-painted wood waste resulting from the demolition activities is considered hazardous waste.

1.3 SECTION INCLUDES

.1 Requirements and procedures for major removal or disturbance of lead-containing materials.

1.4 REFERENCES

.1 Department of Justice Canada (Jus)

.1 Canadian Environmental Protection Act, 1999 (CEPA)

.2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Safety Data Sheets (SDS)

.3 Transport Canada (TC)

.1 Transportation of Dangerous Goods Act, 1992 (TDGA)

.2 Transportation of Dangerous Goods Regulations (SOR/2012-245)

.4 Underwriters' Laboratories of Canada (ULC)

.5 Ontario Ministry of Labour, Immigrations, Training and Skills Development (MLITSD)

.1 Occupational Health and Safety Act, 1990 (OHSA)

.2 Guideline – Lead on Construction Projects

.6 Ontario Ministry of Environment Conservation and Parks (MECP)

.1 Environmental Protection Act, 1990 (EPA)

.2 Regulation 347, General - Waste Management (Reg. 347)

1.5 DEFINITIONS

.1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any dimension at 99.97% efficiency.

.2 Lead Work Area: area where work takes place which will, or may disturb lead-containing paint.

.3 Authorized Visitors: Architect, Engineer, Consultant or designated representatives, and representatives of regulatory agencies.

.4 Occupied Area: any area of building or work site that is outside the Lead Work Area.

.5 Polyethylene: polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide protection and isolation.

.6 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have appropriate capacity for scope of work.

.7 DOP Test: testing method used to determine integrity of Negative Pressure unit using dioctyl phthalate (DOP) HEPA-filter leak test.

.8 Negative pressure: system that extracts air directly from work area, filters such extracted air through High Efficiency Particulate Air filtering system, and discharges this air directly outside work area to exterior of building.

.1 System to maintain minimum pressure differential of 0.02 inches of water relative to adjacent areas outside of work areas, be equipped with alarm to warn of system breakdown, and be equipped with instrument to continuously monitor and automatically record pressure differences.

.9 Airlock: system for permitting ingress or egress without permitting air movement between contaminated area and uncontaminated area, typically consisting of two curtained doorways at least 2 m apart.

.10 Curtained doorway: arrangement of closures to allow ingress and egress from one room to another while permitting minimal air movement between rooms, typically constructed as follows:

.1 Place two overlapping sheets of polyethylene over existing or temporarily framed doorway, secure each along top of doorway, secure vertical edge of one sheet along one vertical side of doorway, and secure vertical edge of other sheet along opposite vertical side of doorway.

.2 Reinforce free edges of polyethylene with duct tape and weight bottom edge to ensure proper closing.

.3 Overlap each polyethylene sheet at openings not less than 1.5 m on each side.

1.6 SUBMITTALS

.1 Submit to Owner necessary permits for transportation and disposal of lead-containing waste and proof that lead-containing waste has been received and properly disposed including, but not limited to, MECP certificates of Approval for carrier and receiver and waste manifests.

.2 Submit proof satisfactory to Owner that employees have had instruction on hazards of lead exposure, respirator use, dress, entry and exit from Lead Work Area, and aspects of work procedures and protective measures.

.3 Submit Workplace Safety and Insurance Board status and transcription of insurance.

.4 Submit documentation including test results, fire and flammability data, and Safety Data Sheets (SDS) for chemicals or materials.

.5 Written work procedure for disturbance of lead-containing materials.

1.7 QUALITY ASSURANCE

.1 Regulatory Requirements: comply with Federal, Provincial and local requirements pertaining to lead, provided that in case of conflict among these requirements or with

these specifications more stringent requirement applies. Comply with regulations in effect at the time work is performed.

.2 Health and Safety:

.1 Safety Requirements: worker and visitor protection.

.1 Protective equipment and clothing are worn by workers and visitors while in the Lead Work Area:

.1 Lead removal using power tools (not equipped with HEPA filter): Full facepiece supplied-air respirator operated in demand mode.

.2 Lead removal using abrasive blasting: Type CE abrasive-blast supplied air respirator operated in a positive pressure mode with a tight-fitting half-mask facepiece.

.3 Disposable-type protective clothing that does not readily retain or permit penetration of lead dust, consisting of full-body covering including head covering with snug-fitting cuffs at wrists, ankles, and neck.

.2 Requirements for workers:

.1 Remove street clothes in clean change room and put on respirator with new filters or reusable filters, clan coveralls and head covers before entering Equipment and Access Rooms or Work Area. Store street clothes, uncontaminated footwear, towels and similar uncontaminated articles in clean change room.

.2 Remove gross contamination from clothing before leaving work area. Place contaminated work suits in receptacles for disposal with other lead contaminated materials. Leave reusable items except respirator in Equipment and Access Room. When not in use in work area, store work footwear in Equipment and Access Room. Upon completion of lead abatement, dispose of footwear as contaminated waste or clean thoroughly inside and out using soap and water before removing from work area or from Equipment and Access Room.

.3 Enter unloading room from outside dressed in clean coveralls to remove waste containers and equipment from Holding Room of Container and Equipment Decontamination Enclosure system. Workers not to use this system as means to leave or enter Work Area.

.3 Eating, drinking, chewing, and smoking are not permitted in Lead Work Area.

.4 Before leaving Lead Work Area, dispose of protective clothing as contaminated waste as specified.

.5 Ensure workers wash hands and face when leaving Lead Work Area. Facilities for washing shall be located in proximity to each work area and in a location that does not interfere with building day to day operations.

.6 Ensure that no person required to enter a Lead Work Area has facial hair that affects seal between respirator and face.

.2 Visitor Protection:

.1 Provide protective clothing and approved respirators to Authorized Visitors to work areas.

.2 Instruct Authorized Visitors in the use of protective clothing, respirators and procedures.

.3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Lead Work Area.

1.8 WASTE MANAGEMENT AND DISPOSAL

.1 Notify intended waste disposal facility of lead in waste materials.

.1 Provide copies of laboratory test results, if requested.

.2 Complete and submit Contaminants Release Form and any other required paperwork to facilitate disposal.

.2 Dispose of building materials containing lead and identified as non-leachate toxic (Please refer to Section 3.3 below) as solid non-hazardous waste.

.3 Dispose of building materials containing lead and identified as leachate toxic (Please refer to Section 3.3 below) as hazardous waste. Leachate toxic waste must be transported by a properly licensed carrier to a licensed disposal facility as per the requirements of O. Reg. 347. NOTE: Identified leachate toxic materials (i.e., exterior cream painted wood) must be removed from the building using appropriate methods prior to any demolition activities.

.4 Where possible, separate lead painted metals from regular waste stream for recycling.

.5 Dispose of lead materials in accordance with federal, provincial and municipal requirements.

1.9 SCHEDULING

.1 Contractor is responsible for scheduling of lead abatement work in order to achieve the desired renovation schedule.

.2 Co-ordinate with Owner or Owner’s Representatives and other contractors when scheduling work.

1.10 OWNER'S INSTRUCTIONS

.1 Before beginning Work, provide Owner satisfactory proof that every worker has had instruction and training in hazards of lead exposure, in personal hygiene and work practices, in the use, cleaning, and disposal of respirators and protective clothing.

.2 Instruction and training related to respirators includes, at minimum:

.1 Fitting of equipment.

.2 Inspection and maintenance of equipment.

.3 Disinfecting of equipment.

.4 Limitations of equipment.

.3 Instruction and training must be provided by competent, qualified person.

Part 2 Products

2.1 MATERIALS

.1 Drop and Enclosure Sheets.

.1 Polyethylene: 0.15 mm thick.

.2 FR polyethylene: 0.15 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.

.2 Waste Containers: contain waste in two separate containers.

.1 Inner container: 0.15 mm thick sealable polyethylene bag.

.2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.

.3 Labelling requirements: affix preprinted cautionary lead warning, in both official languages, that is visible when ready for removal to disposal of recycling site.

Part 3 Execution

3.1 SUPERVISION

.1 Minimum of one Supervisor for every ten workers is required.

.2 Approved Supervisor must remain within Lead Work Area during disturbance, removal, or other handling of lead containing materials.

3.2 PREPARATION AND PROCEDURES

.1 Work Area:

.1 Before beginning Work, at each access to Lead Work Area, install warning signs with the following information:

.1 There is a lead dust, fume or mist hazard.

.2 Access to the work area is restricted to authorized persons.

.3 Respirators must be worn in the Work Area.

.2 Shut off and isolate HVAC system to prevent dust dispersal into other building areas.

.3 Before beginning Work pre-clean and remove visible dust from fixed casework and equipment surfaces in work area where dust is likely to be disturbed during course of work.

.1 Use HEPA vacuum, or damp cloths where damp cleaning does not create hazard and is otherwise appropriate.

.2 Do not use compressed air to clean up or remove dust from any surface.

.4 Cover fixed casework and equipment with polyethylene sheeting sealed with tape.

.5 Seal off openings into the building with polyethylene sheeting sealed with tape.

.6 Build airlocks at entrances and exits from work areas to ensure work areas are always closed off by one curtained doorway when workers enter or exit.

.7 Maintain emergency and fire exits from work area, or establish alternative exits satisfactory to Authority having jurisdiction.

.2 Worker Decontamination Enclosure System:

.1 Worker Decontamination Enclosure System includes Equipment and Access Room and Clean Room, as follows:

.1 Equipment and Access Room: construct between exit and work areas, with two curtained doorways, one to the rest of the suite, and one to work area. Install waste receptor and storage facilities for workers' shoes and protective clothing to be re-worn in work areas. Build large enough to accommodate specified facilities, equipment needed, and at least one worker allowing sufficient space to change comfortably.

.2 Clean Room: construct with curtained doorway to outside of enclosures. Provide lockers or hangers and hooks for workers' street clothes and personal belongings. Provide storage for clean protective clothing and respiratory equipment. Install mirror to permit workers to fit respiratory equipment properly.

.2 Construction of Decontamination Enclosures:

.1 Construct framing for enclosures or use existing rooms. Line enclosure with polyethylene and seal with tape, apply two layers of FR polyethylene on floor.

.2 Construct curtain doorways between enclosures so when people move through or waste containers and equipment are moved through doorway, one of two closures comprising doorway always remains closed.

.3 Shower room in decontamination facility to be provided with the following:

.1 Hot and cold water or water of constant temperature not less than 40 degrees Celsius or more than 50 degrees Celsius.

.2 Individual controls inside to regulate water flow and temperature.

.3 Filtration unit for shower drain (to prevent the release of contaminated water).

.4 Prior to each shift in which a decontamination facility is being used, a competent person should inspect the facility to ensure that there are no defects that would allow lead-containing dust to escape. Defects should

be repaired before the facility is used. The decontamination facility should be maintained in a clean and sanitary condition.

.3 Separation of Work Areas from Occupied Areas

.1 Barriers between Work Area and occupied area to be constructed as follows:

.1 Build suitable floor to ceiling lumber or metal stud framing, cover with polyethylene sheeting sealed with tape, and apply 9 mm minimum thick plywood. Seal joints between plywood sheets and between plywood and adjacent materials with surface film forming type sealer, to create airtight barrier.

.2 Cover plywood barrier with polyethylene sealed with tape, as specified for work areas.

.4 Maintenance of Enclosures:

.1 Maintain enclosures in tidy condition.

.2 Ensure that barriers and polyethylene linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.

.3 Visually inspect enclosures at beginning of each working period.

.4 Use smoke methods to test effectiveness of barriers when directed by Owner or Owner's Representative.

.3 Complete disturbance or removal or lead-containing materials as required.

.4 Prevent spread of dust from Lead Work Area using measures appropriate to work to be done.

.5 Work is subject to visual assessment as well as lead spot check sampling on surfaces. Contamination of surrounding areas indicated by visual assessment or spot check surface samples will require complete enclosure and clean-up of affected areas at no additional cost to the Owner.

3.3 WASTE CHARACTERIZATION

.1 Painted lead-containing plaster materials were identified as non-leachate toxic. NOTE: It is considered reasonable to treat lead-painted concrete the same as lead-painted plaster.

.2 Painted lead-containing wood was identified as leachate toxic.

.3 TCLP results are provided under separate cover.

3.4 CLEAN-UP

.1 Arrange for transportation and disposal of all removed lead-containing materials (Please refer to Section 1.8 above).

.2 Clean-up:

.1 Frequently during Work and immediately after completion of work, clean up lead containing dust and waste using HEPA vacuum.

.2 Place lead containing dust and waste in sealed dust-tight waste bags or drums. Treat drop sheets and disposable protective clothing as lead waste and wet and fold to contain dust and then place in waste bags.

.3 Immediately before their removal from Lead Work Area and disposal, clean exterior of each filled waste bag or drum using damp cloths or HEPA vacuum. If using bags, place in second clean waste bag.

.4 Seal and remove waste from site. Dispose in accordance with requirements of Provincial and Federal authority having jurisdiction. Ensure that dump operator is fully aware of nature of material to be dumped and that guidelines and regulations for lead waste disposal are followed.

.5 Perform final thorough clean-up of Lead Work Areas and adjacent areas affected by Work using HEPA vacuum.

3.5 SITE VISITS

.1 The following site visits will be completed by the Owner or Owner's Representative over the duration of the work. The Contractor is to provide minimum 24 hours notice to the Owner or Owner's Representative to arrange for the site visits. Lead Abatement Work shall not proceed until each site visit is completed and approval to proceed is obtained from the Owner or Owner's Representative.

.1 Initial site visit: following completion of preparation of work area but prior to the commencement of lead-containing material removal.

.2 Final site visit: following completion of all removal work and cleaning and sealing of all surfaces within the enclosure, but prior to removing hoarding.

.2 If results of the visual assessment suggest that lead-containing materials remain in the work area, re-clean in accordance with section 3.4 and any additional direction provided by the Owner or Owner's Representative. Re-cleaning shall be at no additional cost to the Client.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

.1 Procedures and materials required for the removal, safe handling, management and storage of polychlorinated biphenyl (PCB) material.

1.2 REFERENCES

.1 American Board of Industrial Hygiene (ABIH).

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

.1 PN1206-1995, PCB Transformer Decontamination: Standards and Protocols.

.3 Department of Justice Canada (Jus)/CEPA SOR/92-507-SOR/2000-102, Storage of PCB Material Regulations.

.1 Canadian Environmental Protection Act, 1999 (CEPA).

.4 Environment Canada (EC).

.1 Manual for Spills of Hazardous Materials-1985.

.2 Identification of Fluorescent Lamp Ballasts Containing PCBs, EPS 2/CC/2; April 1986.

.5 Ontario Ministry of the Environment, Conservation and Parks (MECP).

.1 Environmental Protection Act, R.S.O. 1990.

.1 Revised Regulations of Ontario (R.R.O.), 1990, Regulation 347 (Reg. 347) – General – Waste Management.

.2 R.R.O., 1990, Reg. 362 – Waste Management – PCBs.

.6 Transport Canada (TC).

.1 Transportation of Dangerous Goods Act, 1992 (TDGA).

1.3 SUBMITTALS

.1 Submit to Owner or Owner's Representative waste location and description including:

.1 Building in which PCB waste is stored.

.2 Size of property used for storage site.

.3 Precise location of PCB waste at storage site.

.4 Container storage method used.

.5 Spill containment features in place at storage site.

.6 Security measures in place at storage site.

.7 Fire detection systems in place at storage site.

.2 Submit to Owner or Owner's Representative a list of ballasts examined along with identification numbers for each ballast and results of comparison with Environment Canada PCB guide (i.e., confirmation of ballast examination and results of examination).

1.4 EXISTING CONDITIONS

.1 Reports and information pertaining to PCBs to be handled, removed, or otherwise disturbed and disposed of during this project are provided under separate cover. Information is for general

information only and is not necessarily representative of all PCB-containing materials covered within the scope of this project.

.2 Contractors are to satisfy themselves as to the exact quantity and location of PCB-containing materials for disturbance or removal as part of the current project PRIOR TO BID CLOSE.

.3 Fluorescent lamp ballasts are located throughout the subject building. Some of the ballasts may be PCB-containing.

.4 Notify Owner or Owner's Representative of potential PCB-containing equipment and materials discovered during work and not apparent from drawings, specifications, or report pertaining to work. Do not disturb such materials until approval is received from Owner or Owner's Representative.

1.5 CONTROL SUBMITTALS

.1 Record keeping: maintain and make available for review by Owner or Owner's Representative.

- .1 Receipt of waste showing:
  - .1 Date of receipt of waste.
  - .2 Description of PCB waste including nameplate description, serial number, PCB registration number and quantity.
  - .3 Condition of PCB waste.
  - .4 Source of PCB waste.
  - .5 Name of carrier of PCB waste.
  - .6 Name of individual who accepted receipt of PCB waste.
- .2 Removal of waste showing:
  - .1 Date of removal of PCB waste.
  - .2 Description of PCB waste including nameplate description, serial number, PCB registration number and quantity.
  - .3 Condition of PCB waste.
  - .4 Name of carrier of PCB waste.
  - .5 Destination of PCB waste.
  - .6 Name of individual authorizing transport of PCB waste.
- .3 Monthly inspection, repair and replacement reports.
- .4 Submit records to Owner or Owner's Representative as requested.

1.6 QUALITY ASSURANCE

.1 Instruct personnel on dangers of PCB exposure, on respirator use, decontamination and applicable Federal, Provincial and Municipal Regulations.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.2 Place materials defined as hazardous or toxic in designated containers.

.3 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Provincial and Municipal regulations.

.4 Fold up metal banding, flatten and place in designated area for recycling.

.5 Owners or operators of storage sites.

.1 Provide method for determining concentration of PCBs in particular waste at request of Owner or Owner's Representative.

.2 Ensure personnel are familiar with and understand current PCB waste management procedures and use of personnel protection equipment and clean-up techniques.

.6 Disposal of PCB waste generated by removal activities must comply with Federal, Provincial and Municipal regulations.

.1 Dispose of PCB waste in leak proof drums.

.2 Containers must be labelled with appropriate warning labels.

.7 Create manifests describing and listing waste created and transport containers by approved means to licensed facility for storage.

.1 For each bulk load of PCBs: identity PCB waste, earliest date of removal from service for disposal, and weight in kilograms of the PCB waste.

.2 For each PCB Article Container or PCB Container: unique identifying number, type of PCB waste (e.g., soil, debris, small capacitors), earliest date of removal from service for disposal, and weight in kilograms of PCB waste contained.

.3 For each PCB Article not in PCB Container or PCB Article Container: serial number if available, or other identification if there is no serial number, date of removal from service for disposal, and weight in kilograms of PCB waste in each PCB Article.

PART 2 PRODUCTS

2.1 STORAGE GENERAL

.1 Storage of PCB materials in accordance with Authority having jurisdiction.

.2 Materials may be stored on site no longer than 30 days prior to disposal, unless otherwise agreed to in writing by Owner or Owner's Representative.

.3 PCB material may be stored in a secure area inside the building pending removal and disposal.

2.2 STORAGE CONTAINERS

.1 PCB solid storage.

.1 Drums and containers.

.1 Designed with sufficient durability and strength to prevent PCB solids from being released into environment, affected by weather, or contaminated by external sources.

.2 Steel or other material approved by Owner or Owner's Representative.

.2 Drums.

.1 Capacity no greater than 205 litres.

.2 Steel of minimum 1.2 mm for solids.

.3 Ensure removable steel lid securely attached and complete with PCB-resistant gasket for solids.

.4 Paint or treat to prevent rusting.

2.3 EMERGENCY RESPONSE EQUIPMENT AND SYSTEMS

.1 Safety requirements in storage area.

.1 Heat and smoke sensory controls.

.1 Stops ventilation fan and closes intake and exhaust dampers of fan in event of fire inside building.

.2 Indoor fire alarm system.

.1 Fully operative and maintained, inspected and tested to National Fire Code of Canada.

.2 Portable fire extinguishers to be selected, installed, maintained, inspected and tested to National Fire Code of Canada.

.3 Automatic fire suppression system, as and when required to National Fire Code of Canada.

.2 Storage site clean-up materials.

.1 Ensure availability at all time of sorbent or solvents, for clean-up of liquid or solids.

.2 Ensure availability at all times of inert absorbent in sufficient quantity to contain minor leakage.

.1 Place in bottom of each container holding PCB equipment or fluorescent lighting ballasts.

.3 Respirators.

.1 Use approved full-face organic vapour cartridge respirator for exposure to hot PCB.

.2 Vapour concentration less than or equal to 5 mg/m3.

.1 Supplied-air respirator with full face piece, helmet or hood.

.2 Self-contained breathing apparatus with full face piece.

.3 Vapour concentration greater than 5 mg/m3 or unknown concentrations.

.1 Self-contained breathing apparatus with full face piece operated in positive pressure mode.

.2 Type C supplied-air respirator with full face piece operated in positive pressure of continuous flow mode and auxiliary self-contained breathing apparatus operated in positive pressure mode.

2.4 WARNING SIGNS AND LABELS

.1 Label capacitors containing 0.5 kilogram or more of chlorobiphenyls with black and white serialized label, measuring 76 x 76 mm or as otherwise required by Law.

.2 Label container with a capacitor containing 0.5 kg or more of chlorobiphenyls with black and white serialized, "ATTENTION PCB" label, measuring 150 x 150 mm or as otherwise required by Law.

.3 Maintain signs and labels in clear and legible condition.

PART 3 EXECUTION

3.1 GENERAL

.1 Store PCB waste materials according to requirements of CEPA SOR/92-507.

.2 Select PCB removal procedure to minimize contamination of work areas with PCB or other PCB-contaminated debris/waste. Handle PCBs such that no skin contact occurs.

.3 As feasible, do not carry out PCB handling operations in confined spaces. Confined space means space having limited means of egress and inadequate cross ventilation.

.4 Ensure that work operations or processes involving PCB or PCB-contaminated materials are conducted in accordance with Federal, Provincial and Municipal Regulations and applicable requirements of this Section, including but not limited to:

.1 Obtaining advance approval of PCB storage sites.

.2 Notify Owner or Owner's Representative prior to beginning operations.

.3 Report leaks and spills to Owner or Owner's Representative.

.4 Inspect PCB and PCB-contaminated items and waste containers for leaks and forward copies of inspection reports to Owner or Owner's Representative.

.5 Maintain spill kit for emergency spills entitled "PCB Spill Kit".

.6 Maintain inspection, inventory and spill records.

3.2 BALLAST REMOVAL AND EVALUATION

.1 Fluorescent lamp ballasts are present in the subject building. Contractor responsible for determining the actual number of fluorescent lamp ballasts requiring disposal as PCB waste.

.2 For all fluorescent lamp ballasts:

.1 Remove fluorescent lamp ballasts from the buildings and compare the identification code on each ballast to the product identification information presented in the Environment Canada PCB guide.

.2 All lamp ballasts confirmed as PCB-containing through ballast date codes or markings on the ballast housing shall be deemed to be PCB-containing ballasts for disposal purposes.

.3 All lamp ballasts confirmed to be non-PCB through ballast date codes or markings on the ballast housing shall be deemed to be non-PCB-containing ballasts for disposal purposes.

.4 All lamp ballasts that cannot be confirmed as PCB or non-PCB containing shall be deemed to be PCB-containing ballasts for disposal purposes.

.3 Dispose of all PCB-containing ballasts as PCB waste. Place ballasts in drums and label drums as described in Section 1.7. Transport and dispose as described in Section 3.8.

.4 Dispose of all non-PCB-containing ballasts as solid non-hazardous waste.

3.3 ACCESS TO STORAGE SITE

.1 Keep entrance to site locked or guarded.

.2 Maintain register at site containing name, address, telephone number and place of business of each person who enters, or is authorized to enter site.

.3 Permit only authorized personnel to enter site.

3.4 ACCESS TO STORED MATERIAL

.1 Store materials and equipment to permit easy access for inspection.

3.5 STORAGE PRACTICES

.1 Stack containers only if designed for stacking.

.2 Stack liquid containers or drums no higher than 2 containers.

.3 Separate stacked drums from each other with pallets.

.4 Store material to prevent it catching fire.

.5 Store material to prevent it being released.

.6 Store PCB material together, and away from other stored materials.

.7 Exterior.

.1 Cover PCB liquid containers with waterproof roof or cover extending beyond curbing or sides of container.

.2 Elevate PCB waste containers and PCB equipment on pallets or other suitable devices to reduce corrosion.

.3 Store transformers on skids.

.8 Interior.

.1 Place on skids or pallets PCB equipment and containers of PCB material not permanently secured to floor or surface.

3.6 EMERGENCY RESPONSES

.1 General.

.1 Immediately report to Owner or Owner's Representative PCB spills on ground or in water, PCB spills in drip pans, or PCB leaks.

.2 Rope off area around edges of PCB leak or spill and post "PCB Spill Authorized Personnel Only" caution sign. Immediately transfer leaking items to drip pan or other container.

.3 Initiate cleanup of spills as soon as possible, but no later than 48 hours of its discovery. If misting, elevated temperatures or open flames are present, or if spill is situated in confined space, notify Owner or Owner's Representative. Mop up liquid with rags or other conventional absorbent. Properly contained and dispose of spent absorbent as solid PCB waste.

.2 Spill, leak, and disposal procedures.

.1 Permit access to only those wearing protective equipment and clothing.

.2 Issue poison warnings.

.3 Call local fire department or PCB Emergency Response Team.

.4 Avoid contact and inhalation.

.5 Remove ignition sources.

.6 Ventilate areas of spill or leak.

.7 Stop or reduce discharge if possible without risk.

.8 Collect spilled material for reclamation.

.9 Do not flush to sewer.

.10 Use only inert sawdust, dry sand or earth absorbents as approved by Owner or Owner's Representative.

.11 Wipe contaminated area with rags and kerosene. Do not use acetone or toluene.

.12 Notify environmental authorities to determine disposal and clean-up procedures.

.3 Fire protection and emergency procedures plan for storage sites.

.1 Ensure most recent revision of plan is in effect.

.2 Develop plan in consultation with local fire department.

.3 Ensure employees authorized to enter PCB storage site are familiar with contents of fire protection and emergency procedures plan.

.4 Send one copy to local fire department.

.5 Display one copy at storage site in area accessible in fire or spill situation.

.6 Display one copy at storage site owner's place of business.

.4 Respirators.

.1 Use when chlorobiphenyl concentrations are above permissible exposure levels.

.2 Use when entering tanks or closed vessels.

.3 Use in emergency situations.

.5 Permissible exposure limit.

.1 0.5 milligram of chlorobiphenyl (54% chlorine) per cubic metre of air, averaged over 8 hours.

.6 Fire protection.

.1 Wear totally encapsulated suit and self-contained breathing apparatus with full facepiece operated in positive pressure mode

3.7 SANITATION

.1 Promptly wash liquid-contaminated skin with soap or mild detergent and water.

.2 Prohibit eating and smoking in areas where liquid chlorobiphenyl (54% chlorine) is handled, processed or stored.

.3 Wash hands thoroughly with soap or mild detergent and water after handling liquid chlorobiphenyl (54% chlorine).

3.8 TRANSPORTATION & DISPOSAL

.1 Furnish labour, materials, and equipment necessary to store, transport, and dispose of PCB contaminated material in accordance with Federal, Provincial/Territorial and Municipal requirements and guidelines.

.2 Prepare and maintain waste shipment records and manifests as required.

.3 Transport PCB contaminated solid materials, articles or equipment in approved containers with removable heads in accordance with TDGA.

.1 Inspect and document vehicles and containers for proper operation and covering. Repair or replace damaged containers.

.2 Inspect vehicles and containers for proper markings, manifest documents and other requirements for waste shipment.

.3 Perform and document decontamination procedures prior to leaving the site and again before leaving the disposal site.

.4 Shipping Documentation:

.1 Before transporting PCB materials, a TDG trained representative will sign and date the manifests.

.2 Provide copies of the manifests to the Owner or Owner's Representative.

.3 Ensure that manifest accompanies PCB waste at all times.

.4 Ensure transporter provides copy of manifest signed and dated by disposal facility.

3.9 FIELD QUALITY CONTROL

.1 Owners or Operators of Storage Sites.

.1 At request of inspector, measure concentration of PCBs in accordance with CEPA SOR/92-507 - Storage of PCB Material Regulations.

.2 Inspect storage site daily. Make repairs as necessary.

.3 Immediately repair or replace drum, container or equipment found to be leaking PCBs.

.4 Immediately clean up contaminated area.

.5 Ensure controlled access to storage site to prevent entry by unauthorized persons.

END OF SECTION

PART 1 General

1.1 REFERENCES

.1 Ontario Ministry of Labour, Immigration, Training and Skills Development (MLITSD).

.1 Occupational Health and Safety Act (1990)

.1 Ontario Regulation 490/09, Designated Substance - Mercury.

.2 Ontario Ministry of Environment, Conservation and Parks (MECP)

.1 Environmental Protection Act, 1990 (EPA)

.1 Reg. 347, General Waste Management

1.2 SUMMARY

.1 Comply with the requirements of this Section when performing the following work:

.1 Removal and recycling of fluorescent light tubes.

.2 Removal and recycling of mercury-containing thermostats.

1.3 REGULATORY REQUIREMENTS

.1 Comply with Federal, Provincial, and local requirements pertaining to mercury, provided that in case of conflict among these requirements or with these specifications the more stringent requirement applies. Comply with regulations in effect at time work is performed.

.2 Fluorescent light tubes and mercury-containing thermostats are classified as "common mercury waste" under Reg. 347.

.3 Common mercury waste can be transported to a common mercury waste recovery facility without being registered or manifested.

1.4 SUBMITTALS

.1 Submit proof satisfactory to Owner or Owner’s representative that suitable arrangements have been made to recycle common mercury waste in accordance with requirements of authority having jurisdiction.

1.5 EXISTING CONDITIONS

.1 Reports and information pertaining to mercury to be handled, removed or otherwise disturbed in the renovation areas in the subject building have been provided. Information is for general purposes only and is not necessarily representative of all mercury-containing material covered within the scope of this project.

.2 Contractors are to satisfy themselves as to the exact quantity and location of mercury containing materials for disturbance or removal as part of the current project PRIOR TO BID CLOSE.

.3 Fluorescent light tubes are located throughout the subject building and contain mercury vapour.

.4 Mercury-containing thermostats are present in the subject building.

.5 Notify Owner or Owner's representative of mercury containing materials discovered during work and not apparent from drawings, specifications, or report pertaining to work. Do not disturb such material pending instructions from Owner or Owner's representative.

1.6 INSTRUCTION AND TRAINING

.1 Before commencing work, provide to Owner or Owner's representative satisfactory proof that every worker has had instruction and training in hazards of mercury exposure, in personal hygiene and work practices, and in use, cleaning, and disposal of respirators and protective clothing.

.2 Instruction and training related to respirators includes, at a minimum:

.1 Fitting of equipment.

.2 Inspection and maintenance of equipment.

.3 Disinfecting of equipment.

.4 Limitations of equipment.

.3 Instruction and training must be provided by a competent, qualified person.

1.7 WORKER PROTECTION

.1 Protective equipment and clothing may be worn by workers handling mercury containing materials. Recommended PPE includes:

.1 Non-powered, reusable or replaceable air-purifying half-mask respirator equipped with chemical cartridges, personally issued to the worker and marked as to efficiency and purpose, suitable for protection against mercury and acceptable to the Provincial Authority having jurisdiction.

.2 Disposable-type protective clothing consisting of full-body covering including head covering with snug-fitting cuffs at wrists, ankles, and neck.

.3 Chemical-resistant protective gloves.

1.8 GENERAL

Not used.

PART 2 Products

2.1 NOT USED.

PART 3 Execution

3.1 PROCEDURES

.1 Fluorescent light tubes:

.1 Collect and separate fluorescent light tubes and keep separate from other waste.

.2 Gather and store tubes in a manner to avoid breakage.

.2 Mercury-containing thermostats:

.1 Gather and store mercury-containing thermostats in a manner to avoid breakage (e.g. pack in an oversized container with an adsorbent packing material such as vermiculite).

.3 Maintain a mercury spill cleanup kit on site in case of accidental breakage of mercury-containing fluorescent bulbs or in case of accidental discovery/breakage of mercury-containing thermostats or gauges.

.4 Make arrangements for removal and transport of common mercury waste to a common mercury waste recovery facility as per Section 1.3 above.

END OF SECTION

PART 1 GENERAL

1.1 REFERENCES

.1 Environmental Code of Practice for the Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems, April 2015.

.2 Ontario Environmental Protection Act, 1990.

.1 Ontario Regulation 463/10 (O. Reg. 463/10) – Ozone Depleting Substances and Other Halocarbons.

1.2 SUMMARY

.1 Comply with the requirements of this Section when performing the following work:

.1 Removing refrigeration or air-conditioning equipment that may contain CFCs.

1.3 REGULATORY REGUIREMENTS

.1 Comply with Federal, Provincial, and local requirements pertaining to refrigerants, provided that in case of conflict among these requirements or with these specifications the more stringent requirement applies. Comply with regulations in effect at time work is performed.

1.4 SUBMITTALS

.1 Submit proof to Owner or Owner's Representative that all refrigeration equipment to be removed from the building has been tested and determined to no longer contain any refrigerant as required under O. Reg. 189.

.2 Submit proof satisfactory to Owner or Owner's Representative that suitable arrangements have been made to dispose or recycle refrigerants in accordance with requirements of authority having jurisdiction.

.3 Submit to Owner or Owner's Representative all necessary permits for transportation and disposal of refrigerants and proof that refrigerant waste has been received and properly disposed of or recycled.

1.5 EXISTING CONDITIONS

.1 Reports and information pertaining to hazardous materials in the building have been provided under separate cover. Information is for general information only and is not necessarily representative of all refrigeration units covered within the scope of this project.

.2 A freezer in room 8 and a refrigerator in room 16 that may contain refrigerants were observed in the subject building, as described in the report entitled, *Designated Substance Survey, McTavish Recreation Centre, Pearl, Ontario,* dated December 22, 2009.

.3 Notify Owner or Owner's Representative of refrigerants discovered during work and not apparent from drawings, specifications, or report pertaining to work. Do not disturb such material pending instructions from Owner or Owner's Representative.

1.6 INSTRUCTIONS AND TRAINING

.1 Refrigeration units not identified for salvage must be removed and disposed of by a refrigeration specialist as defined by O. Reg. 463/10.

PART 2 EXECUTION

2.1 PROCEDURES

.1 Co-ordinate with demolition contractor for disposal of refrigeration equipment.

.2 Refrigerants shall not be discharged into the building or into the atmosphere.

.1 The Contractor shall forthwith notify the Owner or Owner's Representative of any discharges of refrigerants into the atmosphere or into the air within the building.

.3 The Contractor shall retain the services of an individual licensed in the Province of Ontario to work on equipment containing refrigerants.

.4 The trained individual shall purge all refrigerant from all refrigeration and/or air-conditioning equipment in the building.

.5 The trained individual shall place a notice on each piece of equipment that is purged setting out,

.1 the date of the determination;

.2 the person's name;

.3 the certificate number and expiry date appearing on the person's certificate;

.4 the name of the person's employer, if the determination is made in the course of the person's employment; and

.5 a statement that the equipment no longer contains any refrigerant.

.6 A copy of each notice issued under subsection (1) shall be kept for a period of two years from the date of its issue by,

.1 the employer of the person who placed the notice on the equipment if done as part of the person's employment; or

.2 for sole proprietors, the person who placed the notice on the equipment.

.7 Refrigeration equipment shall not be disposed until the notice discussed above has been issued and posted on the equipment.

8. Contractor shall furnish all required labour, materials and equipment necessary to store, transport, and dispose of refrigeration units in accordance with Federal, Provincial and Municipal requirements.

.8 Prepare and maintain waste shipment record and manifests as required.

.9 Arrange for transport of refrigerant and refrigeration units in accordance with Federal, Provincial and Municipal requirements.

END OF SECTION

McTavish Recreation Centre - Hazardous Material Removal & Disposal