Part 1 General

1.1 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 – Submittal Procedures and Section 01 74 19 – Waste Management Disposal.

1.2 SITE CONDITIONS

.1 Review "Designated Substance Report" and take precautions to protect environment.

.2 If material resembling spray or trowel-applied asbestos or other designated substance listed as hazardous be encountered, stop work, take preventative measures, and notify Departmental Representative immediately.

.1 Proceed only after receipt of written instructions have been received from Departmental Representative.

.3 Notify Departmental Representative before disrupting building access or services.

.1 Environmental protection:

.1 Conduct removal of existing refrigerant-containing mechanical equipment in accordance with Regulation SOR/2003-289, Federal Halocarbon Regulations.

.2 Ensure Work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.

.3 Fires and burning of waste or materials is not permitted on site.

.4 Do not bury rubbish waste materials.

.5 Do not dispose of waste or volatile materials including but not limited to: mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into storm or sanitary sewers.

.6 Ensure proper disposal procedures are maintained throughout project.

.2 Do not pump water containing suspended materials into storm or sanitary sewers, or onto adjacent properties.

.3 Control disposal or runoff of water containing suspended materials or other harmful substances.

.4 Protect trees, plants and foliage on site and adjacent properties where indicated.

.5 Prevent extraneous materials from contaminating air beyond application area, by providing temporary enclosures during demolition work.

.6 Cover or wet down dry materials and waste to prevent blowing dust and debris. Control dust on all temporary roads.

.7 Maintain access to existing walkways, exits, and other adjacent occupied or used facilities.

Part 2 Products

2.1 NOT USED

.1 Not used.

Part 3 Execution

3.1 EXAMINATION

.1 Inspect building with Departmental Representative and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.

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

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

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

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

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

3.2 PREPARATION

.1 Photograph equipment and record existing equipment identifiers prior to removal of equipment. Request official project Equipment Data Collection Form from the Departmental Representative. Submit completed Equipment Data Collection. All removed, modified and new equipment require the submission of a completed Equipment Data Collection Form.

.2 Temporary Erosion and Sedimentation Control:

.1 In accordance with Section 01 51 00 – Temporary Utilities.

.3 Protection of In-Place Conditions:

.1 Prevent movement, settlement, or damage to adjacent structures, utilities, and existing pipe work and equipment to remain in place. Provide bracing and shoring required.

.2 Keep noise, dust, and inconvenience to occupants to minimum.

.3 Protect building systems, services and equipment.

.4 Provide temporary dust screens, covers, railings, supports and other protection as required.

.4 Demolition/Removal:

.1 Remove items as indicated on drawings.

.2 Remove parts of existing piping systems and equipment to permit new construction.

.3 Refrigerants reclaim as per the provincial and federal regulations.

3.3 REPAIRS

.1 General: Promptly repair damage to adjacent construction caused by demolition operations.

.2 Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.

.3 Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

3.4 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 00 – Cleaning.

.1 Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 – Cleaning.

.3 Refer to demolition drawings and specifications for items to be salvaged for reuse.

.4 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 19 – Waste Management and Disposal

.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Lead abatement procedures for the removal/disturbance/repair of lead-containing surface coating materials on various building components, or materials suspected of containing lead, if required to accommodate the project scope of work.

.2 Refer to the Specification Section 01 14 25 – Designated Substances for details on lead-containing materials.

1.2 RELATED SECTIONS

.1 Section 01 14 25 – Designated Substances

.2 Section 02 89 00 – Silica Precautions

1.3 REFERENCES

.1 Department of Justice Canada.

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

.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).

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

.1 R.R.O. 1990, Reg. 347, General – Waste Management, as amended.

.5 Ontario Ministry of Labour (MoL).

.1 Occupational Health and Safety Act, R.S.O. 1990, c. O.1 (OHSA).

.1 O.Reg. 213/91, Construction Projects, as amended.

.2 R.R.O. 1990, Regulation 490/09, “Designated Substances”, as amended.

.2 Guideline: Lead on Construction Projects, September 2004, as revised.

.6 Canada Consumer Product Safety Act Surface Coating Materials Regulations SOR/2016-193, as amended.

1.4 DEFINITIONS

.1 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 unless Site Conditions dictate otherwise.

.2 Authorized Visitors: Departmental Representatives or designated representatives, and representatives of regulatory agencies.

.3 Curtained doorway: arrangement of closures to allow ingress and egress from one room to another while permitting minimal air movement between rooms, typically constructed by placing 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. Reinforce free edges of polyethylene with duct tape and weight bottom edge to ensure proper closing. Overlap each polyethylene sheet at openings not less than 1.5 m on each side unless Site Conditions dictate otherwise.

.4 Hazardous Material Workplan: A brief report identifying the location and quantities of hazardous materials and the methods that will be used to remove, store, transport and dispose of them.

.5 Lead-Containing Paint: Paint that contains lead in concentrations greater than 90 parts per million, that may result in elevated airborne lead exposure during operations that disturb the paint.

.6 Lead-containing materials: Materials that are assumed to contain varying levels of lead from their historic composition.

.7 Lead-containing equipment: Equipment suspected of containing lead through historic application or identified as lead containing through labels/tags.

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

1.5 ACTION AND INFORMATION SUBMITTALS

.1 One (1) week prior to the start of abatement work, submit proposed methodology for abatement procedures for review by Departmental Representative. The proposed methodology shall include:

.1 Products to be used complete with SDS information.

.2 List of protective equipment to be used by workers.

.3 Plan identifying area(s) of work for abatement procedures.

.4 Requirements for engineering controls, ventilation, etc.

.5 Requirements for access to and egress from the Lead Work Area.

.2 A written Health and Safety Plan specific to work of this Section. As a minimum this document must include:

.1 Classification of all lead abatement work in accordance with the criteria used in the document Guideline: Lead on Construction Projects issued by the Ontario Ministry of Labour.

.2 The identity of the “competent person” who will, on behalf of the Contractor, perform regular inspections of the lead abatement activities to prevent dangerous, unhealthy or unsafe conditions. The “competent person” must be on site at all times while lead abatement activities are in progress.

.3 A description of the equipment and materials, controls, crew size, job responsibilities, and operations and maintenance procedures for each activity involved in the work of this Section.

.4 A description of the specific control methods to be used in the lead-containing paint and surface coatings abatement processes.

.5 A strategy to ensure that personnel are not exposed to airborne lead or other contaminants in concentrations that exceed the current Time Weighted Average Exposure Value (TWAEV).

.6 A description of the medical surveillance program in place for lead abatement workers.

.7 Names of products to be used in lead abatement work.

.3 Before beginning work:

.1 Obtain from appropriate agency and submit to Departmental Representative all necessary permits for transportation and disposal of lead-containing waste. Ensure that dump operator is fully aware of hazardous nature of material being dumped, and proper methods of disposal.

.2 Submit proof satisfactory to Departmental Representative that employees have had instruction on hazards of lead exposure, respirator use, dress, use of showers, entry and exit from work areas, and aspects of work procedures and protective measures.

.3 Submit proof in the form of a certificate that supervisory personnel have attended a lead-containing paint abatement course, of not less than 1-day duration.

.4 For each load of waste that leaves the site, submit landfill weigh scale receipts, shipping documents, and lead-containing waste manifests, as applicable based upon waste characterization.

.5 Lead abatement section within Hazardous Material Work Plan.

1.6 QUALITY ASSURANCE

.1 Regulatory Requirements: comply with Federal, Provincial/Territorial and local requirements pertaining to lead, 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 Eating, drinking, chewing, and smoking are not permitted in the Lead Work Area.

.2 Washing facilities consisting of a wash basin, water, soap and towels shall be provided by the Contractor. All workers shall use these washing facilities before eating, drinking, smoking or leaving the work site. Washing facility areas are to be designated by Departmental Representative

.3 Protective equipment and clothing to be worn by workers while in the Lead Work Area includes:

.1 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 Respirator, personally issued to worker and marked as to efficiency and purpose, and acceptable to Authority having jurisdiction as suitable for level of lead exposure in the Lead 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.

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

.4 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 the Lead Work Area.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Representative sampling of lead-containing materials that is representative of the applicable waste stream (i.e. sampling to include substrate material as applicable) shall be performed by a competent person retained by the Contractor prior to disposal of lead-containing materials. Lead-containing waste streams are to be classified for disposal purposes using the Toxicity Characteristic Leachate Procedure at a certified analytical laboratory. All sampling procedures and submissions shall be approved of by the Departmental Representative.

.2 Place materials characterized as hazardous or toxic based upon leachate analysis in designated containers.

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

.4 Disposal of lead waste, including wash and rinse water, generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Label containers with appropriate warning labels.

.5 Provide manifests describing and listing waste created. Transport containers by approved means to licensed facility for disposal.

.6 Contractor is responsible to obtain all necessary permits, licenses and approvals to conduct the abatement.

1.8 EXISTING CONDITIONS

.1 Refer to the following documents for details on lead-containing materials:

.1 Specification Section 01 14 25 – Designated Substance Report

Part 2 Products

2.1 MATERIALS

.1 All materials brought to project site must be in good condition and free of lead dust. Disposable items must be of new materials only.

.2 Lead Waste Container: An impermeable container acceptable to disposal site and Ministry of Environment. Labelled as required. Comprised of one of the following:

.1 A 0.15 mm sealed polyethylene bag, inside a second 0.15 mm sealed polyethylene bag.

.2 A barrel suitable for lead wash water and/or sludge. Container must be acceptable to the waste hauler.

.3 Lead Cleaning Agent: A cleaning agent suitable for lead dust. Acceptable products:

.1 Detergents with a high phosphate content (containing at least 5% trisodium phosphate).

.2 Phosphate-free lead dissolving agent.

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

.5 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under both dry conditions and wet conditions.

2.2 EQUIPMENT

.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 Sprayer: Garden reservoir type, low velocity, capable of producing a mist or fine spray.

Part 3 Execution

3.1 PREPARATION

.1 Scaffolding

.1 Scaffolding in accordance with CAN/CSA-S269.2.

3.2 ABATEMENT WORK AREA PREPERATION

.1 Implement lead precautionary measures appropriate to the work completed in accordance with MOL Guideline: Lead on Construction Projects, as amended.

.2 Type 1 Work Areas:

.1 Install polyethylene drop sheets below lead operations which produce or may produce dust, chips, or debris containing lead.

.3 Type 2 Work Areas:

.1 Install polyethylene drop sheets below lead operations which produce or may produce dust, chips, or debris containing lead.

.2 Post signs in sufficient numbers to warn of the lead hazard. There shall be a sign, at least, at each entrance to the Lead Work Area. The signs shall display the following information in large, clearly visible letters using both official languages:

.1 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.

.4 Type 3 Work Areas:

.1 Post signs in sufficient numbers to warn of the lead hazard. There shall be a sign, at least, at each entrance to the Lead Work Area. The signs shall display the following information in large, clearly visible letters using both official languages:

.1 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 Barriers, Partial Enclosures and Full Enclosures: Barriers, partial enclosures, and full enclosures shall be constructed to separate the Lead Work Area from the rest of the project. Barriers shall only be used where full and partial enclosures are not practical, including during exterior masonry work.

.1 Barriers:

.1 Ropes or barriers do not prevent the release of contaminated dust or other contaminants into the environment. However, they can be used to restrict access of workers who are not adequately protected with proper PPE, and also prevent the entry of workers not directly involved in the operation. Ropes or barriers shall be placed at a distance far enough from the operation that allows the lead-containing dust to settle. If this is not achievable, warning signs should be posted at the distance where the lead-containing dust settles to warn that access is restricted to persons wearing PPE.

.2 Barriers for lead-containing work areas are to prevent staff who are not equipped with PPE from working within 6 metres of lead-abatement work areas.

.2 Partial Enclosures:

.1 Partial enclosures allow some emissions to the atmosphere outside of the enclosure. Partial enclosures may consist of vertical tarps and floor tarps so long as the tarps are overlapped and securely fixed together at the seams. A partial enclosure is not a suitable containment system if significant dust is being generated.

.3 Full Enclosures:

.1 Full enclosures are tight enclosures (with tarps that are generally impermeable and fully sealed joints and entryways). Full enclosures allow minimal or no fugitive emissions to reach the environment outside of the Lead Work Area. For full enclosures, the following requirements shall be met:

.1 The enclosure shall be constructed of windproof materials that are impermeable to dust.

.2 The enclosure shall be supported by a secure structure.

.3 All joints in the enclosure shall be fully sealed.

.4 Entrances to the enclosure shall be equipped with air locks.

.5 The escape of abrasive and debris from the enclosure shall be controlled, at air supply points, by the use of baffles, louvers, flap seals and filters.

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

.1 Construct Worker Decontamination Enclosure System as close to the work area as possible in area specified by Departmental Representative. Submit layout of proposed enclosures and decontamination facilities including location to Departmental Representative for review.

.2 Equipment and Access Room: build an Equipment and Access Room between Shower Room and Lead Work Area, with two curtained doorways, one to Shower Room and one to Lead Work Area. Install a waste receptor and storage facilities for workers' shoes and protective clothing to be reworn in Lead Work Area. 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.

.3 Shower Room: build a 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 or fewer workers. Provide constant supply of hot and cold, or warm (between 40°C and 50°C) potable water. Provide piping and connect to water sources and drains. Provide soap, clean towels, and appropriate containers for disposal of used respirator filters.

.4 Clean Room: build a Clean Room between 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 a mirror to permit workers to fit respiratory equipment properly.

.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.

.5 Do not begin lead abatement work until:

.1 Arrangements have been made for disposal of lead-containing waste.

.2 Arrangements have been made for containing, filtering, testing and disposal of waste water.

.3 Work areas, decontamination enclosures and parts of project site 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.

.8 Departmental Representative has reviewed preparatory work and provided written approval for lead abatement work to proceed.

3.3 SUPERVISION

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

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

3.4 LEAD REMOVAL

.1 The removal or disturbance of asbestos-containing materials coated with lead-containing coatings must also be performed using appropriate asbestos and/or silica precautions as outlined in the specifications.

.2 Before removing lead-containing paint or disturbing other lead containing or contaminated materials:

.1 Prepare site.

.2 Spray surfaces to be disturbed, that are finished with lead-containing paint, with water using airless spray equipment capable of providing a “mist” application to prevent the release of dust.

.3 Lead-containing paint, and surface coating removal:

.1 Methods of lead-containing paint and surface coating removal/disturbance that may be used, pending approval from the Departmental Representative, include:

.1 Powered tools equipped with HEPA dust collection systems.

.2 Other method(s) at the sole discretion of the Departmental Representative

.4 At completion of lead-containing paint and surface coatings removals, perform the following clean-up:

.1 Wait at least 1-hour after active lead abatement work has ceased to allow airborne lead particles to settle.

.2 HEPA vacuum all surfaces within the Lead Work Area. Start vacuuming at the highest levels furthest from the Decontamination Facilities and work progressively downwards towards the Decontamination Facilities.

.3 Wash all surfaces with Lead Cleaning Agent and rinse with clean water. Start washing and rinsing at the highest levels furthest from the Decontamination Facilities and work progressively downwards towards the Decontamination Facilities.

.4 Repeat HEPA vacuuming, washing and rinsing as required to achieve clearance criteria.

3.5 INSPECTION

.1 Perform inspections of Lead Work Area to confirm compliance with specification and requirements of authorities having jurisdiction. Deviation from these requirements that have not been approved in writing by the Departmental Representative may result in Work stoppage, at no cost.

.2 Departmental Representative will inspect 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 a leakage of liquid, dust or fume from the Lead Work Area has occurred or is likely to occur the Departmental Representative Construction Manager may order Work shutdown.

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

3.6 AIR MONITORING AND SURFACE WIPE SAMPLING

.1 From beginning of Work until completion of cleaning operations, the Departmental Representative may be on site to collect air samples either inside or outside of the Lead Work Area in accordance with standard methods for workplace air sampling and analysis.

.1 This air monitoring does not relieve the Contractor of any responsibility for air monitoring inside the Lead Work Area to verify that the respiratory protection in use provides a suitable protection factor.

.2 Use results of air monitoring inside the Lead Work Area to establish type of respirators to be used. Workers may be required to wear sample pumps for up two full-shift periods.

.1 If airborne lead concentrations are above the protection factor of respirators in use, the Contractor shall:

.1 Stop abatement.

.2 Introduce more stringent engineering controls.

.3 Use a higher protection factor in respiratory protection for persons inside the Lead Work Area.

.2 If air monitoring shows that airborne lead concentrations outside the Lead Work Area exceed 0.025 mg/m³, the Contractor shall maintain and clean these areas, in same manner as applicable to the Lead Work Area, at no additional cost.

.3 Final clearance air monitoring will be performed at the sole discretion of the Departmental Representative.

.1 Final air monitoring results must show airborne lead levels less than 0.005 mg/m³.

.2 If air monitoring results show airborne lead levels in excess of 0.005 mg/m³, the Contractor shall re-clean the Lead Work Area at no additional cost.

.3 Repeat as necessary until airborne lead levels are less than 0.005 mg/m³.

.4 The following criteria shall be used to define an acceptable level of cleanliness after lead abatement activities:

.1 Where removal of paints and other surface coatings has been performed to accommodate the project scope of work:

.1 Visibly free of paint(s), primer(s), and surface coating(s), and/or associated dust.

.2 Residual lead dust concentration less than:

.1 2,150 micrograms/square metre for interior floor surfaces

.2 2,691 micrograms/square metre for interior windowsills

.3 8,611 micrograms/square metre for exterior surfaces

.4 Repeat cleaning as necessary until lead concentrations are below specified levels, at no additional cost.

3.7 FINAL CLEANUP

.1 Remove polyethylene sheet by rolling it towards the centre of the Lead Work Area. Immediately vacuum any visible paint chips, particles, dust and debris observed during cleanup using HEPA vacuum equipment.

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

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

.4 Include in clean-up sealed waste containers and equipment used in Work and remove from work areas, at appropriate time in cleaning sequence.

.5 A final check may be carried out to ensure that no lead dust or debris remains on surfaces as a result of dismantling operations.

.6 As work progresses, and to prevent exceeding available storage capacity on site, remove sealed and labelled waste containers.

.1 Dispose of lead-containing waste in accordance with R.R.O. 1990, Regulation 347, as amended. Ensure that waste hauler and receiver are fully aware of hazardous nature of material to be disposed of and that guidelines and regulations for lead-containing waste disposal are followed.

.2 Ensure that materials removed during the Work of this Section are treated, packaged, transported and disposed of as lead-containing waste.

.3 Clean up waste routes and loading area after each load. Use lead abatement procedures if appropriate or requested by Departmental Representative.

.4 Drop garbage bins at designated locations. Keep bins covered and enclosed while at the site. Bin loading area shall be kept clean at all times.

.5 Transport all waste to a landfill licensed by the Authority having jurisdiction.

.6 Provide Departmental Representative with copies of shipping documents and lead-containing waste manifests for each load of waste. The Contractor is responsible to ensure that written documentation is submitted for each load of waste leaving the site.

.7 Cooperate with provincial inspectors and immediately carry out instructions for remedial work at landfill to maintain environment, at no additional cost.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 This section specifies requirements and procedures for silica precautionary measures. This section conforms to the requirements of the Ontario Occupational Health and Safety Act, R.S.O. 1990, Regulation 490/09 “Designated Substances”, as amended.

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

.1 Work at site which may involve contact with silica dust generated through such processes as sawing, cutting, grinding, blasting and/or breaking of the silica containing material.

.3 Refer to the following documents for details on silica-containing materials:

.1 Section 01 14 25 – Designated Substances

1.2 RELATED SECTIONS

.1 Section 01 14 25 – Designated Substances

.2 Section 02 83 00 – Lead Precautionary Measures

1.3 REFERENCES

.1 Comply with current Federal, Provincial, and local requirements pertaining to silica, 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 Federal Legislation

.1 Canada Labour Code and associated regulations.

.3 Provincial legislation

.1 Ontario Occupational Health and Safety Act, R.S.O. 1990, Regulation 490/09 “Designated Substances”, as amended.

.2 Ministry of Labour – Silica on Construction Projects, as revised.

1.4 DEFINITIONS

.1 **Dangerous Goods:** product, substance, or organism that is specifically listed or meets hazard criteria established in Transportation of Dangerous Goods Regulations.

.2 **Hazardous Material:** product, substance, or organism that is used for its original purpose; and that is either dangerous goods or a material that may cause adverse impact to environment or adversely affect health of persons, animals, or plant life when released into the environment.

.3 **Hazardous Material Workplan**: A brief report identifying the location and quantities of hazardous materials and the methods that will be used to remove, store, transport and dispose of them.

.4 **Workplace Hazardous Materials Information System (WHMIS):** Canada-wide system designed to give employers and workers information about hazardous materials used in workplace. Under WHMIS, information on hazardous materials is provided on container labels, safety data sheets (SDS), and worker education programs. WHMIS is put into effect by combination of federal and provincial laws.

1.5 SUBMITTALS

.1 Silica abatement section within Hazardous Material Work Plan.

1.6 PRECAUTIONARY MEASURES AND PROCEDURES

.1 Execute work by methods to minimize raising silica dust from demolition operations. Where practical, wet methods or a dust collection system should be used to reduce dust.

.2 Adequate ventilation, including local exhaust ventilation, should be maintained to prevent the accumulation and recirculation of harmful concentrations of free crystalline silica in the work area.

.3 As practical, processes that generate silica dust should be completed in enclosed areas wherever possible to prevent the spread of silica dust outside of the work area.

.4 Implement and maintain silica dust control measures during work to ensure that silica levels do not exceed allowable limits.

.5 Departmental Representative may stop work at any time when release of silica dust to adjacent area is suspected. Contractor must discuss procedures that Contractor proposes to resolve problem. Make all necessary changes to operations prior to resuming any demolition activities that may cause release of silica dust at no extra cost to the Departmental Representative.

.6 Silica dust should be cleaned from machinery and work surfaces by wet sweeping, the use of sweeping compounds or vacuum cleaners fitted with a HEPA filter to prevent the recirculation of dusty air. Cleaning methods such as blowing with compressed air or dry sweeping should be avoided. Where exposure to free crystalline silica occurs, protective work clothing should be vacuumed before removal.

.7 Store material containing silica dust in closed containers or use other appropriate means to prevent dust from becoming airborne.

1.7 PERSONAL PROTECTIVE EQUIPMENT

.1 Anticipated minimum levels of personal protection based on work activity involving silica dust are listed below and are in addition to the personal protective equipment required for the completion of the demolition activities. Personal protection is dependent on the work practices and associated silica exposure risks.

.1 Air purifying respirator equipped with HEPA filter cartridges or supplied-air type, personally issued to the worker and marked as to efficiency and purpose, and acceptable to the Provincial (Ontario) Authority having jurisdiction as suitable for silica and the level of silica exposure in the 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 Eye Protection: Goggles, Safety glasses with side shields, or Face shield.

.3 If requested by a worker,

.1 Hand Protection: Gloves

.2 Clothing: Full body protective clothing

1.8 AIR MONITORING

.1 If air monitoring shows that work areas contain crystalline silica above applicable regulated occupational exposure limits, these areas shall be cleaned by previously outlined methods at no additional cost to the Departmental Representative.

1.9 PERMITS

.1 Contractor is responsible to obtain all necessary permits, licenses and approvals to conduct the abatement.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION