



Public Works and
Government Services Canada

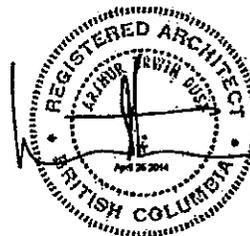
Requisition Number: EZ899-150058/A
MERX I.D. Number: _____
SPECIFICATIONS for:
**The Gulf of Georgia Cannery – Building
Envelope Remediation**
12138 Fourth Avenue,
Richmond, BC V7E 3J1
Project Number: R.060702.001

APPROVED BY:
[Signature]
Regional Manager, AES
Date: Apr. 28/2014

[Signature]
Construction Safety Coordinator
Date: 2014-04-28

TENDER:
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Project Manager
Date: 14/04/20

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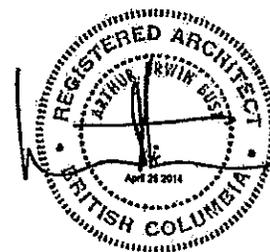
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DST Consulting Engineers Inc.- Lead and Asbestos Analysis Report as prepared by Asbestos Analytical Services Ltd., Issued September 18, 2013.

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- BE1.0 Site Plan – Issued for Tender, April 2014.
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1 GENERAL

1.01 WORK DESCRIBED BY CONTRACT DOCUMENTS

- .1 The work of this contract comprises of the partial building envelope repair of the Gulf of Georgia Cannery, located at 12138 Fourth Avenue, Richmond BC.
- .2 Work to be performed under this Contract includes the following items covered further in the Contract documents:
 - .1 Old Cannery Building (North and West elevations), Oil Drum Storage (all elevations), Lead Foundry and Watch Shed (all elevations) and Vitamin Oil Shed (North, South and West elevations):
 - .1 Temporary removal and storage of existing gutters, downspouts and fascia flashing. Repaint and reinstall after painting of siding completed.
 - .2 Lead Foundry and Watch Shed: repair of interior wood gutters with membrane.
 - .3 Review of testing reports provided with Tender documents.
 - .4 Removal of all exterior paint from surfaces, including but not limited to siding, corner trims, door and window trims, wood gutters, grilles, window head flashings, louvres and existing metal siding.
 - .5 Identification of all deteriorated siding where not an acceptable substrate for repainting.
 - .6 Old Cannery Building (West elevation): removal of bottom four rows of siding and installation of new fir siding, back-primed and painted.
 - .7 Old Cannery Building (West elevation): temporary removal, repair, repainting and reinstallation of wood boxes on North-West corner.
 - .8 Removal of window security grilles, storing where directed by Parks Canada. Reinstall security grilles to Lead Foundry and Watch Shed only.
 - .9 Window frames and sashes (interior and exterior): temporary removal of existing finish, wood rot, patching and repainting. Removal of existing linseed putty and re-glazing of existing panes, reinstalling sashes rendering sashes inoperable with fasteners.
 - .10 Back-priming of all fir siding, only where not visible.
 - .11 Painting of siding, doors, corner trims, exterior window trims, window and door head flashings, gutters, wood boxes, drain pipes, fascia boards, soffits, gable vents and rafters.
 - .2 Dryer Addition:
 - .1 Removal disposal of existing deteriorated fascia as indicated and installation of marine grade plywood of same dimensions, painted all faces to match.
 - .2 Temporary removal of existing fascia flashing during remediation, repainting and reinstallation.
 - .3 Removal of existing exterior paint (including lead-containing & PCB) finish to substrate from wood soffit. Repainted to match.
- .3 Contractor shall take possession of the project area and be contractually responsible for all construction activities. Cooperate with Parks Canada in scheduling operations to minimize conflict and to facilitate usage.

1.02 TIME OF COMPLETION

- .1 Commence work upon notification of acceptance and complete work within sixteen (16) weeks.

1.03 MINIMUM STANDARDS

- .1 Work to conform to the minimum applicable standards of the Canadian General Standards Board, the Canadian Standards Association, the National Building Code of Canada 2010 (NBC) and applicable Provincial and Municipal codes. In the case of conflict or discrepancy, the most stringent requirement applies.
- .2 Work must be carried out in conformance to WorkSafe BC safety standards and requirements.
- .3 Meet or exceed requirements of Contract documents, specified standards, codes and referenced documents.

1.04 CONTRACT DOCUMENTS

- .1 The Contract documents, drawings and specifications are intended to complement each other, and to provide for and include everything necessary for the completion of the work. Drawings are, in general, diagrammatic and are intended to indicate the scope and general arrangement of the work. Drawings have been prepared in colour for clarity purposes and are intended to be printed in colour. Contractor is responsible for any misinterpretations caused as a result of printing in black and white.

1.05 DIVISION OF SPECIFICATIONS

- .1 The specifications are subdivided in accordance with the current 6-digit National Master Specifications System.
- .2 A division may consist of the work of more than one subcontractor. Responsibility for determining which subcontractor provides the labour, material, equipment and services required to complete the work rests solely with the Contractor.
- .3 In the event of discrepancies or conflicts when interpreting the drawings and specifications, the specifications govern.

1.06 TAXES

- .1 Pay all taxes properly levied by law (including Federal, Provincial and Municipal).

1.07 REGULATORY REQUIREMENTS

- .1 Obtain and pay for - Building Permit, Certificates, Licenses and other permits required by regulatory municipal, provincial or federal authorities to complete the work.
- .2 Provide inspection authorities with plans and information required for issue of acceptance certificates.
- .3 Furnish inspection certificates in evidence that the work installed conforms with the requirements of the authority having jurisdiction.

1.08 PROJECT MEETINGS

- .1 Contractor will schedule a project start-up meeting following notice of acceptance.
- .2 Agenda to include lines of communication, contact information, scheduling and coordination.

- .3 Subsequent meetings will be called as required.

1.09 CONTRACTOR'S USE OF SITE

- .1 Use of site:
 - .1 The Gulf of Georgia Cannery will remain an active National Historic Site. Parks Canada Western Region has control over the site. All activities and security controls must remain operational at all times unless otherwise indicated. Coordinate with the Departmental Representative for all activities that impact on-going operations.
 - .2 Be responsible that removed paint does not fall into the water below the Cannery.
 - .3 Work restrictions and security provisions will be enforced.
 - .4 Assume responsibility for assigned premises for laydown and storage areas as indicated and for performance of this work.
 - .5 Be responsible for coordination of all work activities on site, including the work of other contractors engaged by the Departmental Representative.
- .2 Perform work in accordance with Contract documents. Ensure work is carried out in accordance with indicated phasing.
- .3 Do not unreasonably encumber site with material or equipment.
- .4 Maintain scaffolding and hoarding throughout duration of work. Do not exceed areas indicated unless written approval by Departmental Representative is provided.
- .5 Execute work with least possible interference or disturbance to normal use. Make arrangements with Departmental Representative to facilitate work as stated.
- .6 Maintain existing services and provide for personnel, visitor and vehicle access.
- .7 Where security is reduced by work, provide temporary means to maintain security. Review measures with Departmental Representative before proceeding.

1.10 HOURS OF WORK

- .1 The Gulf of Georgia Cannery National Historic Site is operational for staff daily from 08:30 to 17:30 and to the public daily from 10:00 – 17:00.
 - .1 Access to the vicinity of the site is not restricted.
 - .2 Carry out work Monday to Friday 08:30 to 17:30 hours and Saturday, Sunday and statutory holidays 10:00 to 17:00 hours. Interior work must be carried out Monday to Friday 09:30 to 17:30 hours only or at times directed by the authorities having jurisdiction.
- .2 Hours of work :
 - .1 Contractor may submit work schedule in cooperation with Departmental Representative.
- .3 Notify Departmental Representative and seek approval of all after hours work, including weekends and holidays.
- .4 Primary contact of Gulf of Georgia Cannery is:
 - Rebecca Clarke, Executive Director
 - Phone: 604-664-9192
 - Email: rebecca.clarke@pc.gc.ca

1.11 SECURITY

- .1 For Contractor access to building interior and for contractor access to exterior work after 17:30 hours, coordinate with and pay for the services of a commissionaire from the BC Commissionaires from the time of beginning work on site until substantial completion of the work. The contractor shall provide the Departmental Representative with an estimate of the total cost for that requirement after contract award at which time the Departmental Representative will then contract directly with Commissionaires BC for that work and pay for those costs directly accordingly since they will not work directly for the contractor. Upon completion of the contract work, a change order credit will be issued for the full cost of the Commissionaires so the contractor shall allow for that cost in their contract pricing. Contractor can refer to the following web site as a reference:
<http://www.commissionaires.bc.ca>
- .2 Provide required service for any security to contractor's forces for further works to be done between substantial and final completion.

1.12 NON SMOKING ENVIRONMENT

- .1 Smoking is not permitted on site.

1.13 WORK SCHEDULE

- .1 Provide detailed project schedule (Gantt Bar Chart) within 5 working days of Award of Contract date showing activity sequencing, interdependencies and duration estimates. Include listed activities as follows:
 - .1 Shop drawings.
 - .2 Samples.
 - .3 Approvals.
 - .4 Procurement.
 - .5 Construction.
 - .6 Installation.
 - .7 Site works.
 - .8 Testing.
 - .9 Acceptance.
- .2 Do not change approved schedule without notifying and receiving approval from Departmental Representative.
- .3 Interim reviews of work progress based on work schedule will be conducted as decided by Departmental Representative and schedule updated by Contractor in conjunction with and to approval of Departmental Representative.
- .4 Schedule Work in consultation with Departmental Representative to minimize impact on public use of facility during operating hours.

1.14 SUBMITTALS

- .1 Product Data: Manufacturers catalogue sheets, brochures, literature, performance charts and diagrams.
 - .1 Submit electronic copies of documentation.
 - .2 Delete information not applicable to project.
 - .3 Cross-reference product data information to applicable portion of Contract Documents.

- .2 Samples: examples of materials, equipment, quality, finishes and workmanship.
 - .1 Provide two samples of each material as indicated in technical sections.
 - .2 Where colour, pattern or texture is criterion, submit full range of samples.
 - .3 Reviewed and accepted samples will become standard of workmanship and material against which installed work will be verified.

- .3 Shop Drawings:
 - .1 Submit electronic copies of all shop drawings to include:
 - .1 Date.
 - .2 Project Title and number.
 - .3 Name and address of Subcontractor, Supplier and Manufacturer.
 - .4 Fabrication.
 - .5 Key plan and layout, showing dimensions, including identified field dimensions and clearances.
 - .6 Setting or erection details.
 - .7 Relationship to adjacent work.
 - .8 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .9 Revised shop drawing submissions to be bubbled identifying revisions.
 - .2 Submit drawings stamped and signed by professional engineer registered and licensed in the Province of British Columbia as indicated.

1.15 COST BREAKDOWN

- .1 Before submitting the first progress claim, submit a breakdown of the Contract lump sum prices in detail as directed by the Departmental Representative and aggregating Contract price.

1.16 DOCUMENTS REQUIRED

- .1 Maintain at job site, one copy each document as follows:
 - .1 Contract Drawings.
 - .2 Contract Specifications.
 - .3 Addenda to Contract Documents.
 - .4 Copy of approved work schedule.
 - .5 Environmental Protection Plan.
 - .6 Reviewed and approved Shop Drawings.
 - .7 List of Outstanding Shop Drawings.
 - .8 Change Orders.
 - .9 Other Modifications to Contract.
 - .10 Field Test Reports.
 - .11 Reviewed and approved samples.
 - .12 Copy of Approved Work Schedule.
 - .13 Manufacturer's installation and application instructions.
 - .14 National Building Code, 2010.
 - .15 Health and Safety Plan and Other Safety Related Documents.
 - .16 Other documents as specified.

1.17 HEALTH, SAFETY AND HAZARDOUS MATERIALS

- .1 Comply with Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.
- .2 Comply with British Columbia Workers Compensation Act.

- .3 Perform duties in accordance with the British Columbia Occupational Health and Safety Regulation.
- .4 Submit copies of WCB Clearance Letter and WCB Contractor Rating. Submit copy of Final WCB Clearance Letter at completion of project.
- .5 Submit letter stating that Contractor assumes the role of Prime Contractor for the purposes of site safety responsibility and the Workers Compensation Act.
- .6 Submit copies of work site health and safety meeting minutes, inspection reports, reports or directions issued by Federal, Provincial or Municipal health and safety inspectors, incident and accident reports, and follow-up reports.
- .7 Work at site may involve contact with PCB and lead-containing paint. Take appropriate precautions.
- .8 Notify the Departmental Representative 48 hours for access to interior work and advise if work involves hazardous substances (Canada Labour Code, Part II, Section 10) or caulking.

1.18 EXAMINATION

- .1 Examine site and be familiar and conversant with existing conditions likely to affect work.
- .2 Provide photographs of surrounding objects and structures liable to be damaged or be the subject of subsequent claims (photographs not to include staff on duty).

1.19 EXISTING SERVICES

- .1 Where work involves breaking into or connecting to existing services, carry out work at times directed by the authorities having jurisdiction.

1.20 LOCATION OF EQUIPMENT AND FIXTURES

- .1 Location of equipment indicated or specified are to be considered as approximate.
- .2 Locate equipment to provide minimum interference and maximum usable space, and in accordance with manufacturer's recommendations for safety, access and maintenance.
- .3 Inform Departmental Representative of impending installation and obtain his approval for actual location.
- .4 Submit field drawings or shop drawings to indicate the relative position of various services and equipment when required by the Departmental Representative and/or as specified.

1.21 SETTING OUT OF WORK

- .1 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated.
- .2 Provide devices needed to lay out and construct work.

1.22 ACCEPTANCE OF SUBSTRATES

- .1 Each trade shall examine surfaces prepared by others and job conditions which may affect his work, and shall report defects to the Contractor. Commencement of work shall imply acceptance of prepared work or substrate surfaces.

1.23 QUALITY OF WORK

- .1 Remedial Work:
 - .1 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of work.
 - .2 Perform remedial work required to repair or replace part or portions of Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.
- .2 Ensure that quality workmanship is performed through use of skilled and experienced tradesmen, under supervision of qualified journeyman.
- .3 The workmanship, erection methods and procedures to meet minimum standards set out in the National Building Code Construction Standards.
- .4 In cases of dispute, decisions as to standard or quality of work rest solely with the Departmental Representative whose decision is final.

1.24 WORKS COORDINATION

- .1 Coordinate work of subtrades:
 - .1 Designate one person to be responsible for review of contract documents and shop drawings and managing coordination of Work.
- .2 Convene meetings between subcontractors whose work interfaces and ensure awareness of areas and extent of interface required.
 - .1 Provide each subcontractor with complete plans and specifications for Contract, to assist them in planning and carrying out their respective work.
 - .2 Develop coordination drawings when required, illustrating potential interference between work of various trades and distribute to affected parties.
 - .1 Pay particularly close attention to overhead work or near to building structural elements, including existing roof.
 - .2 Identify on coordination drawings, building elements and interface requirements.
 - .3 Facilitate meeting and review coordination drawings. Ensure subcontractors agree and sign off on drawings.
 - .4 Publish minutes of each meeting.
 - .5 Submit copy of coordination drawings and meeting minutes to Departmental Representative for information purposes.
- .3 Submit shop drawings and of rebuilt components only after coordination meeting for such items has taken place.
- .4 Work cooperation:
 - .1 Ensure cooperation between trades in order to facilitate general progress of Work and avoid situations of interference.
 - .2 Ensure that each trade provides all other trades reasonable opportunity for completion of Work and in such a way as to prevent unnecessary delays, patching and removal or replacement of completed work.

- .3 Ensure disputes between subcontractors are resolved.
- .5 Departmental Representative is not responsible for, or accountable for extra costs incurred as a result of Contractor's failure to coordinate Work.
- .6 Maintain efficient and continuous supervision. Full-time site superintendent required throughout project.

1.25 APPROVAL OF SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- .1 In accordance with Section 01 33 00 - Submittals Procedures, submit the requested shop drawings, product data, MSDS sheets and samples indicated in each of the technical Sections.
- .2 Allow sufficient time for the following:
 - .1 Review of product data.
 - .2 Approval of shop drawings.
 - .3 Review of re-submission.
 - .4 Ordering of approved material and/or products - refer to technical sections.

1.26 TESTING AND INSPECTIONS

- .1 Particular requirements for inspection and testing to be carried out by testing service or laboratory approved by the Departmental Representative.
- .2 The Contractor will appoint and pay for the services of testing agency or testing laboratory as specified, and where required for the following:
 - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
 - .2 Inspection and testing performed exclusively for Contractor's convenience.
 - .1 Mill tests and certificates of compliance.
 - .2 MPI Painting Inspections.
 - .3 Tests specified to be carried out by Contractor under the Departmental Representative's supervision.
- .3 Where tests or inspections by designated testing laboratory reveal work is not in accordance with the Contract requirements, Contractor shall pay costs for additional tests or inspections as the Departmental Representative may require to verify acceptability of corrected work.
- .4 Contractor shall furnish labour and facilities to:
 - .1 Notify Departmental Representative in advance of planned testing.
- .5 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.
- .6 Pay costs for uncovering and making good work that is covered before required inspection or testing is completed and approved by Departmental Representative.
- .7 The Departmental Representative may require, and pay for, additional inspection and testing services.
- .8 Provide Departmental Representative with 2 copies of testing laboratory reports as soon as they are available.

1.27 AS-BUILT DOCUMENTS

- .1 The Departmental Representative will provide 2 sets of drawings, 2 sets of specifications, for "as-built" purposes.
- .2 As work progresses, maintain accurate records to show all deviations from the Contract documents. Note on as-built specifications, drawings and shop drawings as changes occur.

1.28 CLEANING

- .1 Daily conduct cleaning and disposal operations. Comply with local ordinances and anti-pollution laws.
- .2 Ensure cleanup of the work areas each day after completion of work.
- .3 In preparation for interim and final inspections:
 - .1 Examine all sight-exposed exterior surfaced and concealed spaces.
 - .2 Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed exterior finished surfaces, including glass.
- .4 Use cleaning materials and methods in accordance with instructions of the manufacturer of the surface to be cleaned.

1.29 CONTROL

- .1 Existing Structure:
 - .1 The existing structures are part of this National Historic Site. The Contractor and sub trade personnel shall pay utmost attention to the preservation of all existing items on this site at all times during remediation work. Prior to the commencement of this project, the Contractor shall submit to the Departmental Representative a list of all proposed protection measures for approval. This list must identify procedures for the protection of adjacent building materials and elements to prevent accidental damage to this national historic site for the duration of the project.
- .2 Provide temporary dust tight screens and/or partitions to localize dust generating activities, and for protection of workers, finished areas of work and public. Precautionary measure shall be taken for potential source of Lead and Arsenic dust within the complex. Refer to Appendix 1, Appendix 2 and Appendix 3.
- .3 Protect work area with scaffolding structure for work with weather-tight polyethylene film during construction.
- .4 Maintain and relocate protection until work is complete.

1.30 PUBLIC WAY CONSTRUCTION

- .1 Design, erect and maintain hoarding and covered pedestrian walkways to support all loads including windloads and provide protection, complete with signs and electrical lighting as required by authority having jurisdiction and Departmental Representative.

1.31 RELICS AND ANTIQUITIES

- .1 Relics and antiquities and items of historical or scientific interest shall remain property of Department. Protect such articles and request directives from Departmental Representative.
- .2 Give immediate notice to Departmental Representative if evidence of historical or archeological finds are encountered during remediation work and await Departmental Representative's written instructions before proceeding with work in this area.

1.32 ENVIRONMENTAL PROTECTION

- .1 Contractor is responsible for environmental protection during all construction activities at all locations work is performed.
- .2 Ensure removed paint, debris and paint overspray does not fall into the Fraser River under the Cannery Pier in accordance with applicable legislation.
- .3 Prevent extraneous materials from contaminating air beyond construction area, by providing temporary extensions to Mechanical intake louvres during work.
- .4 Environmental degradation arising from construction activities shall be prevented, abated, controlled and minimized by complying with all applicable federal, provincial and local laws and regulations concerning environmental pollution control and abatement.
- .5 Do not dispose of waste or volatile materials into water courses, storm or sanitary sewers. Construction methods shall be employed to ensure no fuels, oils, wood preservatives or other contaminants enter the Fraser River. As general Mitigation Measures for this project, it must be enforced and closely supervised and monitored as follows:
 - .1 All contractors and work crews must be briefed upon the importance of adhering to prescribed best practices or mitigation measures. Project meeting prior to commencement of the work shall indicate the above requirements have been fully explained to the contractor and staff.
 - .2 A copy of the mitigation measures shall be posted in a conspicuous location on site or readily accessible for reference.
 - .3 Conduct work in a manner which clearly separates visitors from the active construction area on site to minimize potential accidents for public safety.
 - .4 Contractor and sub trade personnel must develop and maintain spill response and reporting procedures including containment methods. In the event of a spill, contact the Provincial Emergency Program at 1-800-663-3456.
 - .5 The Contractor is to have personnel on site that are trained and ready to use spill containment kits. Ensure proper disposal procedures in accordance with all applicable provincial and municipal regulations. Fires and burning of rubbish on site is not permitted.
 - .6 The Contractor must have all spill containment kits ready for immediate deployment, containing sufficient quantities of absorbent materials on site in close proximity to working machinery and equipment such as fuel portable generator, air compressors, hoist and tools.
 - .7 Ensure all equipment used on site is clean and free from contaminants.
- .6 Ensure proper disposal procedures in accordance with all applicable provincial regulations.

1.33 MAINTENANCE MATERIALS, SPECIAL TOOLS AND SPARE PARTS

- .1 Specific requirements for maintenance materials, tools and spare parts are specified in individual technical sections.

1.34 ADDITIONAL DRAWINGS

- .1 The Departmental Representative may furnish additional drawings for clarification. These additional drawings have the same meaning and intent as if they were included with plans referred to in the Contract documents.
- .2 Upon request, Departmental Representative may furnish up to a maximum of 5 sets of Contract documents for use by the Contractor at no additional cost. Should more than 5 sets of documents be required the Departmental Representative will provide them at additional cost.

1.35 SYSTEM OF MEASUREMENT

- .1 The metric system of measurement (SI) will be employed on this Contract.

1.36 FAMILIARITY WITH SITE

- .1 Before submitting tender, visit site - as indicated in tender documents and become familiar with all conditions likely to affect the cost of the work.

1.37 SUBMISSION OF TENDER

- .1 Submission of a tender is deemed to be confirmation of the fact that the Tenderer has analyzed the Contract documents and inspected the site, and is fully conversant with all conditions.

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

3.01 NOT USED

- .1 Not used.

END OF SECTION

1 GENERAL

1.01 ACCESS AND EGRESS

- .1 Design, construct and maintain temporary "access to" and "egress from" work areas, including stairs or ladders and scaffolding, independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations.

1.02 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Departmental Representative to facilitate work as stated.
- .2 Maintain existing services to building and provide for personnel and vehicle access.
- .3 Where security is reduced by work provide temporary means to maintain security as approved by Departmental Representative.
- .4 Washroom facilities are available at the free-standing public washroom building located by the main entry.
- .5 Elevators are not permitted for Contractor use.
- .6 Closures: protect work temporarily until permanent enclosures are completed.

1.03 HOURS OF WORK

- .1 The Cannery is operational daily from 08:30 to 17:30 for staff and from 10:00 to 17:00 for the public. Contractor may set his own schedule of work onsite, within restrictions specified. Submit proposed hours-of-work to Departmental Representative for review and approval with Work in accordance with Section 01 11 55 – General Instructions.
- .2 Disruptive construction noise and operations to be executed before 11:00 daily.
- .3 Contractor must give Departmental Representative 48 hours notice of construction activity requiring access to the interior of the buildings.
 - .1 Workers must notify reception desk at time of entry and at time of departure of interior work.

1.04 ALTERATIONS AND REPAIRS TO EXISTING BUILDING

- .1 Execute work with least possible interference or disturbance to building operations occupants, public and normal use of premises.
- .2 Maintain existing services and abide by regulations for personnel and vehicle access.
- .3 Closures: protect work temporarily, including where window sashes temporarily until project is complete.
- .4 Protect existing metal and membrane roof finish during demolition and completion of Work. Provide protective sheathing to roof. Repair or make good to better condition any damage to existing roof.

- .5 Any work which impacts the operations onsite must have one (1) week notice and must be approved by Departmental Representative. Five (5) visitor parking passes, valid for duration of the work will be allocated to the Contractor for the visitor's parking lot. Work truck will be allowed to be located in the Contractor's laydown area where indicated. Additional parking will be permitted where directed by Departmental Representative. Do not occupy any other parking areas without the approval of the Departmental Representative.
- .6 Construction crews are not permitted to use washrooms in the main building. Refer to Section 01 51 00 – Temporary Utilities.

1.05 EXISTING SERVICES

- .1 Notify Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .2 Where work involves breaking into or connecting to existing services, give Departmental Representative one (1) week notice for permission. The maximum number of shut-down periods, is limited to four (4) for duration of the project.
- .3 Provide for personnel and pedestrian traffic.
- .4 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.
- .5 Contractor will be held responsible for damages to facility equipment as the result of service shut-downs.
- .6 Contractor will be held responsible for unscheduled shut-downs of building utilities and services.
- .7 Contractor will not be allowed to connect to Owner's existing data and communication services for his own use.

1.06 SPECIAL REQUIREMENTS

- .1 Security Cameras:
 - .1 Security cameras to be remain operational. Cameras requiring temporary relocation to be serviced as directed by Departmental Representative.
- .2 Ensure Contractor's personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .3 Keep within limits of work and avenues of ingress and egress. Respect properties adjacent to work site, providing continued access for public vehicular and pedestrian traffic.
- .4 Noise Generation:
 - .1 Means and procedures of controlling and isolating other excessive or disturbing noise and vibration affecting occupied areas shall be the responsibility of the Contractor and approved by the Departmental Representative.

1.07 SECURITY

- .1 Be accountable for tools/equipment at all times. Do not leave tools unattended and/or within reach of the travelling public.

- .2 Act professionally at all times. No foul language or rude behavior.
- .3 Do not interact with the public, unless authorized to do so where required.

1.08 BUILDING SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions. Smoking is not permitted on the site.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED

- .1 Not Used.

END OF SECTION

1 GENERAL

1.01 RELATED REQUIREMENTS

- .1 Particular requirements for inspection and testing to be carried out by testing laboratory designated by Departmental Representative as specified in technical sections.

1.02 APPOINTMENT AND PAYMENT

- .1 Departmental Representative will appoint and pay for services of testing laboratory except follows:
 - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
 - .2 Inspection and testing performed exclusively for Contractor's convenience.
 - .3 Testing, adjustment and balancing of conveying systems, mechanical and electrical equipment and systems.
 - .4 Mill tests and certificates of compliance.
 - .5 Tests specified to be carried out by Contractor under supervision of Departmental Representative.
- .2 Where tests or inspections by designated testing laboratory reveal Work not in accordance with contract requirements, Contractor to pay costs for additional tests or inspections as required by Departmental Representative to verify acceptability of corrected work.

1.03 CONTRACTOR'S RESPONSIBILITIES

- .1 Provide labour, equipment and facilities to:
 - .1 Provide access to Work for inspection and testing.
 - .2 Facilitate inspections and tests.
 - .3 Make good Work disturbed by inspection and test.
 - .4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.
- .2 Notify Departmental Representative 72 hours minimum sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.
- .3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.
- .4 Pay costs for uncovering and making good Work that is covered before required inspection or testing is completed and approved by Departmental Representative.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED

.1 Not Used.

END OF SECTION

1 GENERAL

1.01 ADMINISTRATIVE

- .1 Contractor will arrange pre-construction project meeting.
- .2 Contractor to assume responsibility for setting meeting times and recording and distributing meeting minutes. Contractor to attend project meetings throughout the progress of the work and at the call of Departmental Representative.
- .3 Contractor to provide physical space and make arrangements for progress meetings.
- .4 Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

1.02 PRECONSTRUCTION MEETING

- .1 Contractor will:
 - .1 Within ten (10) days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
 - .2 Departmental Representative, Contractor, major Subcontractors, field reviewers and supervisors will be in attendance.
 - .3 Establish time and location of meeting and notify parties concerned minimum five (5) days before meeting.
 - .4 Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.
- .5 Provide Agenda, to include:
 - .1 Appointment of official representative of participants in the Work.
 - .2 Schedule of Work: in accordance with Section 01 11 55 – General Instructions – Bar (Gantt) Chart.
 - .3 Schedule of submission of shop drawings and samples. Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.
 - .4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 52 00 - Construction Facilities.
 - .5 Delivery schedule of specified equipment.
 - .6 Site security in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.
 - .7 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
 - .8 Record drawings in accordance with Section 01 78 00 - Closeout Submittals.
 - .9 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 - Closeout Submittals.
 - .10 Monthly progress claims, administrative procedures, photographs, hold backs.
 - .11 Appointment of inspection firms.
 - .12 Insurances, transcript of policies.

1.03 PROGRESS MEETINGS

- .1 Contractor will:
 - .1 During course of Work and up to project completion, schedule progress meetings every two weeks. Additional meetings will be scheduled to resolve extraordinary issues as required.

- .2 Contractor, major Subcontractors involved in Work and Departmental Representative are to be in attendance.
- .3 Notify parties minimum three (3) days prior to meetings.
- .4 Contractor will record minutes of progress meetings and circulate to attending parties and affected parties not in attendance.
- .5 Provide Agenda. Agenda to include the following:
 - .1 Review, approval of minutes of previous meeting.
 - .2 Review of Work progress since previous meeting.
 - .3 Field observations, problems, conflicts.
 - .4 Problems which impede construction schedule.
 - .5 Review of off-site fabrication delivery schedules.
 - .6 Corrective measures and procedures to regain projected schedule.
 - .7 Revision to construction schedule.
 - .8 Progress schedule, during succeeding work period.
 - .9 Review submittal schedules; expedite as required.
 - .10 Maintenance of quality standards.
 - .11 Review proposed changes for affect on construction schedule and on completion date.
 - .12 Other business.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED

- .1 Not Used.

END OF SECTION

1 GENERAL

1.01 RELATED REQUIREMENTS

- .1 Section 07 92 00 – Joint Sealants.
- .2 Section 09 91 00 – Painting.

1.02 APPROVALS

- .1 Approval of shop drawings: refer to Section 01 11 55 – General Instructions.

1.03 ADMINISTRATIVE

- .1 This Section specifies the general requirements and procedures for the Contractor's submissions of shop drawings, product data, samples and other requested submittals to Departmental Representative for review. Additional specific requirements for submissions are specified in individual technical sections.
- .2 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .3 Where items or information is not produced in SI Metric units converted values are acceptable.
- .4 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .5 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .6 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review unless Departmental Representative gives written acceptance of specific deviations.
- .7 Make any changes in submissions which Departmental Representative may require consistent with Contract documents and resubmit as directed by Departmental Representative.
- .8 Notify Departmental Representative in writing, when resubmitting, of any revisions other than those requested by Departmental Representative.
- .9 Do not proceed with work or order construction materials or products until relevant submissions are reviewed and approved by the Departmental Representative.
- .10 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. **Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.**
- .11 Verify field measurements and affected adjacent Work are coordinated.
- .12 Keep one reviewed copy of each submission on site.

1.04 SUBMISSION REQUIREMENTS

- .1 Coordinate each submission with the requirements of the work and the Contract documents. Individual submissions will not be reviewed until all related information is available.
- .2 Accompany submissions with transmittal letter, in duplicate, containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
- .3 Submissions shall include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative, certifying approval of submissions, verification of field measurements and compliance with Contract documents. **Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.**
 - .5 Details of appropriate portions of work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions (including identified field dimensions) and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Relationship to adjacent work.
- .4 After Departmental Representative's review, distribute copies. Keep one reviewed copy of each submission on site.

1.05 SHOP DRAWINGS

- .1 Shop drawings: original drawings or modified standard drawings, diagrams, illustrations, schedules, performance charts, brochures or other data provided by Contractor to illustrate details of portions of work which are specific to project requirements.
 - .1 Indicate materials, methods of construction and attachment or anchorage erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Provide cross references to drawings and specifications.
- .2 Submit electronic drawings for each requirement requested in technical specification sections and as requested by Departmental Representative. Cross-reference shop drawing information to applicable portions of the Contract documents.

- .3 Submit electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
- .4 Submit electronic copies of test reports for requirements requested in specification Sections and as requested by Departmental Representative.
 - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
 - .2 Testing must have been within 3 years of date of contract award for project.
- .5 Submit electronic copies of certificates for requirements requested in specification Sections and as requested by Departmental Representative.
 - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
 - .2 Certificates must be dated after award of project contract complete with project name, project number and address.
- .6 Submit electronic copies of manufacturer's instructions for requirements requested in specification Sections and as requested by Departmental Representative.
 - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .7 Submit electronic copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Departmental Representative.
- .8 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .9 Submit electronic copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative.
- .10 Delete information not applicable to project.
- .11 Supplement standard information to provide details applicable to project.

1.06 SHOP DRAWING REVIEW

- .1 Review of shop drawings by the Departmental Representative is for the sole purpose of ascertaining conformance with the general concept.
- .2 Allow seven (7) business days for Departmental Representative's review of each submission.
- .3 This review shall not mean that the Departmental Representative approves the detail design inherent in the shop drawings, responsibility for which shall remain with Contractor submitting same.
- .4 This review shall not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the construction and Contract documents.

- .5 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with ordering materials or Work.
- .6 Make changes in shop drawings by Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested. All revisions to be clearly clouded.
- .7 Without restricting the generality of the foregoing, the Contractor is responsible for:
 - .1 Dimensions to be confirmed and correlated at the job site.
 - .2 Information that pertains solely to fabrication processes or to techniques of construction and installation.
 - .3 Coordination of the work and all sub-trades.
- .8 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, electronic copy will be returned and ordering, fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings with bubbled changes, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .9 Shop drawings to incorporate applicable key plan, plan, elevations and details for all work submitted. No materials to be ordered and no work to be fabricated shall be undertaken until shop drawings and other related submittals are reviewed.

1.07 PRODUCT DATA

- .1 Product data: manufacturers' catalogue sheets, MSDS sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products or any other specified information.
- .2 Delete information not applicable to project.
- .3 Supplement standard information to provide details applicable to project.
- .4 Cross-reference product data information to applicable portions of Contract documents.
- .5 Submit electronic copies of product data.

1.08 SAMPLES

- .1 Submit for review samples in duplicate as requested in individual technical specification Sections. Label samples with origin and intended use. One sample will be returned with Shop Drawing Review.
- .2 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .3 Where colour, pattern or texture is criterion, submit full range of samples.
- .4 Adjustments made on samples by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to ordering materials or proceeding with Work.
- .5 Make changes in samples which Departmental Representative may require, consistent with Contract Documents.

1.09 MOCK-UPS

- .1 Erect mock-ups where directed by Departmental Representative and in accordance with Section 01 45 00 - Quality Control. Upon acceptance by Departmental Representative, mock-up may remain.

1.10 PROGRESS SCHEDULE

- .1 Submit work schedule and cost breakdown in accordance with Section 01 11 55 – General Instructions.

1.11 INSPECTION REPORTS

- .1 Submit in electronic test results and inspection reports where indicated.

1.12 PHOTOGRAPHIC DOCUMENTATION

- .1 Submit electronic copy of colour digital photography in jpg format, standard resolution, monthly with progress statement and as directed by Departmental Representative.
- .2 Project identification: name and number of project, building name and elevation with date of exposure indicated.
- .3 Number of viewpoints: 4 locations.
 - .1 Viewpoints and their location as determined by Departmental Representative.
- .4 Frequency of photographic documentation: as directed by Departmental Representative.
 - .1 Before concealment of Work and as directed by Departmental Representative.

1.13 CERTIFICATES AND TRANSCRIPTS

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.
- .2 Submit transcription of insurance immediately after award of Contract.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED

- .1 Not Used.

END OF SECTION

1 GENERAL

1.01 REFERENCES

- .1 Government of Canada
 - .1 Canada Labour Code, Part 2 Canada Occupational Safety and Health Regulations.
 - .2 Canada Occupational Health and Safety Regulations.
- .2 National Building Code of Canada (NBC) 2010
 - .1 Part 8 – Safety Measures at Construction and Demolition Sites.
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .4 Province of British Columbia
 - .1 Workers Compensation Act Part 3 – Occupational Health and Safety, RSBC 1996 – Current Edition.
- .5 Canadian Standards Association (CSA) as amended:
 - .1 CSA Z797-2009 Code of Practice for Access Scaffold.
 - .2 CSA S269.1-1975 (R2003) Falsework for Construction Purposes.
 - .3 CSA S350-M1980 (R2003) Code of Practice for Safety in Demolition of Structures.
- .6 American National Standards Institute (ANSI):
 - .1 ANSI A10.3 Operations – Safety Requirements for Powder-Actuated Fastening Systems.

1.02 RELATED SECTIONS

- .1 Section 02 41 99 – Demolition for Minor Works.
- .2 Section 02 83 10 – Lead Base Paint Abatement – Minimum Precautions.
- .3 Section 07 92 00 – Joint Sealants.
- .4 Section 09 91 00 – Painting.

1.03 WORKER'S COMPENSATION BOARD COVERAGE

- .1 Comply fully with the Workers' Compensation Act, regulations and orders made pursuant thereto, and any amendments up to the completion of the work.
- .2 Maintain Workers' Compensation Board coverage during the term of the Contract, until and including the date that the Certificate of Final Completion is issued.

1.04 COMPLIANCE WITH REGULATIONS

- .1 PWGSC may terminate the Contract without liability to PWGSC where the Contractor, in the opinion of PWGSC, refuses to comply with a requirement of the Workers' Compensation Act or the Occupational Health and Safety Regulations.

- .2 It is the Contractor's responsibility to ensure that all workers are qualified, competent and certified to perform the work as required by the Workers' Compensation Act or the Occupational Health and Safety Regulations.

1.05 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit to Departmental Representative, submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Work affected by submittal shall not proceed until review is complete.
- .3 Submit the following:
 - .1 Health and Safety Plan.
 - .2 Copies of reports or directions issued by Federal and Provincial health and safety inspectors.
 - .3 Copies of incident and accident reports.
 - .4 Complete set of Material Safety Data Sheets (MSDS), and all other documentation required by Workplace Hazardous Materials Information System (WHMIS) requirements.
 - .5 Emergency Procedures.
- .4 The Departmental Representative will review Contractor's site-specific Health and Safety Plan and emergency procedures and provide comments to Contractor within seven (7) business days after receipt of plan. Revise plan as appropriate and resubmit to Departmental Representative.
- .5 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Departmental Representative.
- .6 Submission and resubmission of the Health and Safety Plan to the Departmental Representative is for information and reference purposes only. It shall not:
 - .1 Be construed to imply approval by the Departmental Representative.
 - .2 Be interpreted as a warranty of being complete, accurate and legislatively compliant.
 - .3 Relieve the Contractor of his legal obligations for the provision of health and safety on the project.

1.06 RESPONSIBILITY

- .1 Assume responsibility as the Prime Contractor for work under this contract.
- .2 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .3 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.07 HEALTH AND SAFETY CO-ORDINATOR

- .1 The Health and Safety Coordinator/Registered Occupational Hygienist/Certified Industrial Specified Hygienist must:

- .1 Be responsible for completing all health and safety training sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
- .2 Be responsible for implementing, enforcing daily and monitoring site-specific Health and Safety Plan.
- .3 Be on site during execution of Work.

1.08 GENERAL CONDITIONS

- .1 Provide safety barricades and lights around work site as required to provide a safe working environment for workers and protection for pedestrian and vehicular traffic.
- .2 Ensure that non-authorized persons are not allowed to circulate in designated construction areas of the work site.
 - .1 Provide appropriate means by use of barricades, fences, warning signs, traffic control personnel, and temporary lighting as required.
 - .2 Secure site at night time as deemed necessary by Departmental Representative to protect site against entry.

1.09 PROJECT/SITE CONDITIONS

- .1 Work at site will involve:
 - .1 Parks Canada.
 - .2 Departmental Representative.
 - .3 Work on a National Historic Building.
 - .4 Working over water with tides (with scaffolding over open water adjacent to fire access lane).
 - .5 Working at heights reaching approximately 10 metres.
 - .6 Lead containing paint abatement as indicated in Appendix 1, 2 and 3.

1.10 REGULATORY REQUIREMENTS

- .1 Comply with specified codes, acts, bylaws, standards and regulations to ensure safe operations at site.
- .2 In event of conflict between any provision of the above authorities, the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, the Departmental Representative will advise on the course of action to be followed.

1.11 WORK PERMITS

- .1 Obtain and pay for specialty permits related to project before start of work.

1.12 FILING OF NOTICE

- .1 The Contractor is to complete and submit a Notice of Project as required by provincial authorities.
- .2 Provide copies of all notices to the Departmental Representative.

1.13 HEALTH AND SAFETY PLAN

- .1 Conduct a site-specific hazard assessment based on review of Contract documents, required work, and project site. Identify any known and potential health risks and safety hazards.

- .2 Prepare and comply with a site-specific project Health and Safety Plan based on hazard assessment, including but not limited to, the following:
 - .1 Primary requirements:
 - .1 Contractor's safety policy.
 - .2 Identification of applicable compliance obligations.
 - .3 Definition of responsibilities for project safety/organization chart for project.
 - .4 General safety rules for project.
 - .5 Job-specific safe work, procedures.
 - .6 Inspection policy and procedures.
 - .7 Incident reporting and investigation policy and procedures.
 - .8 Occupational Health and Safety Committee/Representative procedures.
 - .9 Occupational Health and Safety meetings.
 - .10 Occupational Health and Safety communications and record keeping procedures.
 - .2 Summary of health risks and safety hazards resulting from analysis of hazard assessment, with respect to site tasks and operations which must be performed as part of the work.
 - .3 List hazardous materials to be brought on site as required by work.
 - .4 Indicate engineering and administrative control measures to be implemented at the site for managing identified risks and hazards.
 - .5 Identify personal protective equipment (PPE) to be used by workers.
 - .6 Identify personnel and alternates responsible for site safety and health.
 - .7 Identify personnel training requirements and training plan, including site orientation for new works.
- .3 Develop the plan in collaboration with all subcontractors. Ensure that work/activities of subcontractors are included in the hazard assessment and are reflected in the plan.
- .4 Revise and update Health and Safety Plan as required, and re-submit to the Departmental Representative.
- .5 Departmental Representative's review: the review of Health and Safety Plan by Public Works and Government Services Canada (PWGSC) shall not relieve the Contractor of responsibility for errors or omissions in final Health and Safety Plan or of responsibility for meeting all requirements of construction and Contract documents.

1.14 EMERGENCY PROCEDURES

- .1 List standard operating procedures and measures to be taken in emergency situations. Include an evacuation plan and emergency contacts (i.e. names/telephone numbers) of:
 - .1 Designated personnel from own company.
 - .2 Regulatory agencies applicable to work and as per legislated regulations.
 - .3 Local emergency resources.
 - .4 Departmental Representative site staff.
- .2 Include the following provisions in the emergency procedures:
 - .1 Notify workers and the first-aid attendant, of the nature and location of the emergency.
 - .2 Evacuate all workers safely.
 - .3 Check and confirm the safe evacuation of all workers.
 - .4 Notify the fire department or other emergency responders.
 - .5 Notify adjacent workplaces which may be affected if the risk extends beyond the workplace.

- .6 Notify Departmental Representative site staff.
- .3 Provide written rescue/evacuation procedures as required for, but not limited to:
 - .1 Work at high angles.
 - .2 Work with hazardous substances.
- .4 Revise and update emergency procedures as required, and re-submit to the Departmental Representative.

1.15 HAZARDOUS PRODUCTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous regarding labelling and provision of Material Safety Data Sheets (MSDS) acceptable to the Departmental Representative and in accordance with the Canada Labour Code.
- .2 Where use of hazardous and toxic products cannot be avoided:
 - .1 Advise Departmental Representative beforehand of the product(s) intended for use. Submit applicable MSDS and WHMIS documents as per Section 01 33 00 - Submittal Procedures.
 - .2 In conjunction with Departmental Representative, schedule to carry out work during "off hours" when tenants have left the building.
 - .3 Provide adequate means of ventilation in accordance with Section 01 51 00 - Temporary Utilities.

1.16 ELECTRICAL SAFETY REQUIREMENTS

- .1 Comply with authorities.
 - .1 Maintain electrical safety procedures and take necessary precautions to ensure safety of all personnel working under this Contract, as well as safety of other personnel on site.

1.17 OVERLOADING

- .1 Ensure no part of work is subjected to a load which will endanger its safety or will cause permanent deformation or damage to existing structure and finishes.

1.18 FALSEWORK

- .1 Design and construct falsework in accordance with CSA S269.1.

1.19 SCAFFOLDING

- .1 Design, construct and maintain scaffolding in a rigid, secure and safe manner, in accordance with CSA Z797 and B.C. Occupational Health and Safety Regulations.

1.20 FIRE SAFETY REQUIREMENTS

- .1 Store oily/paint-soaked rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
- .2 Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code.

1.21 FIRE PROTECTION AND ALARM SYSTEM

- .1 Fire protection and alarm systems shall not be:
 - .1 Obstructed.
 - .2 Shut off.
 - .3 Left inactive at the end of a working day or shift.
- .2 Do not use fire hydrants, standpipes and hose systems for purposes other than firefighting.
- .3 Be responsible / liable for costs incurred from the fire department, Departmental Representative resulting from false alarms.

1.22 UNFORESEEN HAZARDS

- .1 Should any unforeseen or peculiar safety-related factor, hazard or condition become evident during performance of the work, immediately stop work and advise the Departmental Representative verbally and in writing.

1.23 POSTED DOCUMENTS

- .1 Post legible versions of the following documents on site:
 - .1 Health and Safety Plan.
 - .2 Sequence of work.
 - .3 Emergency procedures.
 - .4 Site drawing showing project layout, locations of the first-aid station, evacuation route and marshalling station, and the emergency transportation provisions.
 - .5 Notice of Project.
 - .6 Site plans.
 - .7 Notice as to where a copy of the Workers' Compensation Act and Regulations are available on the work site for review by employees and workers.
 - .8 Workplace Hazardous Materials Information System (WHMIS) documents.
 - .9 Material Safety Data Sheets (MSDS).
 - .10 List of names of Joint Health and Safety Committee members, or Health and Safety Representative, as applicable.
- .2 Post all Material Safety Data Sheets (MSDS) on site, in a common area, visible to all workers and in locations accessible to tenants when work of this Contract includes construction activities adjacent to occupied areas.
- .3 Postings should be protected from the weather, and visible from the street or the exterior of the principal construction site shelter provided for workers and equipment, or as approved by the Departmental Representative.

1.24 MEETINGS

- .1 Attend health and safety pre-construction meeting and all subsequent meetings called by the Departmental Representative.

1.25 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by the Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance with health and safety issues identified.

- .3 The Departmental Representative may issue a "stop work order" if non-compliance of health and safety regulations is not corrected immediately or within posted time. The General Contractor/subcontractors will be responsible for any costs arising from such a "stop work order".

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

3.01 NOT USED

- .1 Not used.

END OF SECTION

1 GENERAL

1.01 RELATED SECTIONS

- .1 Section 02 41 99 – Demolition for Minor Works.
- .2 Section 02 83 10 - Lead Base Paint Abatement – Minimum Precautions.
- .3 Section 09 91 00 – Painting.

1.02 REFERENCES

- .1 Definitions:
 - .1 Environmental Pollution and Damage: presence of chemical, Physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade environment aesthetically, culturally and/or historically.
 - .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.
- .2 Reference Standards:
 - .1 U.S. Environmental Protection Agency (EPA)/Office of Water
 - .1 EPA 832/R-92-005-92, Storm Water Management for Construction Activities, Chapter 3.

1.03 ADMINISTRATIVE REQUIREMENTS

- .1 Convene start-up meeting prior to beginning work with contractor's representative and Departmental Representative to:
 - 1. Verify Environmental Protection Plan and conformance requirements to municipal, provincial and federal regulations.

1.04 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prior to commencing construction activities or delivery of materials to site, provide Environmental Protection Plan for review and approval by Departmental Representative.
- .3 Ensure Environmental Protection Plan includes comprehensive overview of known or potential environmental issues to be addressed during construction.
- .4 Address topics at level of detail commensurate with environmental issue and required construction tasks.
- .5 Include in Environmental Protection Plan:
 - .1 Names of persons responsible for ensuring adherence to Environmental Protection Plan.
 - .2 Names and qualifications of persons responsible for manifesting hazardous waste to be removed from site.
 - .3 Names and qualifications of persons responsible for training site personnel.
 - .4 Descriptions of environmental protection personnel training program.

- .5 Drawings showing locations of proposed temporary scaffolding over water crossings, material storage areas, structures, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on site.
- .6 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use. Ensure plan includes measures for marking limits of use areas and methods for protection of features to be preserved within authorized work areas.
- .7 Pollution Control Plan:
 - .1 Including procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.
 - .2 Identifying potentially hazardous substances to be used on job site; intended actions to prevent introduction of such materials into air, water, or ground; and detailing provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.
 - .3 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
 - .4 Air pollution control plan detailing provisions to assure that dust, paint overspray, debris, materials, and trash, are contained on project site.
 - .5 Name of individual who will be responsible for implementing and supervising the spill containment and cleanup.
 - .6 Training requirements for Contractor's personnel and methods of accomplishing the training.
- .8 Historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands.

1.05 FIRES

- .1 Fires and burning of rubbish on site not permitted.

1.06 DRAINAGE

- .1 Do not allow water containing suspended materials to into waterways, sewer or drainage systems.
- .2 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

1.07 WORK ADJACENT TO WATERWAYS

- .1 Construction equipment to be operated on land only.
- .2 Do not use waterway beds.
- .3 Waterways to be free of excavated fill, waste material and debris.
- .4 Design and construct temporary crossings to minimize erosion to waterways.
- .5 Do not skid construction materials across waterways.

1.08 POLLUTION CONTROL

- .1 Contractor and sub trade personnel must develop and maintain spill response and reporting procedures including containment methods.

- .2 In the event of a spill, Contractor shall immediately contain and assess the spill, provide appropriate notifications and take the necessary steps to prevent further discharge. Notifications shall include contacting the Provincial Emergency Program at 1-800-663-3456 and the Departmental Representative.
- .3 The Contractor must have spill containment kits ready for immediate deployment, containing sufficient quantities of absorbent materials on site in close proximity to work area including working machinery and equipment such as fuel portable generator, air compressors, hoist and tools.
- .4 The Contractor is to have personnel on site that are trained and ready to use spill containment kits. Ensure proper disposal procedures in accordance with all applicable provincial and municipal regulations. Fires and burning of rubbish on site is not permitted.
- .5 Contractor is responsible for immediate clean up of the spill and restoration of the area to the satisfaction of the Departmental Representative and other regulatory agencies, where involved.
- .6 Ensure all equipment used on site is clean and free from contaminants. Materials and equipment shall be regularly inspected, maintained, operated and stored in a manner that prevents deleterious substances (eg. Petroleum products, silt, etc.) from entering watercourse.
- .7 Ensure proper procedures in accordance with all applicable provincial regulations.
- .8 Ensure removed paint, debris and paint overspray does not fall into the Fraser River under the Cannery Pier in accordance with applicable legislation.
- .9 Control emissions from equipment to local authorities' emission requirements.
- .10 Prevent extraneous materials from contaminating air and waterways beyond application area. Provide temporary enclosures.

1.09 NOTIFICATION

- .1 Departmental Representative will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations.
- .2 Contractor: after receipt of such notice, inform Departmental Representative of proposed corrective action and take such action for approval by Departmental Representative.
 - .1 Do not take action until after receipt of written approval by Departmental Representative.
- .3 Departmental Representative will issue stop order of work until satisfactory corrective action has been taken.
- .4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 CLEANING

- .1 Clean in accordance with Section 01 74 11 - Cleaning.
- .2 Waste Management: separate waste materials and recycle or deposit at authority approved facilities.
- .3 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.

END OF SECTION

1 GENERAL

1.01 REFERENCES AND CODES

- .1 Perform Work in accordance with National Building Code of Canada (NBC), 2010 including amendments up to tender closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.
- .2 Perform Work in accordance with WorkSafe BC current requirements and standards.
- .3 Meet or exceed requirements of:
 - .1 Contract documents.
 - .2 Specified standards, codes and referenced documents.

1.02 HAZARDOUS MATERIAL DISCOVERY

- .1 Lead-containing Paint present. Take appropriate precautions in accordance with Section 02 83 10 – Lead Base Paint Abatement – Minimum Precautions.
- .2 PCB: Polychlorinated Biphenyl: may be present. Take appropriate precautions.
- .3 Mould: stop work immediately when material resembling mould is encountered during demolition work. Notify Departmental Representative.

1.03 BUILDING SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions and municipal by-laws.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED

- .1 Not Used.

END OF SECTION

1 GENERAL

1.01 RELATED REQUIREMENTS

- .1 Section 06 10 00 – Rough Carpentry.
- .2 Section 07 92 00 – Joint Sealants.
- .3 Section 09 91 10 – Painting.

1.02 INSPECTION

- .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Departmental Representative shall pay cost of examination and replacement.

1.03 INDEPENDENT INSPECTION AGENCIES

- .1 Independent Inspection/Testing Agencies will be engaged by Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Departmental Representative.
- .2 Provide equipment required for executing inspection and testing by appointed agencies.
- .3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Departmental Representative at no cost to Departmental Representative. Pay costs for retesting and re-inspection.

1.04 ACCESS TO WORK

- .1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.

1.05 PROCEDURES

- .1 Notify appropriate agency and Departmental Representative in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.06 REJECTED WORK

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .3 If in opinion of Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Departmental Representative.

1.07 REPORTS

- .1 Submit two (2) copies of inspection and test reports to Departmental Representative.
- .2 Provide copies to subcontractor of work being inspected or tested, manufacturer or fabricator of material being inspected or tested.

1.08 TESTS AND MIX DESIGNS

- .1 Furnish test results as requested.
- .2 Cost of tests beyond those called for in Contract Documents or beyond those required by law of Place of Work will be appraised by Departmental Representative and may be authorized as recoverable.

1.09 MOCK-UPS

- .1 Prepare mock-ups for Work specifically requested in technical specifications. Include for Work of Sections required to provide mock-ups.
- .2 Construct in locations acceptable and as approved by Departmental Representative.
- .3 Prepare mock-ups for Departmental Representative review with reasonable promptness and in orderly sequence, to not cause delays in Work.
- .4 Failure to prepare mock-ups in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.

.5 Mock-ups, when approved may remain as part of Work.

1.10 MILL TESTS

.1 Submit mill test certificates as required of specification Sections.

2 PRODUCTS

2.01 NOT USED

.1 Not Used.

3 EXECUTION

3.01 NOT USED

.1 Not.Used.

END OF SECTION

1 GENERAL

1.01 REFERENCES

- .1 Canadian Standards Association (CSA) as amended:
 - .1 CAN/CSA Z321-96(R2001), Signs and Symbols for the Occupational Environment.

1.02 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.03 ACCESS AND DELIVERY

- .1 Only designated entrance may be used for access to building. Confirm with Departmental Representative.
 - .1 Maintain for duration of Contract.
 - .2 Make good damage resulting from Contractor's use.
- .2 Use of facilities will be granted to the Contractor by reservation through the Departmental Representative.
 - .1 Limited parking is permitted as directed by Departmental Representative. Security has been instructed to have unauthorized vehicles towed at the Contractor's expense. Refer to Section 01 14 00 – Work Restrictions.

1.04 STORAGE FACILITIES

- .1 Storage space will be provided as directed by Departmental Representative.

1.05 WATER

- .1 Water supply is available at existing building and may be used for construction purposes at no cost.
 - .1 Hose bib locations for each building as directed by Departmental Representative.

1.06 POWER

- .1 Electrical power and lighting at existing buildings may be used for construction purposes at no extra cost, provided that warranties are not affected thereby and electrical components used for temporary power are replaced when damaged. Do not use emergency power or UPS panels for this purpose.
 - .1 Power located as directed by Departmental Representative.

1.07 HEATING AND VENTILATION

- .1 Do not begin work until arrangements have been made with the Departmental Representative for protection of heating, ventilating and air-conditioning (temporary removal of existing exterior vents or louvres).
 - .1 If there is any dirt or dust in the heating and ventilating system, it will be the Contractor's responsibility to return to its original state in accordance with the Departmental Representative's specifications.
- .2 Prevent dust and odour migration to occupied areas.
 - .1 Do not deactivate HVAC system.

1.08 TEMPORARY COMMUNICATION FACILITIES

- .1 Provide and pay for temporary telephone, fax, data hook up, lines and equipment necessary for own use and use of Departmental Representative.

1.09 SANITARY FACILITIES

- .1 Washroom facilities are available at the free-standing public washroom building located by the main entry.

1.10 SCAFFOLDING

- .1 Construct and maintain scaffolding in rigid, secure and safe manner in accordance with Section 01 52 00 – Construction Facilities and WorkSafe BC requirements.
- .2 Scaffolding to be erected independent of walls where possible. Remove promptly when no longer required. Remove fastenings from structure, if used and patch, sand and paint to match.

1.11 REMOVAL OF TEMPORARY FACILITIES

- .1 Remove temporary facilities from site when directed by the Departmental Representative.

1.12 SIGNS AND NOTICES

- .1 Signs and notices for safety and instruction are permitted and shall be in both official languages or graphic symbols conforming to CAN/CSA-Z321.
- .2 Maintain approved signs and notices in good condition for duration of project, and dispose of off-site on completion of project or when directed by Departmental Representative.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED.

- .1 Not Used.

END OF SECTION

1 GENERAL

1.01 REFERENCES

- .1 Canadian Standards Association (CSA International)
 - .1 CAN/CSA-Z271-10, Safety Code for Suspended Platforms.
 - .2 CAN/CSA-Z321-96(R2001), Signs and Symbols for the Occupational Environment.

1.02 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.03 INSTALLATION AND REMOVAL

- .1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.
- .2 Indicate use of supplemental or other staging area.
- .3 Provide construction facilities in order to execute work expeditiously.
- .4 Remove from site all such work after use.

1.04 SCAFFOLDING

- .1 Scaffolding in accordance with CAN/CSA- Z271.
- .2 Provide and maintain scaffolding, ladders, platforms and temporary stairs.

1.05 BARRIERS AND ENCLOSURES

- .1 In accordance with Section 01 56 00 – Temporary Barriers and Enclosures and WorkSafe BC requirements.

1.06 ELEVATORS

- .1 Existing elevators not to be used by construction personnel and transporting of materials.

1.07 SITE STORAGE/LOADING

- .1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.
- .2 Do not load or permit to load any part of Work with weight or force that will endanger Work.

1.08 CONSTRUCTION PARKING

- .1 Limited parking will be permitted on site as directed by Departmental Representative. Provide for additional parking off site. Refer to 01 14 00 – Work Restrictions.
- .2 Provide and maintain adequate access to project site.

1.09 SECURITY

- .1 Provide and pay for responsible security personnel to guard contractor storage and laydown area after working hours and during holidays.

1.10 OFFICES

- .1 Provide office heated to 22 degrees C, lighted 750 lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table.
- .2 Provide marked and fully stocked first-aid case in a readily available location.

1.11 EQUIPMENT, TOOL AND MATERIALS STORAGE

- .1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

1.12 SANITARY FACILITIES

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.13 PROTECTION AND MAINTENANCE OF TRAFFIC

- .1 Refer to Section 01 14 00 – Work Restrictions.
- .2 Provide access as necessary to maintain traffic.
- .3 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Departmental Representative.
- .4 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs
- .5 Protect travelling public from damage to person and property.
- .6 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.
- .7 Verify adequacy of existing roads and allowable load limit on these roads. Contractor responsible for repair of damage to roads caused by construction operations.
- .8 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
- .9 Dust control: adequate to ensure safe operation at all times.
- .10 Provide snow removal during period of Work when required.

1.14 CLEAN-UP

- .1 Remove construction debris, waste materials, packaging material from work site daily.
- .2 Clean dirt or mud tracked onto paved or surfaced roadways.
- .3 Store materials resulting from demolition activities that are salvageable, where directed by Departmental Representative.
- .4 Stack stored new or salvaged material not in construction facilities.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED.

- .1 Not Used.

END OF SECTION

1 GENERAL

1.01 RELATED REQUIREMENTS

- .1 Section 02 41 99 – Demolition for Minor Works.
- .2 Section 02 83 10 – Lead Base Paint Abatement – Minimum Precautions.

1.02 REFERENCES

- .1 Canadian Standards Association (CSA International)
 - .1 CSA-O121-08(R2013), Douglas Fir Plywood.

1.03 INSTALLATION AND REMOVAL

- .1 Provide temporary controls in order to execute Work expeditiously.
- .2 Remove from site all such work after use.

1.04 HOARDING

- .1 Erect temporary building envelope enclosures to protect wall assemblies from elements during Work.
- .2 Erect and maintain pedestrian walkways and exits including roof and side covers, complete with signs and electrical lighting as required by law.
- .3 Protect site from damage by equipment and construction procedures.

1.05 GUARD RAILS AND BARRICADES

- .1 Provide as required by governing authorities.

1.06 WEATHER ENCLOSURES

- .1 Provide weather tight closures to unfinished remediated wall assemblies and other openings in exterior walls including window sashes, vents, louvres and lighting.
- .2 Design enclosures to withstand wind pressure and snow loading.

1.07 DUST TIGHT SCREENS

- .1 Provide dust tight screens or partitions to localize dust generating activities, and for protection of workers, finished areas of Work and public.
- .2 Maintain and relocate protection until such work is complete.

1.08 ACCESS TO SITE

- .1 Provide and maintain access roads, sidewalk crossings as may be required for access to Work.

1.09 PUBLIC TRAFFIC FLOW

- .1 Provide and maintain barricades as required to perform Work and protect public.

1.10 FIRE ROUTES

- .1 Maintain access to property including overhead clearances for use by emergency response vehicles, including the area between west elevation of Cannery Building and adjacent building.

1.11 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

- .1 Protect surrounding property from damage during performance of Work.
- .2 Be responsible for damage incurred.

1.12 PROTECTION OF BUILDING FINISHES

- .1 Provide protection for finished and partially finished building finishes and equipment, including existing roof coverings during performance of Work.
- .2 Provide necessary screens, covers, and hoardings.
- .3 Confirm with Departmental Representative locations and installation schedule three (3) days prior to installation.
- .4 Be responsible for damage incurred due to lack of or improper protection.

1.13 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED

- .1 Not Used.

END OF SECTION

1.10 REMEDIAL WORK

- .1 Refer to Section 01 73 00 – Execution.
- .2 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.
- .3 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.11 FASTENINGS

- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
- .2 Provide metal fastenings and accessories in the same texture, colour and finish as base metal in which they occur.
 - .1 Prevent electrolytic action between dissimilar metals.
 - .2 Use non-corrosive fasteners, anchors and spacers for securing exterior work unless stainless steel or other material is specifically requested in technical specification sections.
 - .3 Use heavy hexagon heads, semi-finished unless otherwise specified.
 - .4 Bolts may not project more than 1 diameter beyond bolts.
- .3 Types of washers as follows:
 - .1 Soft neoprene washers: use for exposed fastening of exterior metal panels.
- .4 Deliver, store and maintain packaged material and equipment with manufacturer's seals and labels intact.
- .5 Prevent damage, adulteration and soiling of products during delivery, handling and storage. Immediately remove rejected products from site.
- .6 Store products in accordance with suppliers' instructions.
- .7 Touch up damaged factory finished surfaces according to manufacturer's recommendations and to Departmental Representative's satisfaction.
 - .1 Use primer or enamel to match original.
 - .2 Do not paint over nameplates.
- .8 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.
- .9 Keep exposed fastenings to a minimum, space evenly and install neatly.
- .10 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

1.12 PROTECTION OF EXISTING BUILDING AND WORK IN PROGRESS

- .1 Protect existing building components and finishes (including glazing, roof finishes, ramps, guardrails, stairways and areas not included in scope of work) from damage. Repair damaged components and finishes according to Departmental Representative's specifications, to better condition.

- .2 Prevent overloading of parts of building. Do not cut, drill or sleeve load bearing structural member, unless specifically indicated without written approval of Departmental Representative.

1.13 CONTRACTOR'S OPTIONS FOR SELECTION OF PRODUCTS FOR TENDERING

- .1 Products are specified by 'Prescriptive' specifications: select any product meeting or exceeding specifications.
- .2 Products specified under "Acceptable Products": select any one of the indicated manufacturers or any other manufacturer meeting or exceeding the Prescriptive specifications and indicated Products.
- .3 Products specified by performance and referenced standard: select any product meeting or exceeding the referenced standard.
- .4 Products specified to meet particular design requirements or to match existing materials: use only material specified Acceptable Product. Alternative products may be considered provided full technical data is received in writing by Departmental Representative in accordance with Section 01 11 55 – General Instructions.
- .5 When products are specified by a referenced standard or by or performance specifications, upon request of Departmental Representative obtain from manufacturer an independent laboratory report showing that the product meets or exceeds the specified requirements at no cost to Departmental Representative.
- .6 Provide cost saving breakout in bid form for alternate material or system if incorporated.

1.14 SUBSTITUTION AFTER CONTRACT AWARD

- .1 No substitutions are permitted without prior written approval of the Departmental Representative.
- .2 Proposals for substitution may only be submitted after Contract award. Such request must include statements of respective costs of items originally specified and the proposed substitution, including cut sheets and technical data.
- .3 Proposals will be considered by the Departmental Representative if:
 - .1 products selected by tenderer from those specified are not available;
 - .2 delivery date of products selected from those specified would unduly delay completion of Contract, or
 - .3 alternative product to that specified, which is brought to the attention of and considered by Departmental Representative as equivalent to the product specified, and will result in a credit to the Contract amount.
- .4 Should the proposed substitution be accepted either in part or in whole, assume full responsibility and costs when substitution affects other work on the project. Pay for design or drawing changes required as result of substitution.
- .5 Amounts of all credits arising from approval of the substitutions will be determined by the Departmental Representative and the Contract price will be reduced accordingly.

2 PRODUCTS

2.01 NOT USED

.1 Not Used.

3 EXECUTION

3.01 NOT USED

.1 Not Used.

END OF SECTION

1 GENERAL

1.01 RELATED REQUIREMENTS

- .1 Section 02 41 99 – Demolition for Minor Works.
- .2 Section 02 83 10 – Lead Base Paint Abatement – Minimum Precautions.
- .3 Section 06 10 00 – Rough Carpentry.
- .4 Section 07 92 00 – Joint Sealants.
- .5 Section 09 91 00 – Painting.

1.02 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit written request in advance of cutting or alteration which affects:
 - .1 Structural integrity of elements of project.
 - .2 Integrity of weather-exposed or moisture-resistant elements.
 - .3 Efficiency, maintenance, or safety of operational elements.
 - .4 Visual qualities of sight-exposed elements.
 - .5 Work of Departmental Representative or separate contractor.
- .3 Include in request:
 - .1 Identification of project.
 - .2 Location and description of affected Work.
 - .3 Statement on necessity for cutting or alteration.
 - .4 Description of proposed Work, and products to be used.
 - .5 Alternatives to cutting and patching.
 - .6 Effect on Work of Departmental Representative or separate contractor.
 - .7 Written permission of affected separate contractor.
 - .8 Date and time work will be executed.

1.03 MATERIALS

- .1 Required for original installation.
- .2 Change in Materials: Submit request for substitution in accordance with Section 01 33 00 - Submittal Procedures.

1.04 PREPARATION

- .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
- .2 After uncovering, inspect conditions affecting performance of Work and review existing conditions with Departmental Representative.
- .3 Beginning of cutting or patching means acceptance of existing conditions.
- .4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.

- .5 Provide protection from elements for areas which are to be exposed by uncovering work.

1.05 EXECUTION

- .1 Execute cutting, fitting, and patching to complete Work.
- .2 Fit several parts together, to integrate with other Work.
- .3 Uncover Work to install ill-timed Work.
- .4 Remove and replace defective and non-conforming Work.
- .5 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- .6 Restore work with new products in accordance with requirements of Contract Documents.
- .7 Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

1.06 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED

- .1 Not Used.

END OF SECTION

1 GENERAL

1.01 RELATED REQUIREMENTS

- .1 Refer to technical sections for waste management and disposal.

1.02 WASTE MANAGEMENT GOALS

- .1 Prior to start of Work, conduct meeting with Departmental Representative to review and discuss PWGSC's Waste Management Plan and Goals.

1.03 DEFINITIONS

- .1 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .2 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- .3 Reuse: repeated use of product in same form but not necessarily for same purpose.
Reuse includes:
 - .1 Salvaging reusable materials from re-modelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
 - .2 Returning reusable items including pallets or unused products to vendors.
- .4 Salvage: removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.

1.04 STORAGE, HANDLING AND PROTECTION

- .1 Handle waste materials not re-used, salvaged or recycled in accordance with appropriate regulations and codes.
- .2 Materials in separated condition: collect, handle, store on site where directed and transport off-site to an approved and authorized recycling facility.
- .3 Materials must immediately be separated into required categories for re-use or recycling.
- .4 Unless specified otherwise, materials for removal become Contractor's property.
- .5 Separate non-salvageable materials for recycling where applicable recycling facility exists. Transport and deliver non-salvageable items to licensed recycling and disposal facilities.
- .6 Protect structural components not removed for demolition from movement or damage.
- .7 Support affected structures. If safety of building is endangered, cease operations and immediately notify Departmental Representative.
- .8 Separate and store materials produced during dismantling of structures in designated areas.
- .9 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated facilities.

- .1 On-site source separation is recommended.
- .2 Remove co-mingled materials to off-site processing facility for separation.

1.05 DISPOSAL OF WASTES

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of waste, volatile materials, mineral spirits, oil, paint thinner into waterways, storm, or sanitary sewers.
- .3 Remove materials from deconstruction as deconstruction/disassembly Work progresses.

1.06 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to normal use of premises.
- .2 Maintain security measures as approved by Departmental Representative.

1.07 SCHEDULING

- .1 Co-ordinate Work with other activities at site to ensure timely and orderly progress of Work.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 APPLICATION

- .1 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

3.02 CLEANING

- .1 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition.
- .2 Clean-up work area as work progresses.
- .3 Source separate materials to be reused/recycled into specified sort areas.

END OF SECTION

1 GENERAL

1.01 RELATED REQUIREMENTS

- .1 Section 07 92 00 – Joint Sealants.
- .2 Section 09 91 00 – Painting.

1.02 ADMINISTRATIVE REQUIREMENTS

- .1 Acceptance of Work Procedures:
 - .1 Contractor's Inspection: Contractor: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - .1 Notify Departmental Representative in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
 - .2 Request Departmental Representative review.
 - .2 Departmental Representative's review:
 - .1 Departmental Representative and Contractor to review Work and identify defects and deficiencies.
 - .2 Contractor to correct Work as directed.
 - .3 Completion Tasks: submit written certificates in English that tasks have been performed as follows:
 - .1 Work: completed and reviewed for compliance with Contract Documents.
 - .2 Defects: corrected and deficiencies completed.
 - .3 Work: complete and ready for final review.
 - .4 Final Review:
 - .1 When completion tasks are done, request final review of Work by Departmental Representative.
 - .2 When Work incomplete according to Departmental Representative, complete outstanding items and request re-review.

1.03 FINAL CLEANING

- .1 Clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Remove surplus materials, excess materials, rubbish, tools and equipment.
- .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED

- .1 Not Used.

END OF SECTION

1 GENERAL

1.01 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-warranty Meeting:
 - .1 Convene meeting one week prior to contract completion with contractor's representative and Departmental Representative, in accordance with Section 01 31 19 - Project Meetings to:
 - .1 Verify Project requirements.
 - .2 Review manufacturer's warranty requirements.
 - .2 Departmental Representative to establish communication procedures for:
 - .1 Notifying construction warranty defects.
 - .2 Determine priorities for type of defects.
 - .3 Determine reasonable response time.
 - .3 Contact information for bonded and licensed company for warranty work action: provide name, telephone number and address of company authorized for construction warranty work action.
 - .4 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

1.02 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Three (3) weeks prior to Substantial Performance of the Work, submit to the Departmental Representative, two (2) final hard copies and one electronic copy of operating and maintenance manuals. Substantial completion will not be considered until this submission is completed.
- .3 Ensure spare parts, maintenance materials and special tools are new, neither damaged nor defective, and of same quality and manufacture as products provided in Work.
- .4 Provide evidence, if requested, for type, source and quality of products supplied.
- .5 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.

1.03 FORMAT

- .1 Organize data as instructional manual.
- .2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
- .3 When multiple binders are used correlate data into related consistent groupings.
 - .1 Identify contents of each binder on spine.
- .4 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
- .5 Arrange content by Section numbers and sequence of the Table of Contents according to the contract documents Table of Contents.

- .6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .7 Text: manufacturer's printed data, or typewritten data.
- .8 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages with drawing number and description visible.
- .9 Provide 1:1 scaled CAD files in dwg format on CD.

1.04 CONTENTS - PROJECT RECORD DOCUMENTS

- .1 Table of Contents (for each volume): provide the following:
 - .1 Title of project.
 - .2 Date of submission
 - .3 Names, addresses, telephone numbers and email addresses of Consultant, Contractor and Sub-Contractors with name of responsible parties.
 - .4 Schedule of products and systems, indexed to content of volume.
- .2 For each product or system:
 - .1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- .3 Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- .5 Typewritten Text: as required to supplement product data.
 - .1 Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control.

1.05 AS -BUILT DOCUMENTS

- .1 Contract drawings and shop drawings: legibly mark each item to record actual construction, including:
 - .1 Measured locations of internal utilities and appurtenances, reference to visible and accessible features of construction.
 - .2 Field changes of dimension and detail.
 - .3 Changes made by change orders.
 - .4 Change Orders and other modifications to Contract.
 - .5 Details not on original Contract drawings.
 - .6 References to related shop drawings and modifications.
- .2 Contract Specifications: legibly mark each item to record actual 'workmanship of construction', including:
 - .1 Manufacturer, trade name, and catalogue number of each 'Product/Material' actually installed, particularly optional items and substitute items.
 - .2 Changes made by addenda and change orders.
- .3 As-built information:
 - .1 Record changes in red ink as work progresses.
 - .2 Mark on 1 set of drawings, specifications and shop drawings at completion of project and, before final review, neatly transfer notations to second set.
 - .3 Provide 1 set of CDs in PDF file format with all as-built information included.

- .4 Submit all sets to Departmental Representative.

1.06 EQUIPMENT AND SYSTEMS

- .1 Include manufacturer's printed operation and maintenance instructions.
- .2 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- .3 Additional requirements: as specified in individual specification sections.

1.07 MATERIALS AND FINISHES

- .1 Building products, applied materials, and finishes: include product data, with colour and texture designations.
 - .1 Provide information for re-ordering products.
- .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .3 Moisture-protection and weather-exposed products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .4 Additional requirements: as specified in individual specifications sections.

1.08 WARRANTIES

- .1 Separate each Document with index tab sheets keyed to Table of Contents listing.
- .2 List subcontractor, supplier and manufacturer with name, address and telephone number of responsible principal.
- .3 Obtain warranties and inspection reports executed in by subcontractors, suppliers, manufacturers and inspection agencies within 10 days after completion of applicable item of work.
- .4 Except for items put into use with the Departmental Representative's permission leave date of beginning of time of warranty until the date of substantial performance is determined.
- .5 Verify that documents are in proper form, contain full information and are notarized.
- .6 Co-execute submittals when required.
- .7 Retain warranties and bonds until time specified for submittal with Operating and Maintenance manual.
- .8 Conduct joint 9 month warranty inspection, measured from time of acceptance, by Departmental Representative.

1.09 COMPLETION

- .1 Submit a written certificate that the following have been performed:
 - .1 Work has been completed and reviewed for compliance with the Contract documents.
 - .2 Defects have been corrected and deficiencies have been completed.

.3 Work is complete and ready for final review.

2 PRODUCTS

2.01 NOT USED

.1 Not Used.

3 EXECUTION

3.01 NOT USED

.1 Not Used.

END OF SECTION

1 GENERAL

1.01 RELATED SECTIONS

- .1 Section 02 83 10 – Lead Base Paint Abatement – Minimum Precautions.

1.02 REFERENCES

- .1 U.S. Environmental Protection Agency (EPA)/Office of Water
 - .1 EPA 832/R-92-005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

1.03 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures and 01 74 19 - Construction/Demolition Waste Management and Disposal.

1.04 SITE CONDITIONS

- .1 If material resembling spray or trowel-applied asbestos or other designated substance 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.
- .2 Notify Departmental Representative before disrupting building access or services.

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

3.01 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 in operating condition.

3.02 PREPARATION

- .1 Protection of In-Place Conditions:
 - .1 Prevent movement, settlement, or damage to adjacent structures, utilities, and landscaping features and parts of building and finishes to remain.
 - .2 Protect existing roofing.
 - .3 Keep noise, dust, and inconvenience to occupants to minimum.
 - .4 Protect building systems, services and equipment.
 - .5 Provide temporary dust screens, covers, railings, supports and other protection as required.

- .6 Do Work in accordance with Section 01 35 33 - Health and Safety Requirements.
- .2 Demolition/Removal:
 - .1 Remove items as indicated.
 - .2 Remove parts of existing buildings as indicated to permit remedial construction. Items for reinstallation to be stored in a dry, protected area as directed by Departmental Representative.

3.03 REINSTALLATION

- .1 Reinstall elements that have been removed for remediation work once remediated work has been completed and reviewed by Departmental Representative.
- .2 Install to original position and make good any damaged elements to satisfaction of Departmental Representative.
- .3 Upon completion of installation, notify Departmental Representative for review of completed work.

3.04 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - 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 11 - 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 - Construction/Demolition and Waste Management and Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at authorized facility.

END OF SECTION

1 GENERAL

1.01 SUMMARY

- .1 Comply with requirements of this Section when performing following Work:
 - .1 Removal of lead-containing coatings and hazardous materials using a power tool with an effective dust collection system equipped with a HEPA filter where indicated on drawings.

1.02 RELATED REQUIREMENTS

- .1 Section 02 41 99 – Demolition for Minor Works.
- .2 Section 09 91 00 – Painting.

1.03 REFERENCES

- .1 Department of Justice Canada
 - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .2 Health Canada
 - .1 Workplace Hazardous Materials Information System (WHMIS), Material Safety Data Sheets (MSDS).
- .3 Human Resources and Social Development Canada (HRSDC)
 - .1 Canada Labour Code Part II, - SOR 86-304 - Occupational Health and Safety Regulations.
- .4 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .5 U.S. Environmental Protection Agency (EPA)
 - .1 EPA 747-R-95-007-1995, Sampling House Dust for Lead.
- .6 U.S. Department of Labour - Occupational Safety and Health Administration (OSHA) - Toxic and Hazardous Substances
 - .1 Lead in Construction Regulation - 29 CFR 1926.62-[1993].
- .7 Underwriters' Laboratories of Canada (ULC)

1.04 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 Authorized Visitors: Departmental Representative or designated representatives.
- .3 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. For protection of underlying surfaces from damage and to prevent lead dust entering in clean area.
- .4 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must be appropriate capacity for scope of work.

- .5 Action level: employee exposure, without regard to use of respirators, to airborne concentration of lead of 50 micrograms per cubic meter of air (50 ug/m²) calculated as 8-hour time-weighted average (TWA). Minimum precautions for lead abatement are based on airborne lead concentrations less than 0.05 milligrams per cubic meter of air for removal of lead based paint by methods noted in paragraph 1.1.
- .6 Competent person: individuals capable of identifying existing lead hazards in workplace taking corrective measures to eliminate them.
- .7 Lead dust: wipe sampling on vertical surfaces and/or horizontal surfaces, dust and debris is considered to be lead contaminated if it contains more than 40 micrograms of lead in dust per square foot.

1.05 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide proof satisfactory to Departmental Representative that suitable arrangements have been made to dispose of lead based paint waste in accordance with requirements of authority having jurisdiction.
- .3 Provide proof of Contractor's General Insurance.
- .4 Quality Control:
 - .1 Provide Departmental Representative necessary permits for transportation and disposal of lead based paint waste and proof that lead based paint waste has been received and properly disposed.
 - .2 Provide proof satisfactory to Departmental Representative that employees have had instruction on hazards of lead exposure, respirator use, dress, and aspects of work procedures and protective measures.

1.06 QUALITY ASSURANCE

- .1 Regulatory Requirements: comply with Federal, Provincial/Territorial and local requirements pertaining to lead paint, 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 Do construction occupational health and safety in accordance with Section 01 35 33 - Health and Safety Requirements and WorkSafe regulations and standards.
 - .2 Safety Requirements: worker and visitor protection.
 - .1 Protective equipment and clothing to be worn by workers and visitors in work Area include:
 - .1 Half mask respirator: half-mask particulate respirator with N - series filter, and 95 % efficiency could be provided.
 - .2 Eating, drinking, chewing, and smoking are not permitted in work area.
 - .3 Ensure workers wash hands and face when leaving work area. Facilities for washing are located where approved by Departmental Representative.
 - .4 Visitor Protection:
 - .1 Instruct Authorized Visitors procedures to be followed in entering and exiting work area.

1.07 WASTE MANAGEMENT AND DISPOSAL

- .1 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal regulations.
- .2 Disposal of lead waste generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Dispose of lead waste in sealed double thickness 6 ml bags or leak proof drums. Label containers with appropriate warning labels.
- .3 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

1.08 EXISTING CONDITIONS

- .1 Reports and information pertaining to lead based paint to be handled, removed, or otherwise disturbed and disposed of during this Project are bound into this specification.
- .2 Notify Departmental Representative of lead based paint discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by Departmental Representative.

1.09 SCHEDULING

- .1 Not later than two days before beginning Work on this Project notify following in writing:
 - .1 Appropriate Regional or Zone Director of Medical Services Branch, Health Canada.
 - .2 Provincial Ministry of Labour.
 - .3 Disposal Authority.
- .2 Inform sub trades of presence of lead-containing materials identified in Existing Conditions.
- .3 Provide Departmental Representative copy of notifications prior to start of Work.

1.10 PERSONNEL TRAINING

- .1 Provide Departmental Representative satisfactory proof that every worker has had instruction and training in hazards of lead exposure, in personal hygiene, in aspects of work procedures, and in use, cleaning, and disposal of respirators.
- .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.

2 PRODUCTS

2.01 MATERIALS

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

- .2 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under dry conditions and wet conditions using amended water.
- .3 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 lead paint residue.
- .4 Lead waste containers: type acceptable to dump operator with tightly fitting covers and 0.15 mm thickness sealable polyethylene liners.
 - .1 Label containers with pre-printed bilingual cautionary Warning Lead clearly visible when ready for removal to disposal site.

3 EXECUTION

3.01 SUPERVISION

- .1 One Supervisor for every ten workers is required.
- .2 Supervisor must remain within work area during disturbance, removal, or handling of lead based paints.

3.02 PREPARATION

- .1 Remove and store items to be salvaged or reused.
 - .1 Protect and wrap items and transport and store in area specified by Departmental Representative.
- .2 Work Area:
 - .1 Shut off and isolate HVAC system to prevent dust dispersal into other building areas. Conduct smoke tests to ensure duct work is airtight.
 - .2 Seal off openings with polyethylene sheeting and seal with tape.
 - .3 Maintain emergency fire exits or establish alternatives satisfactory to Authority having jurisdiction.
 - .4 Where water application is required for wetting lead containing materials, provide temporary water supply appropriately sized for application of water as required.
 - .5 Provide electrical power and shut off for operation of powered tools and equipment. 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 cables and equipment.
- .3 Do not start work until:
 - .1 Arrangements have been made for disposal of waste.
 - .2 Tools, equipment, and materials waste containers are on site.
 - .3 Arrangements have been made for building security.
 - .4 Notifications have been completed and preparatory steps have been taken.

3.03 LEAD ABATEMENT

- .1 Removal of lead-containing coatings with a chemical gel or paste and fibrous laminated cloth wrap; or removal equipped with HEPA filters; or removal with using non-destructive power tools and non-powered hand tools, other than manual scraping and sanding. Contractor to determine method in accordance with regulatory bodies and WorkSafe BC.
- .2 Remove lead based paint in small sections and pack as it is being removed in sealable 0.15 mm plastic bags 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. Wash containers thoroughly pending removal to outside. Ensure containers are removed by workers who have entered from uncontaminated areas dressed in clean coveralls.
- .4 After completion of stripping work, clean surface from which lead based paint has been removed to remove visible material. During this work keep surfaces wet.
- .5 After cleaning to remove visible lead based paint, and after encapsulating lead containing material impossible to remove, wet clean entire work area, and equipment used in process. After inspection by Departmental Representative apply continuous coat of slow drying sealer to surfaces of work area.

3.04 INSPECTION

- .1 Perform inspection to confirm compliance with specification and governing authority requirements. Deviations from these requirements not approved in writing by Departmental Representative will result in work stoppage, at no cost to Owner.
- .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.

3.05 FINAL CLEANUP

- .1 Following cleaning and when lead wipe surfaces sampling are below acceptable concentrations, proceed with final cleanup.
- .2 Remove polyethylene sheet by rolling it away from walls to centre of work area. Vacuum visible lead containing particles observed during cleanup, immediately, using HEPA vacuum.
- .3 Place polyethylene sheets, tape, cleaning material, clothing, and contaminated waste in plastic bags and sealed labelled waste containers for transport.
- .4 Conduct final check to ensure no dust or debris remains on surfaces as result of dismantling operations.

3.06 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS

- .1 Repair or replace objects damaged in course of work to their original state or better, as directed by Departmental Representative.

END OF SECTION

1 GENERAL

1.01 SECTION INCLUDES

- .1 Wood siding, trim, replacement of decayed wood, pressure treated wood and plywood, fasteners and accessories.

1.02 RELATED REQUIREMENTS

- .1 Section 07 92 00 – Joint Sealants.
- .2 Section 09 91 00 – Painting.

1.03 REFERENCES

- .1 ASTM International
 - .1 ASTM B 695-04(2009), Standard Specification of Coatings of Zinc Mechanically Deposited on Iron and Steel.
 - .2 ASTM F1667-11ae1, Standard Specification for Driven Fasteners: Nails, Spikes and Staples.
- .2 CSA International
 - .1 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.
 - .2 CSA G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
 - .3 CSA O80 Series 08(R2012) Consolidated, Wood Treatment.
 - .4 CSA O121-08(R2013), Douglas Fir Plywood.
- .3 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber 2010.

1.04 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for wood products and accessories and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Nails must conform to the requirements of the building code in force at the location and place where the Work is proceeding.
- .4 If requested, submit samples of nails to the Consultant for independent testing.

1.05 QUALITY ASSURANCE

- .1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.

1.06 MOCK UP

- .1 Prepare a mock-up at site of typical siding and fascia installation, at two locations designated by the Departmental Representative.

1.07 PROJECT/SITE CONDITIONS

- .1 Provide a moisture meter on site, approved by Departmental Representative for measuring the moisture content of installed material.
- .2 Take daily moisture content readings of installed new materials. Keep a log book record of moisture content readings, location, and material tested. Wood moisture contents must be below 19% before it can be covered by other building components.

1.08 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect wood from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

2 PRODUCTS

2.01 MATERIALS

- .1 Unless otherwise specified, dimensions, thicknesses of material must match existing or be in accordance with the NBC Code 2010, whichever is more stringent.
- .2 Conform to NLGA Standard Grading rules for Canadian lumber for the grades of lumber specified herein.
 - .1 S4S unless specified otherwise.
- .3 Fir Siding and Trim: Douglas-Fir, No.2 or better, profile and thickness to match existing.
- .4 Fascia: Douglas-Fir, marine-grade, pressure-treated, thickness to match existing but not less than 12mm.

2.02 ACCESSORIES

- .1 Nails for siding: hot dipped galvanized common nails, or stainless steel, minimum 36mm long to penetrate studs a minimum of 25mm.
- .2 Screws for fascia: stainless steel exterior screws, minimum 56mm long.

3 EXECUTION

3.01 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for product installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately

upon discovery.

.3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.02 PREPARATION

- .1 Treat cut surfaces of material with wood preservative, before installation.
- .2 Apply preservative by dipping, or by brush to completely saturate and maintain wet film on surface for minimum 3 minute soak on lumber and one minute soak on plywood.
- .3 Re-treat surfaces exposed by cutting, trimming or boring with liberal brush application of preservative before installation.
- .4 Treat material:
 - .1 Wood fascia.

3.03 PLYWOOD FASCIA

- .1 Replace the existing fascia with marine grade plywood screwed to the underlying substrate at 150mm o.c. around edges and at 150mm o.c. at intermediate supports. Provide 6mm wide gap between sheets.

3.04 ACCESSORIES

- .1 Gutters and Rain Water Leaders:
 - .1 Re-install metal gutters and rain water leaders in accordance with the requirements of good practice. Fasten securely with straps at existing intervals. Seal joints in gutters with gutter seal. Connect rain water leaders to drains as shown on the drawings. Slope horizontal rain water leaders properly to drain and provide precast concrete splash pads at ground level. Install drop outlets at rainwater leaders terminating at grade to direct runoff away from building perimeter.
 - .2 Use hot dipped galvanized casing nails and countersink.
- .2 Wood gutters: Waterproof the interior of the wood gutters of the lead foundry and watch shed with a reinforced PMMA membrane. The wood of the interior of the gutter must be primed with the manufacturer recommended primer prior to the application of the PMMA membrane.
 - .1 PMMA membrane: Acceptable product: Soprema Alsan RS, Silplast Parapro or pre-approved alternative.

3.05 INSTALLATION

- .1 Install members true to line, levels and elevations, square and plumb.
- .2 Construct continuous members from pieces of longest practical length.
- .3 Select exposed wood for appearance. Install lumber materials so that grade-marks and other defacing marks are concealed or are removed by sanding where materials are left exposed.
- .4 Existing loose siding boards and open joints are to be nailed back using hot-dipped galvanized nails only.

3.06 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by rough carpentry installation.

END OF SECTION

1 GENERAL

1.01 SUMMARY

- .1 Work includes provision of sealants and related accessories including:
 - .1 Preparing joint surfaces.
 - .2 Primers and joint backing.
 - .3 Installation of sealants in interior and exterior joints, around items penetrating structure, and other applications to allow expansion, contraction, and other movement while protecting against intrusion of water, air, and foreign matter.
 - .4 Tooling silicone sealant joints and cleaning adjacent surfaces.

1.02 REFERENCES

- .1 ASTM International (ASTM):
 - .1 ASTM C510-05a - Standard Test Method for Staining and Color Change of Single and Multi-component Joint Sealants.
 - .2 ASTM C639-01(2011) - Standard Test Method for Rheological (Flow) Properties of Elastomeric Sealants.
 - .3 ASTM C661-06(2011) - Standard Test Method for Indentation Hardness of Elastomeric Type Sealants by Means of a Durometer.
 - .4 ASTM C679-03(2009)e1 - Standard Test Method for Tack-Free Time of Elastomeric Sealants.
 - .5 ASTM C719-93(2010) - Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle).
 - .6 ASTM C794-10 - Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants.
 - .7 ASTM C920-11 – Standard Specification for Elastomeric Joint Sealants.
 - .8 ASTM D412-06a(2013) - Standard Test Method for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers - Tension.
 - .9 ASTM D624-00(2012) - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
 - .10 ASTM D2202-00(2010) - Standard Test Method for Slump of Sealants.
 - .11 ASTM D2240-05(2010) – Standard Test Method for Rubber Property - Durometer Hardness.
- .12 Department of Justice Canada (Jus)
 - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .13 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .14 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).

1.03 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit product data in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Manufacturer's product to describe.
 - .1 Caulking compound.

- .2 Primers.
- .3 Sealing compound, each type, including compatibility when different sealants are in contact with each other.
- .3 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .4 Submit duplicate samples of each type of material and colour.
- .5 Cured samples of exposed sealants for each color where required to match adjacent material.
- .6 Submit manufacturer's instructions in accordance with Section 01 33 00 - Submittal Procedures.
 - .1 Instructions to include installation instructions for each product used.
- .7 Submit warranties for review by Departmental Representative.

1.04 QUALITY ASSURANCE / MOCK-UPS

- .1 Installer qualifications: 3 years successful experience installing joint sealants and acceptable to sealant manufacturer for installing their products.
- .2 During construction period, each type of sealant and related primer and backing shall be products provided by a single manufacturer.
- .3 Pre-Installation Adhesion Test:
 - 1. Prior to application of sealants, test each application condition to ensure sealant satisfactorily adheres to substrate.
 - 2. Apply sealant to sample substrate and perform hand-pull tab test in accordance with ASTM C1193, Method A.
 - 3. Determine if primer is required. If so, re-test using primer.
 - 4. Submit report to Consultant with description of test, results, and recommended installation procedures to obtain proper adhesion.
- .4 Construct mock-up in accordance with Section 01 45 00 - Quality Control.
- .5 Construct mock-up to show location, size, shape and depth of joints complete with back-up material, primer, caulking and sealant.
- .6 Mock-up will be used:
 - .1 To judge workmanship, substrate preparation, operation of equipment and material application.
- .7 Locate where directed by Departmental Representative.
- .8 Allow 48 hours for review of mock-up by Departmental Representative before proceeding with sealant work.
- .9 When accepted, mock-up will demonstrate minimum standard of quality required for this Work. Approved mock-up may remain as part of finished Work.

1.05 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, handle, store and protect materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Deliver and store materials in original wrappings and containers with manufacturer's seals and labels, intact. Protect from freezing, moisture, water and contact with ground or floor.
- .3 Do not use sealants and primers after manufacturer's stated shelf life.

1.06 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Construction/Demolition Waste Management and Disposal.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Place materials defined as hazardous or toxic in designated containers.
- .4 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
- .5 Unused sealant material must not be disposed of into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.
- .6 Divert unused joint sealing material from landfill to official hazardous material collections site.
- .7 Empty plastic joint sealer containers are not recyclable. Do not dispose of empty containers with plastic materials destined for recycling.
- .8 Fold up metal banding, flatten, and place in designated area for recycling.

1.07 SITE CONDITIONS

- .1 Environmental Limitations. Do not proceed with installation of joint sealants under following conditions:
 - .1 When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 3.0 degrees C of dew point or above 50 degrees C.
 - .2 Optimal sealant application temperature: 10 and 35 degrees C.
 - .3 When joint substrates are wet.
- .2 Joint-Width Conditions:
 - .1 Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.
- .3 Joint-Substrate Conditions:
 - .1 Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

1.08 ENVIRONMENTAL REQUIREMENTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of Material Safety Data Sheets (MSDS) acceptable to Labour Canada.
- .2 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.
- .3 Ventilate area of work as directed by Departmental Representative by use of approved portable supply and exhaust fans.

1.09 WARRANTY

- .1 Project Warranty: Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Provide installer's standard 5 year warranty under provisions of Section 01 78 00 - Closeout Submittals. Warranty to be executed by authorized company official.
- .3 Provide manufacturer's standard 5 year warranty under provisions of Section 01 78 00 - Closeout Submittals. Warranty to be executed by authorized company official.
- .4 Manufacturer's warranty is in addition to, and not a limitation of, other rights Departmental Representative may have under Contract Documents.

2 PRODUCTS

2.01 SEALANT MATERIAL DESIGNATIONS

- .1 Wood components and electrical wire penetrations through siding, at flashing terminations:
 - .1 Single Component Urethane, to ASTM C920, Type S, Grade NS, Class 100/50, Use T, NT, M, G, A and O, colour to match.
 - .1 Acceptable Products: Tremco Dynamic FC Polyurethane Sealant or Sonneborn NP-1.
 - .2 Or pre-approved alternative.
 - .3 Joint size limitations:
 - 1. Width: 6mm to 25mm. Greater than 25mm only upon approval of Departmental Representative.
 - 2. Depth: 6mm to 12mm.
 - 3. Colour: to match existing.
- .2 Wood Windows – Glazing Putty:
 - .1 Acceptable Products: Bostik Linseed Putty or DAP '33' glazing putty.
 - .2 Or pre-approved alternative.
- .3 Wood Repair Putty (for window frames).
 - .1 Acceptable Product: Bostik Linseed Putty.
 - .2 Or pre-approved alternative.

- .4 Accessories:
 - .1 Cleaning solvents: As recommended by sealant manufacturer to be compatible with sealant and not adversely affect substrate.
 - .2 Wood Preservative for repair of decayed window frames: After decayed portions of wood are removed from the window frames, treat with Boracol 10-2BD to kill wood decay fungi.
 - .3 Cleaning cloths: Clean, soft, absorbent, lint-free cloths.
 - .4 Substrate primer: As recommended for project conditions and provided by sealant manufacturer
 - .5 Sealant backing: Provide backing complying with ASTM C1330 open-cell polyurethane.
 - .1 Size: Greater than joint opening by 25 percent minimum.
 - .6 Bond breaker tape: Provide tape to prevent adhesion to joint fillers or joint surfaces at back of joint and allow sealant movement.
 - .1 Type: Polyethylene or other plastic tape recommended by sealant manufacturer.

2.02 JOINT CLEANER

- .1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.
- .2 Primer: as recommended by manufacturer.

3 EXECUTION

3.01 PROTECTION

- .1 Protect installed Work of other trades from staining or contamination.

3.02 SURFACE PREPARATION

- .1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.

Clean bonding joint surfaces of harmful matter substances including dust, rust, oil grease, and other matter which may impair Work. Clean nonporous substrates with two-cloth solvent wipe in accordance with ASTM C1193.

- .1 Pour cleaning solvent onto clean cloth. Wipe vigorously to remove contaminants.
- .2 Immediately wipe cleaned area with separate cloth before solvent has evaporated.
- .2 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.
- .3 Ensure joint surfaces are dry and frost free.
- .4 Prepare surfaces in accordance with manufacturer's directions. Do not apply in totally confined spaces without ventilation for curing.

3.03 PRIMING

- .1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.
- .2 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.
- .3 Apply primer to substrates determined by adhesion test.
 - .1 Pour primer into small, clean container. Use within 10 minutes to avoid contamination.
 - .2 Dip cloth into primer and wipe a thin film onto substrate. Use brush for inaccessible areas. Do not over-apply.
 - .3 Allow primer to dry. Apply sealant the same day surfaces are primed.
 - .4 Do not apply primer to sealant joint backing.
- .4 Masking: Apply masking tape as required to protect adjacent surfaces and to ensure straight bead line and facilitate cleaning.

3.04 BACKUP MATERIAL

- .1 Avoid three sided sealant adhesion by use of backer rod or bond breaker tape. Apply bond breaker tape where required to manufacturer's instructions.
- .2 Install joint filler to achieve correct joint depth and shape, with approximately 30% compression.

3.05 MIXING

- .1 Mix materials in strict accordance with sealant manufacturer's instructions.

3.06 APPLICATION

- .1 Sealant.
 - .1 Apply sealant in accordance with manufacturer's written instructions.
 - .2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.
 - .3 Sealant backing: install without gaps, twisting, stretching, or puncturing backing material. Use gage to ensure depth to achieve correct profile, coverage and performance.
 - .4 Apply sealant in continuous beads.
 1. Use sealant-dispensing equipment to push sealant bead into opening. Fill joint opening to full and proper configuration. Apply in continuous operation. Ensure sealant fills entire joint and firmly contacts all surfaces.
 - .5 Use sufficient pressure to fill voids and joints solid.
 - .6 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.
 - .7 Tooling: Before skinning or curing begins, tool sealant with metal staple. Provide concave, smooth, uniform, sealant finish. Eliminate air pockets and ensure complete contact on both sides of joint opening. Tool joints with one continuous stroke.
 - .8 Remove excess compound promptly as work progresses and upon completion.

- .9 Complete horizontal joints prior to vertical joints. Lap vertical sealant over horizontal joints.
- .2 Curing.
 - .1 Cure sealants in accordance with sealant manufacturer's instructions.
 - .2 Uncured sealant: within 10 minutes of application, remove uncured sealant with solvent-dampened cloth, wearing solvent resistant gloves.
 - .3 Completely cured sealant: carefully cut or scrape away.
 - .4 Do not cover up sealants until proper curing has taken place.
 - .5 Ensure installed sealant is not painted as part of other construction operations unless specifically formulated to be painted.
- .3 Cleanup:
 - .1 Clean adjacent surfaces immediately and leave Work neat and clean.
 - .2 Remove excess and droppings, using recommended cleaners as work progresses.
 - .3 Remove masking tape after initial set of sealant.
- .4 Field Quality Control:
 - .1 Perform adhesion tests in accordance with manufacturer's instructions and ASTM C1193 Method A, Field-Applied Sealant Joint Hand-Pull Tab.
 - 1. Perform 1 test per floor per building elevation minimum.
 - 2. For sealant applied between dissimilar materials, test both sides of joint.
 - .2 Sealants failing adhesion test shall be removed, substrates cleaned, sealants re-installed, and re-testing performed.

END OF SECTION

1 GENERAL

1.01 SUMMARY OF WORK

- .1 The buildings are primarily of wood frame structure, the surfaces are wood and require complete stripping of existing coatings, due to excess paint film and extensive failure observed on the buildings.
- .2 Work includes but not necessarily limited to:
 1. Surface preparation of substrates as required for acceptance of paint, including cleaning, small crack repair, patching, caulking and making good surfaces and areas to the limits defined under MPI Repainting Manual preparation requirements.
 2. Specific pre-treatments noted herein or specified in the MPI Repainting Manual and Architectural Painting Specification Manual.
 3. Sealing/Priming surfaces for repainting in accordance with MPI Repainting Manual and Architectural Painting Specification Manual requirements.
- .3 Include all incidental items not specifically noted above but considered part of the finished surface.

1.02 RELATED REQUIREMENTS

- .1 Section 02 83 10 – Lead Base Paint Abatement – Minimum Precautions.
- .2 Section 06 10 00 – Rough Carpentry.

1.03 REFERENCES

- .1 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .2 The Master Painters Institute (MPI)
 - .1 Maintenance Repainting Manual, current edition, Master Painters Institute (MPI), including Identifiers, Evaluation, Systems, Preparation and Approved Product List.
 - .2 Architectural Painting Specification Manual, 2010 (new siding and fascia).
- .3 National Fire Code of Canada.

1.04 QUALITY ASSURANCE

- .1 Qualifications: qualified journeypersons as defined by local jurisdiction to be engaged in painting work. Apprentices may be employed provide they work under the direct supervision of a qualified journeyperson in accordance with trade regulations.
- .2 Conform to latest MPI requirements for exterior repainting work including cleaning, preparation and priming.
- .3 Materials (primers, paints, thinners, and solvents) to be in accordance with the latest edition of the MPI Approved Product List and to be from a single manufacturer for each system used.

- .4 Paint materials such as turpentine, to be the highest quality product of an approved manufacturer listed in MPI Maintenance Repainting Manual and shall be compatible with other coating materials as required.
- .5 Retain purchase orders, invoices and other documents to prove conformance with noted MPI requirements when requested by Departmental Representative.
- .6 Schedule repainting operations to prevent disruption by other trades if applicable and by occupants in and about building.
- .7 All repainting work shall be inspected by MPDA Inspection Agency acceptable to the local MPI Accredited Quality Assurance Association. The Contractor to notify MPDA Inspection Agency a minimum of one week prior to commencement of work and provide all documents in accordance with Section 01 33 00 – Submittal Procedures.
- .8 All surfaces requiring repainting to be inspected by Contractor who will notify MPDA Inspection Agency and Departmental Representative in writing of any defects as defined by MPI (DSD4 assessment) or other problems relating to the execution of work, prior to commencing repainting or after preparation work.

1.05 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide duplicate paint colour samples and submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit written verification of ability to supply a 100% two (2) year maintenance bond, if Paint Association warranty option is not used with Bid Submission.
- .3 Provide product data and manufacturer's installation/application instructions for paints and coating products to be used.
- .4 Provide certification reports for ecologo paint products used.
- .5 If requested, submit invoice list of all paint materials order to complete work to Paint Inspection Agency indicating manufacturer, types and quantities for verification and compliance with specification.
- .6 If requested, submit work schedule for various stages of the Work to the Departmental Representative.
- .7 Submit MSDS prior to commencement of work for review and posting at job site.
- .8 Quality Assurance Submittals:
 - .1 Manufacturer's Instructions: manufacturer's installation instructions.
- .9 Closeout Submittals:
 - .1 Provide records of products used. List products in relation to finish system and include following:
 - .1 Product name, type and use (i.e. materials and location).
 - .2 Manufacturer's product number.
 - .3 Colour code numbers.
 - .4 Manufacturer's Material Safety Data Sheets.
- .10 Extra Materials:
 - .1 Provide 1 litre of each type and colour of paint from same production run (batch mix) used in unopened cans and properly labeled.

1.06 INSPECTION

- .1 The MPDA Inspection Agency will not be responsible for and will not have control, or supervise the contractor in performance of work.
- .2 The MPDA inspection Agency will be responsible to observe and report and shall not be responsible for the contractor's failure to carry out the work in accordance with the contract documents.

1.07 REGULATORY REQUIREMENTS

- .1 Conform to work place safety regulations for storage, mixing, application and disposal of all paint related materials to requirements of those authorities having jurisdiction.
- .2 Conform to safety precautions in accordance with the latest requirements to Industrial Health and Safety Regulations, latest edition, of authorities having jurisdiction.
- .3 Notify the MPDA Inspection Agency on award of contract and make application for assignment using MPDA Agency forms, finish schedule and list of MPI Approved Products Intended for Use on the Project for verification purposes prior to commencement of work.
- .4 Cooperate with the requirements of MPDA Paint Inspection Agency in the performance of their duties including providing access and assistance as required to complete inspection work.
- .5 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into the ground, the following procedures shall be strictly adhered to (but not limited to):
 1. Contractor and sub-contractor staff must be trained in spill response and reporting procedures including containment methods for paints and solvents.
 2. Sufficient spill clean-up equipment should be available on-site to adequately handle all potential spill volumes and types.
 3. All transfer of paint from storage and mixing containers into application devices shall be conducted in a location that minimizes the risks of accidentally spilled product entering the Fraser River intertidal zone beneath the cannery complex.
 4. Placing open paint containers within secondary containment vessels with minimum holding capacity of 120% of the paint container is an effective means of minimizing the risk of spillage.
 5. Workers will carry the minimum quantities of paints and solvents in the work area that enables efficient undertaking of the required work.
 6. Paint application equipment must be adjusted to minimize spray drift.
 7. Cleaning of painting equipment will be conducted in a location which minimizes the risk of paint and solvents entering the receiving environment.
 8. Retain cleaning water for water-based materials to allow sediments to be filtered out.
 9. Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
 10. Dispose of waste paint, solvents, solvent and oil soaked rags and contaminants in an approved legal manner in accordance with federal, provincial and municipal hazardous waste regulations. No disposal of waste paint or solvent/paint mixtures is permitted at the Gulf of Georgia Cannery National Historic Site.
 11. Close and seal tightly partly used cans of materials including sealant and adhesive containers and store protected in well ventilated fire-safe area at moderate temperature.

12. Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.
13. Empty paint cans are to be dry prior to disposal or recycling (where available).

1.08 MOCK-UPS:

- .1 When requested by Departmental Representative or MPDA Inspection Agency, prepare and repaint a designated exterior surface area or item to requirements specified herein, with specified paint or coating showing selected colors, gloss/sheen, texture and workmanship to MPI Manual standards for review and approval. When approved, the exterior surface area and/or item shall become the acceptable standard of finish quality and workmanship for similar on-site repainting work.

1.09 DELIVERY, STORAGE AND HANDLING

- .1 Packing, shipping, handling and unloading:
- .2 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements, supplemented as follows:
 - .1 Deliver and store materials in original containers, sealed, with labels intact.
 - .2 Labels to indicate:
 - .1 Manufacturer's name and address.
 - .2 Type of paint or coating.
 - .3 Compliance with applicable standard.
 - .4 Colour number in accordance with established colour schedule.
 - .3 Remove damaged, opened and rejected materials from site.
 - .4 Store and handle in accordance with manufacturer's recommendations.
 - .5 Store materials and equipment in secure, dry, well-ventilated area with temperature range between 7 degrees C to 30 degrees C. Store materials and supplies away from heat generating devices and sensitive products above minimum temperature as recommended by manufacturer.
 - .6 Keep areas used for storage, cleaning and preparation, clean and orderly to approval of Departmental Representative. Upon completion of operations, return areas to clean condition to approval of Departmental Representative.
 - .7 Remove paint materials from storage in quantities required for same day use.
 - .8 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling storage, and disposal of hazardous materials.
 - .9 Fire Safety Requirements:
 - .1 Provide one 9 kg Type ABC dry chemical fire extinguisher adjacent to storage area.
 - .2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site daily.
 - .3 Handle, store, use and dispose of flammable and combustible materials in accordance with National Fire Code of Canada.
- .2 Waste Management and Disposal:
 - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Construction/Demolition Waste Management and Disposal.
 - .2 Paint finishes and related materials are hazardous products and are subject to regulations for disposal. Information on these controls can be obtained from Provincial Ministries of Environment and Regional levels of Government.
 - .3 Materials that cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.

- .4 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
- .5 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into the ground the following procedures shall be strictly adhered to:
 - .1 Retain cleaning water for water-based materials to allow sediments to be filtered out. In no case shall equipment be cleaned using free draining water.
 - .2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
 - .3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
 - .4 Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.
 - .5 Empty paint cans are to be dry prior to disposal or recycling (where available).
 - .6 Close and seal tightly partly used cans of materials including sealant and adhesive containers and store protected in well ventilated fire-safe area at moderate temperature.
- .6 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.

1.10 AMBIENT CONDITIONS

- .1 Temperature, Humidity and Substrate Moisture Content Levels:
 - .1 Unless specifically pre-approved by specifying body, Paint Inspection Agency and, applied product manufacturer, Do not perform repainting work when:
 - .1 Ambient air and substrate temperatures are below 10 degrees C.
 - .2 Substrate temperature is over 32 degrees C unless paint is specifically formulated for application at high temperatures.
 - .3 Substrate and ambient air temperatures are expected to fall outside paint manufacturer's prescribed limits.
 - .4 Relative humidity is above 85% or when dew point is less than 3 degrees C variance between air/surface temperature.
 - .5 Rain or snow is forecast to occur before paint has thoroughly cured.
 - .6 It is foggy, misty, raining or snowing at site.
 - .7 Environmental conditions are not within the MPI and paint manufacturer's requirements.
- .2 It is the Contractor's responsibility to conduct all required tests such as moisture content, PH tests, air and surface temperature and all other testing prior to the application of any coatings.
 - 1. Perform no exterior repainting work when maximum moisture content of the substrate exceeds 15% for wood.
 - 2. Conduct all moisture tests using a properly calibrated electronic moisture meter.
 - 3. Test surfaces for alkalinity (pH) as required.
- .3 Application Requirements:
 - .1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind conditions are such that airborne particles will affect quality of finished surface.
 - .2 Apply paint to adequately prepared surfaces and to surfaces within moisture limits noted.

- .3 Apply paint when previous coat of paint is dry or adequately cured, unless otherwise pre-approved by specific coating manufacturer.
- .4 Apply paint finishes when conditions forecast for entire period of application fall within manufacturer's recommendations.
- .5 Do not apply paint when:
 - .1 Temperature is expected to drop below 10 degrees C before paint has thoroughly cured.
 - .2 Substrate and ambient air temperatures are expected to fall outside MPI or paint manufacturer's limits.
 - .3 Surface to be painted is wet, damp or frosted.
- .6 Provide and maintain cover when paint must be applied in damp or cold weather. Heat substrates and surrounding air to comply with temperature and humidity conditions specified by manufacturer. Protect until paint is dry or until weather conditions are suitable.
- .7 Schedule repainting operations such that surfaces exposed to direct, intense sunlight are scheduled for completion during early morning.
- .8 Remove paint from areas which have been exposed to freezing, excess humidity, rain, snow or condensation. Prepare surface again and repaint.

1.11 WARRANTY

- .1 Project Warranty: Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Furnish a two (2) year Painting Association Guarantee or a 100% two (2) year Maintenance Bond both in accordance with MPI Repainting Manual requirements. The Maintenance Bond shall be obtained from an approved bonding company and will warrant that all painting work has been performed in accordance with MPI Repainting Manual requirements.
- .3 All repainting work shall be in accordance with MPI Repainting and Architectural Painting Specification Manual requirements and shall be inspected by the Painting Association whether using the Painting Association Guarantee or the Maintenance Bond option.
- .4 The cost for such Painting Association inspections, at 5% of the contract value, as well as either the Painting Association Guarantee or Maintenance Bond shall be included in the Base Bid Price awarded to Contractor.
- .5 Manufacturer's warranty is in addition to, and not a limitation of, other rights Departmental Representative may have under Contract Documents.

2 PRODUCTS

2.01 MATERIALS

- .1 Paint materials listed in latest edition of MPI Approved Product List (APL) are acceptable for use on this project.
- .2 Paint materials for repaint systems: products of single manufacturer.
- .3 Use only MPI listed materials.
- .4 Paints, coatings, thinners, solvents, cleaners and other fluids used in repainting to be as follows:
 - .1 Not contain methylene chloride, chlorinated hydrocarbons, toxic metal pigments.

- .2 Be manufactured without compounds which contribute to ozone depletion in upper atmosphere.
- .3 Be manufactured without compounds which contribute to smog in lower atmosphere.
- .4 Be manufactured where matter generating 'Biochemical Oxygen Demand' (BOD) in undiluted production plant effluent discharged to natural watercourse or sewage treatment facility lacking secondary treatment does not exceed 15 mg/L.
- .5 Be manufactured where total suspended solids (TSS) content in undiluted production plant effluent discharged to natural watercourse or sewage treatment facility lacking secondary treatment does not exceed 15 mg/L.
- .5 Paints and coatings must be manufactured and transported in a manner that steps of processes, including disposal of waste products, will meet requirements of applicable governmental acts, by-laws and regulations including, for facilities located in Canada, Fisheries Act and Canadian Environmental Protection Act (CEPA).
- .6 Paints and coatings must not be formulated or manufactured with formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium or their compounds.
- .7 All paint materials will have good flowing and brushing properties and shall dry or cure free of blemishes, sags, air entrapment, etc.
- .8 Caulking and filling compounds will be as recommended by paint manufacturer.
- .9 Slip Resistant Additives (SRA): rubber aggregate or clean/washed silica sand for use with or as a component part of paint (usually floor/porch/stair enamel) on exterior horizontal surfaces as required to provide slip resistance. Where site applied, material mixed into paint and mixed constantly to keep material in suspension.

2.02 EQUIPMENT

- .1 Painting equipment: to best trade standards for type of product and application.
- .2 Spray-Painting equipment: of ample capacity, suited to the type and consistency of paint or coating being applied and kept clean in good working order at all times.

2.03 MIXING AND TINTING

- .1 Unless specified otherwise, all paints shall be ready-mixed and pre-tinted. Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.
- .2 Where thinner is used, addition not to exceed paint manufacturer's recommendations. Do not use kerosene or such organic solvents to thin water-based paints.
- .3 Thin paint for spraying in accordance with paint manufacturer's instructions. If directions are not on container, obtain instructions in writing from manufacturer and provide copy of instructions to MPDA Inspection Agency.
- .4 Catalyzed paint mixes shall be mixed in strict accordance with manufacturer's written instructions.

2.04 FINISHES AND COLOUR:

- .1 Unless specified otherwise, all exterior repainting work to be done in accordance with MPI Premium Grade requirements.
- .2 Colours shall be as selected by Departmental Representative and from a manufacturer's full range of colours.
- .3 Provide slip resistant additive to exterior painted stair treads and landings.

2.05 GLOSS/SHEEN RATINGS

- .1 Paint gloss: defined as sheen rating of applied paint, in accordance with following MPI gloss/sheen standard values:

Gloss Level Category	Unit at 60 Degrees	Units at 85 Degrees
G1 – Matte finish	0 to 5	Maximum 10
G2 – Velvet finish	0 to 10	10 to 35
G3 – Eggshell finish	10 to 25	10 to 35
G4 – Satin finish	20 to 35	Minimum 35
G5 – Semi-gloss finish	35 to 70	
G6 – Gloss finish	70 to 85	
G7 – High Gloss finish	More than 85	

- .2 Gloss level ratings of repainted surfaces to be selected by Departmental Representative unless indicated otherwise.

3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.02 EXAMINATION

- .1 Surfaces requiring repainting: inspected by painting contractor who will notify Departmental Representative in writing of defects or problems, prior to commencing repainting work, or after surface preparation if unseen substrate damage is discovered.
- .2 Where an assessed degree of surface degradation of DSD-1 to DSD-3 before preparation of surfaces for repainting is revealed to be DSD-4 after preparation, repair or replacement of such unforeseen defects discovered are to be corrected, as mutually agreed, before repainting is started.

3.03 PREPARATION

- .1 Perform preparation and operations for exterior painting in accordance with MPI requirements except where specified otherwise.
- .2 Apply paint materials in accordance with paint manufacturer's written application instructions.

- .3 Remove, clean and prepare exterior elements indicated to be repainted in accordance with MPI Maintenance Repainting Manual and Architectural Painting Specification Manual requirements. Refer to MPI Manual in regard to specific requirements and as follows:
 - .1 Remove dust, dirt, and surface debris by brushing, wiping with dry, clean cloths.
 - .2 Wash surfaces with a biodegradable detergent (and bleach where applicable) and clean warm water using a stiff bristle brush to remove dirt, oil and surface contaminants.
 - .3 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
 - .4 Allow surfaces to drain completely and to dry thoroughly.
 - .5 Use water-based cleaners in place of organic solvents where surfaces will be repainted using water based paints.
 - .6 For surfaces not containing lead or PCBs, clean exterior surfaces to ensure complete removal of all paint, stains, dirt and contaminants down to substrate. This work to be completed by qualified tradesman experienced in pressure water cleaning.
- .4 Clean metal surfaces to be repainted by removing rust, dirt, oil, grease and foreign substances in accordance with MPI requirements. Remove such contaminants from surfaces, pockets and corners to be repainted by brushing with clean brushes or brushing/vacuum cleaning as required.
- .5 Prevent contamination of cleaned surfaces by salts, acids, alkalis, corrosive chemicals, grease, oil and solvents before priming and between applications of remaining coats. Touch-up, spot prime, and apply primer, paint, or pre-treatment as soon as possible after cleaning and before deterioration occurs.
- .6 Pressure-cleaning or water hose cleaning will not be considered satisfactory. Allow sufficient drying time and test all surfaces using an electronic moisture meter before commencing work.
- .7 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects from previously painting (e.g. runs, and sags) that are visible from distance up to 1000 mm.
- .8 Remove all building attachments such as downspouts and signage as required to complete work. Store where directed by Department Representative. Reinstall once painting work complete.
- .9 Wood:
 1. All open miter joints and gaps in door frames are to be caulked with paint manufacturer's recommended caulking compound.
 2. Existing debris such as paint skins, etc are to be sanded or scraped from the surface prior to coating application. Raised wood fibers are to be scraped or sanded from the surface prior to finish coat application.
 3. Brush all bare wood joints at miter joints and cut-ends of lumber with specified MPI primer.
 4. Corroded nail heads shall be spot primed with an MPI approved anti-corrosive primer. Protruding nails to be removed or reset.
 5. Bare knots shall be sealed with the manufacturer's recommended knot/stain sealer.

3.04 EXISTING CONDITIONS

- .1 Prior to commencing work, examine existing exterior elements to be painted in accordance with ARTICLE 1.10 – AMBIENT CONDITIONS and report in writing to Departmental Representative damages, defects, unsatisfactory or unfavourable conditions of surfaces that will adversely affect this work.
- .2 No painting work to commence until such adverse conditions and defects have been corrected and surfaces and conditions are acceptable to Painting Subcontractor and Departmental Representative.
- .3 Degree of surface deterioration (DSD) to be assessed using MPI Identifiers and Assessment criteria indicated in the MPI Maintenance Repainting Manual. MPI DSD ratings and descriptions are as follows:

	<u>Condition Description</u>
DSD-0	Sound Surface (includes visual (aesthetic) defects that do not affect film's protective properties).
DSD-1	Slightly Deteriorated Surface (indicating fading: gloss reduction, slight surface contamination, minor pin holes and scratches).
DSD-2	Moderately Deteriorated Surface (small areas of peeling, flaking, slight cracking and staining).
DSD-3	Severely Deteriorated Surface (heavy peeling, flaking, cracking, checking, scratches, scuffs, abrasion, small holes and gouges).
DSD-4	Substrate Damage (repair or replacement of surface required).

3.05 PROTECTION

- .1 Re-painting of mechanical elements onsite is acceptable however must be done in controlled environment.
- .2 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore such surfaces as directed by Departmental Representative.
- .3 Protect factory finished products and equipment.
- .4 Protect general public and building occupants in and about the building.

3.06 APPLICATION

- .1 Do not commence work unless substrates and all environmental conditions are acceptable for the application of products.
- .2 Apply primer, paint or stain in accordance with MPI Painting Manual Premium Grade finish requirements unless otherwise specified.
- .3 Apply paint by method that is best suited for substrate being repainted using air sprayer. Conform to manufacturer's application instructions unless specified otherwise.
- .4 Spray Application:
 - .1 Provide and maintain equipment that is suitable for intended purpose, capable of properly atomizing paint to be applied, and equipped with suitable pressure regulators and gauges.

- .2 Keep paint ingredients properly mixed in containers during paint application either by intermittent agitation as frequently necessary.
- .3 Apply paint in uniform layer, with overlapping at edges of spray pattern.
- .4 Back roll spray applications and brush out runs and sags immediately.
- .5 Use brushes to work paint into cracks, crevices and places that are not adequately painted by spray.

- .5 Apply paint coats in a continuous manner and allow surfaces to dry and cure between coats for minimum time period as recommended by manufacturer. Minimum dry film thickness of coats not less than that recommended by manufacturer. Repaint thin spots or bare areas before next coat of paint is applied.

- .6 Apply primer and paint within an appropriate time frame after cleaning and preparation to prevent weathering or water staining of substrate or before environmental conditions encourage flash-rusting, rusting or contamination or when the manufacturer's paint specifications require earlier application.

- .7 Primer and paint coats specified are intended to cover surfaces satisfactorily when applied at proper consistency and in accordance with manufacturer's recommendation.

- .8 Tint each coat of paint progressively darker to enable confirmation of number of coats unless approved otherwise by MPDA Inspection Agency.

- .9 Where deep or bright colours are used, allow for the application of additional finish coats to achieve satisfactory results.

- .10 Sand and dust between coats to remove provide anchor for next coat and to remove surface defects such as runs and sags on existing and new coatings where applicable for surface texture.

- .11 Do not apply finishes on exterior surfaces that are not sufficiently dry. Unless manufacturer's directions state otherwise, each coat shall be sufficiently dry and hard before following coat is applied.

- .12 To avoid air entrapment in applied coats, apply materials in strict accordance with manufacturer's spread rates and application requirements.

- .13 Where touch-up painting is undertaken and found to be noticeable, the entire surface will require repainting from break to break or corner to corner.

3.07 PRIMING AND BACK PRIMING

- .1 New woodwork, which is to receive paint finish shall be primed with an MPI approved primer compatible with the finish system.
- .2 Back-prime all wood which is not exposed or painted.
- .3 Top and bottom edges of wood window frames exposed to the exterior shall be coated with the finish system.
- .4 Pre-finished metals shall be primed with MPI approved solvent based bonding primer where applicable.

3.08 FIELD QUALITY CONTROL / STANDARD OF ACCEPTANCE

- .1 All surfaces, preparation and paint applications shall be inspected by the MPDA Inspection Agency.
- .2 Painted exterior and interior surfaces shall be considered to lack uniformity and soundness if any of the following defects are apparent to the MPDA Inspection Agency and not limited to:
 1. Brush/roller/tracking, streaks, laps, runs, sags, drips, heavy stippling, hiding or shadowing by inefficient application methods, skipped or missed areas, and foreign materials in paint coatings.
 2. Damage due to touching before paint is sufficiently dry or any other contributory cause.
 3. Damage due to application on moist surfaces.
 4. Damage and contamination of paint due to wind-blown contaminants (dust, sand blast materials, salt spray, etc).
- .3 Painted surfaces shall be considered unacceptable if any of the following are evident under natural lighting conditions.
 - .1 Visible defects are evident on vertical surfaces when viewed at 90 degrees to the surface from a distance not less than 1000mm.
 - .2 Visible defects are evident on horizontal surfaces when viewed at 45 degrees to the surface from distance not less than 1000mm.
 - .3 Visible defects are evident on soffit and other overhead surfaces when viewed at 45 degrees to the surface.
 - .4 When the final coat on any surface exhibits a lack of uniformity of sheen across full surface area.
- .4 Painted and repainted surfaces rejected by the Departmental Representative or MPDA Inspection Agency shall be make good at the expense of the contractor.

3.09 CLEANING

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 Remove paint where spilled, splashed, splattered or sprayed as work progresses using means and materials that are not detrimental to affected surfaces.
- .3 Keep work area free from unnecessary accumulation of tools, equipment, surplus materials and debris.
- .4 Remove combustible rubbish materials and empty paint cans each day and safely dispose of same in accordance with requirements of authorities having jurisdiction.
- .5 Clean equipment and dispose of wash water used for water borne materials, solvents used for oil based materials as well as cleaning and protective materials (e.g. rags, drop cloths, and masking papers), paints, thinners, paint removers/strippers in accordance with the safety requirements of authorities having jurisdiction and as specified.
- .6 Recycle paint and coatings in excess of repainting requirements as specified.

3.10 RESTORATION

- .1 Contractor to re-install all temporarily removed items including wood boxes, window sashes, rain leaders and flashings.

3.11 EXTERIOR FINISH SCHEDULE:

- .1 Paint and repaint exterior surfaces in accordance with the following MPI Manual Requirements:

REX 5.1 Structural Steel & Metal

REX 5.1C W.B Light Industrial		Miscellaneous Metals		
Full-Prime	DSD 3	MPI 23	Surface Tolerant Primer	
1 st Coat		MPI 163	W.B Light Industrial	G5
2 nd Coat		MPI 163	W.B Light Industrial	G5

REX 6.2 Dimension Lumber

REX 6.2A Latex		Wood Siding		
Full-Prime	DSD 3	MPI 5	Alkyd Stain Blocker	
1st Coat		MPI 15	Exterior Latex	G3/4
2nd Coat		MPI 15	Exterior Latex	G3/4
REX 6.2B Solid Colour Stain W.B		Fencing		
Full-Prime	DSD 3	MPI 5	Alkyd Stain Blocker	
1st Coat		MPI 15	Solid Colour Stain W.B	N/A
2nd Coat		MPI 15	Solid Colour Stain W.B	N/A

REX 6.3 Dressed Lumber

REX 6.2J W.B Light Industrial		Window Sashes Window Frames Fascia Boards Corner Trims Doors/Frames Wood Louvers		
Full Prime	DSD 3	MPI 5	Alkyd Stain Blocker	
1st Coat		MPI 163	W.B Light Industrial	G5
2nd Coat		MPI 163	W.B Light Industrial	G5

REX 6.4 Wood Paneling

REX 6.2A Latex		Wall Panels		
Full-Prime	DSD 3	MPI 5	Alkyd Stain Blocker	
1st Coat		MPI 15	Exterior Latex	G3/4
2nd Coat		MPI 15	Exterior Latex	G3/4

END OF SECTION

APPENDIX 1

LEAD-CONTAINING PAINT AND LIMITED ASBESTOS SAMPLING

Gulf of Georgia Cannery
Moncton Street, Richmond, BC

FINAL REPORT



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Project No.:

1237-10616

Date:

March 26, 2013



Stantec

EXECUTIVE SUMMARY

Stantec Consulting Ltd. (Stantec) was retained by Public Works Government Services Canada (PWGSC) to conduct lead-containing paint and limited asbestos sampling at the Gulf of Georgia Cannery located on Moncton Street in Richmond BC (subject building).

The purpose of the assessment was to determine the presence (or absence), location and estimated quantities of lead-containing paints (LCPs) and/or asbestos-containing materials (ACMs) within areas that may be impacted by proposed renovation activities, to meet the requirements of the Canada Labour Code, Part II Occupational Health and Safety Regulations (Canada Labour Code) and *British Columbia's Occupational Health & Safety Regulation* (BC Reg. 296/97).

Based on Stantec's visual assessment and on the laboratory analyses performed on samples collected, LCPs and ACMs were identified within the subject building, in areas to be impacted by proposed renovations.

A summary of our findings is presented below. It should be noted that this summary is subject to the same limitations restrictions and limitations as presented in Section 4 (Assessment Limitations) and Section 7 (Closure). The information provided is to be read in conjunction with the remainder of this report.

Recommendations pertaining to the handling, removal, transportation and/or disposal of identified LCPs and ACMs are provided in Section 6 of this report.

Summary of Findings

Lead-Containing Paints

The following paints were identified as LCPs

- Green paint on east cannery building interior walls and window frames.
- Yellow paint on east cannery building interior walls and window frames.
- White paint on Vitamin oil building interior walls and ceiling.
- White paint on vitamin oil building exterior walls.
- Burgundy paint on cannery building exterior trim.
- Cream paint on cannery building interior ceiling and west wall.
- Purple paint on north storage sheds exterior trim.
- Burgundy paint on north cannery building exterior trim.
- Yellow paint on north end of cannery building exterior mechanical pipe.
- Silver paint on ice house upper interior walls.
- White paint on ice house lower interior walls.

It should also be noted that lead is expected to be present in the solder used on copper domestic pipes, is likely present in the caulking on bell fittings for cast iron drainage pipes and is expected to be present in electrical equipment (i.e., batteries for emergency lighting/signage).

Lead Leachate

Analytical results indicated that the representative sample collected (paint and substrate, sampled in a form presumed to be representative of waste generated during corrective action and/or removal of multiple types of lead-containing paints) would not create waste that would be leachable for lead in excess of acceptable landfill criteria.

Summary of Findings

Asbestos-Containing Materials (ACMs)

Through limited assessment and sampling, asbestos-containing cement panels were identified in the following locations:

- At the front entrance of the east wing (exterior - approximately 2,400 ft²)
 - On the east wall of the cannery building (exterior - approximately 200 ft²)
 - On the south wall of the dryer shed (exterior - approximately 2,000 ft²)
 - On the west wall of the dryer shed at the roof (exterior - approximately 600 ft²).
-

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1 INTRODUCTION

Stantec Consulting Ltd. (Stantec) was retained by Public Works Government Services Canada (PWGSC) to conduct lead-containing paint and limited asbestos sampling at the Gulf of Georgia Cannery located on Moncton Street in Richmond BC(subject building).

The purpose of the assessment was to determine the presence (or absence), location and estimated quantities of lead-containing paints (LCPs) and/or asbestos-containing materials (ACMs) within areas that may be impacted by proposed renovation activities, to meet the requirements of the Canada Labour Code, Part II Occupational Health and Safety Regulations (Canada Labour Code) and *British Columbia's Occupational Health & Safety Regulation* (BC Reg. 296/97).

Site work was completed within the subject building on March 11, 2013.

2 BACKGROUND

The subject building was reportedly constructed in stages between 1894 and 1964. These construction eras are consistent with dates when LCPs and ACMs were commonly used in construction.

Stantec understands that renovation activities are proposed to occur within the subject building, whereby many exterior and some interior painted surfaces will be affected, as follows.

- Corrective action and/or removal for exterior paints
- Corrective action and/or removal for interior paints in the vitamin oil building and ice house
- Renovations within the boiler house

Based on the above and in accordance with the requirements of the Canada Labour Code and BC Reg. 296/97 pertaining to identification and removal of hazardous building materials prior to renovation activities, PWGSC commissioned this assessment.

3 SCOPE AND METHODOLOGY

Keith Irwin and Zack Kranjec of Stantec conducted visual assessments within the subject building on March 11, 2013. Site work was conducted in general compliance with the requirements of BC Reg. 296/97.

Materials expected to be impacted by the proposed renovation activities, as outlined by the scope of work provided herein, within the subject building were visually examined to determine the suspected presence of LCPs and/or ACMs. Where building materials were suspected but not confirmed to contain lead (in paint), or asbestos, samples were collected for analysis to confirm or deny the presence of these hazardous materials. Based on analytical results, visually similar materials were referenced to specific analyzed samples to reduce the number of samples collected.

Additional background information and the methodology used for the determination of presence or absence of each specific hazardous material considered in this assessment are outlined in the following sections.

3.1 Lead-Containing Paints (LCPs)

The lead content of interior paint was limited to 0.5% by weight (5,000 parts per million, or "ppm") in 1976 under the Federal *Hazardous Products Act*. Recently, the *Hazardous Products Act* had reduced the criteria for surface coatings (including paint) to 600 mg/kg (600 ppm) to define them as "lead-containing" (this has since been reduced to 90 ppm). In addition, WorkSafe BC has compiled a manual titled "*Lead-Containing Paint and Coatings: Preventing Exposure in the Construction Industry*", (Lead Guideline) which defines a "lead-containing surface coating material" and sets out requirements for coatings with a lead content that exceeds 600 mg/kg (or 600 ppm). As such, Stantec will reference this value (600 ppm) in defining paints as "lead-containing".

Samples of suspected LCPs were collected from major paint applications, and were collected to substrate, where possible, in sufficient quantity to conduct analyses for total lead content. Samples collected were placed into separate, sealed, and labelled polyethylene bags, and submitted to EMSL for analyses of total lead content using Flame Atomic Absorption Spectrometry AAS (SW 846 3050B and 7420).

EMSL analytical laboratory is also accredited by the American Industrial Hygiene Association (AIHA) Environmental Lead Laboratory Approval Program.

3.1.1 Lead Leachate

As indicated in the British Columbia Hazardous Waste Regulation (BC Reg. 63/88), lead waste may be considered a toxic leachate (and require special disposal) if lead is in a dispersible form and its leachate contains greater than 5.0 milligrams per litre (mg/L) lead.

Based on the above, a representative sample of waste expected to be generated through alteration of painted surfaces identified for corrective action and/or removal throughout the subject building was collected, containing over 50 grams in weight. The sample was placed in a labelled plastic bag that was sealed and submitted to EMSL Canada Inc. of Mississauga, ON. Analysis of the sample was conducted by EMSL using Method 1311 Toxicity Characteristic Leaching Procedure (TCLP), described in US EPA Reg. 40CFR261 (Method EPA 200.8), Appendix II as recommended in BC Reg. 63/88.

3.2 Asbestos-Containing Materials (ACMs)

The common use of friable (materials which, when dry, can be easily crumbled or powdered by hand pressure) ACMs in construction generally ceased voluntarily in the mid-1970s but was only banned through legislation by the late 1980s. Friable asbestos was used in many building products, primarily high temperature insulations, spray-applied structural fireproofing, and a material called vermiculite that was commonly used as block wall insulation and may be contaminated with asbestos fibres. Asbestos was also used in many non-friable manufactured products such as floor tiles, ceiling tiles, Transite™ cement products, and various other construction materials. Some cement products currently used in the construction of buildings may still contain asbestos.

The presence of asbestos in federal workplaces, and pertaining to federally regulated workers is governed by the Canada Labour Code. The presence of asbestos in the workplace in British Columbia pertaining to provincially regulated workers is governed by BC Reg. 296/97. As both federally regulated workers and provincially regulated workers (e.g., contractors) are expected to carry out work activities within the subject buildings, and as the provincial regulations are generally more prescriptive pertaining to asbestos (and generally include the requirements noted in the Canada Labour Code), this assessment was conducted to meet the requirements of the BC Reg. 296/97

According to the current version of BC Reg. 296/97, asbestos-containing material (ACM) means any material containing at least 0.5% asbestos, or vermiculite insulation with any asbestos.

Based on this criterion, samples of suspected ACMs were collected and submitted to EMSL Canada Inc. (EMSL) in Mississauga, Ontario for analysis of asbestos content using Polarized Light Microscopy (PLM) with dispersion staining, in accordance with the United States Environmental Protection Agency (EPA) 600/R-93/116 method.

A positive stop option was used during the laboratory analysis of the building materials suspected to contain asbestos. Multiple samples of visually similar material were collected and submitted for laboratory analysis. If the first sample of the set analyzed was identified to contain asbestos, further analysis of the subsequent samples was deemed to be unnecessary and not conducted.

EMSL's analytical laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

3.2.1 Asbestos Sampling Quality Assurance/Quality Control

Sampling activities pertaining to asbestos were conducted in accordance with Stantec's Safe Work Practices (SWPs), which take into account current provincial regulations pertaining to such work (i.e., sampling procedures, required number of samples, and laboratory analytical procedures).

Representative bulk samples were collected of accessible suspect ACMs in sufficient quantities for laboratory analyses. Suspect ACM samples were sealed in polyethylene zip-lock bags labelled with the sample number, suspect material description, and sample location. As part of sampling procedures, sampling tools were cleaned between sample collection events to avoid the potential for cross-contamination of samples.

Sample bags were compiled in order and placed into a single container accompanied with a Chain of Custody form outlining the project information, date, building location, number of samples, and sample description. Samples were submitted to the analytical laboratory in a sealed container via courier.

4 ASSESSMENT LIMITATIONS

This report reflects the observations made within accessed areas only and the results of analyses performed on specific materials sampled during the assessment. Analytical results reflect the sampled materials at the specific sample locations.

The limitations of this assessment pertaining to each of the considered hazardous building materials are outlined in the following sub-sections.

4.1 Lead-Containing Paints (LCPs)

Assessment for the presence of lead-containing paints was visual in nature, and was conducted pertaining to readily visible surfaces within accessible spaces of the subject building only. The presence of lead-containing paints in inaccessible areas not assessed includes, but is not limited to: ceiling spaces, wall cavities, crawlspaces, and buried materials.

Samples of suspected LCPs were collected within the subject building only from surfaces of major paint applications where visually different paint colours and/or types were identified and where paint applications were identified for corrective action and/or removal. Although the surfaces where samples were collected may be covered with more than one coat of paint, the paint samples are described by the surface (visible) colour only.

Attempts were made to represent all layers of paint in the samples collected. As analytical results are referenced to the surface paint colour only, the lead content of all painted surfaces similar to that represented by the surface paint colour will be presumed to be the same, regardless of differing sub-surface paints, if any.

Sampling and analysis for lead leachate was conducted where paint applications were identified for corrective action and/or removal. The lead leachate sample submitted was intended to represent a mixture of painted surfaces that would be removed and disposed of during the proposed renovation activities.

4.2 Asbestos-Containing Materials (ACMs)

As requested, assessment sampling associated with suspected ACMs was only conducted pertaining to building materials expected to be impacted during proposed renovation activities, as outlined herein. This assessment does not constitute a comprehensive ACM assessment for the subject building.

If encountered during renovation, demolition or other activities, any suspected ACMs not identified within this report should be presumed to contain asbestos and handled as such until otherwise proven, through analytical testing.

5 RESULTS

Floor plans showing bulk sample locations and locations of identified hazardous materials (where practical) are provided in **Appendix A**.

The results of the assessment for each of the considered hazardous materials are provided in the following sub-sections.

5.1 Lead-Containing Paints (LCPs)

Eighteen (18) paint chip samples of suspected LCPs were collected within the subject building and submitted to EMSL for analysis of lead content. A summary of the sample types, locations and analytical results is presented in Table 5.1.1, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is included in **Appendix B**.

**Table 5.1.1: Summary of Suspected LCP Bulk Samples
 Gulf of Georgia Cannery – Moncton Street, Richmond, BC**

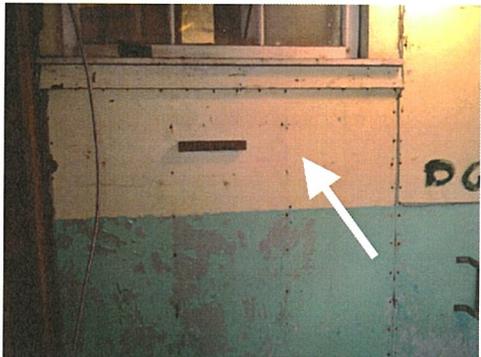
Sample Number	Paint Description	Location	Result (ppm)
PS-01	Purple	East equipment shelter exterior trim	< 90
PS-02	White	East equipment shelter exterior walls	< 90
PS-03	Green	East cannery building interior walls and window frames	7,200
PS-04	Yellow	East cannery building interior walls and window frames	5,800
PS-05	White	Vitamin oil building interior walls and ceiling	3,700
PS-06	White	Vitamin oil building exterior walls	9,500
PS-07	Burgundy	Cannery building exterior trim	6,400
PS-08	Red	Vitamin oil building front exterior trim and fence	< 90
PS-09	Cream	Cannery building interior ceiling and west wall	5,500
PS-10	White	South cannery building exterior walls	200
PS-11	Burgundy	South cannery building exterior trim	580
PS-12	Purple	Sheds 2 and 3 exterior trim	870
PS-13	Burgundy	North cannery building exterior trim (4 layers)	13,000
PS-14	White	Sheds 2 and 3 exterior walls	140
PS-15	Red	North cannery building exterior trim and fence	< 90
PS-16	Yellow	North end of cannery building exterior mechanical pipe	31,000
PS-17	Silver	Ice house upper interior walls	3,400
PS-18	White	Ice house lower interior walls	2,100

NOTE:

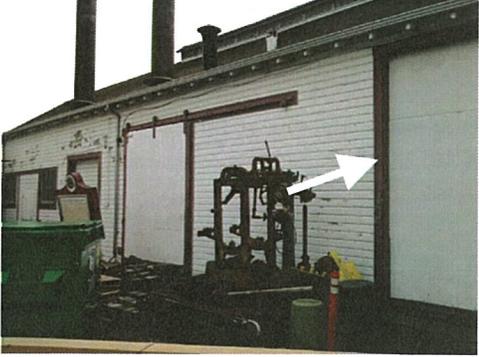
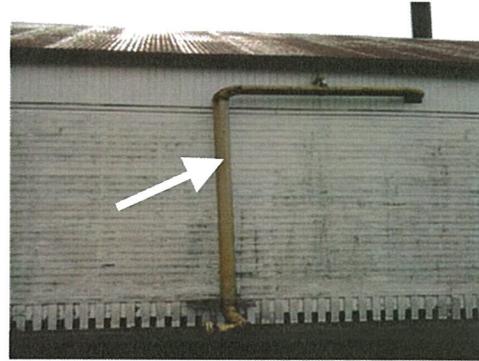
Yellow highlight and bolding indicates an Identified LCP.

Based on our observations and interpretations of suspected LCP sample analytical results, the materials presented in Table 5.1.2, below were identified as LCPs.

Table 5.1.2: Summary of Identified LCPs
Gulf of Georgia Cannery – Moncton Street, Richmond, BC

Lead-Containing Paint Description	Photo
<p>Green paint on east cannery building Interior walls and window frames.</p> <p>This paint was observed to be in poor condition (flaking and peeling).</p>	
<p>Yellow paint on east cannery building Interior walls and window frames.</p> <p>This paint was observed to be in good condition (minimal flaking, bubbling, and peeling).</p>	
<p>White paint on Vitamin oil building interior walls and ceiling.</p> <p>This paint was observed to be in good condition (minimal flaking, bubbling, and peeling).</p>	

Lead-Containing Paint Description	Photo
<p>White paint on vitamin oil building exterior walls. This paint was observed to be in poor condition (flaking and peeling).</p>	
<p>Burgundy paint on cannery building exterior trim. This paint was observed to be in poor condition (flaking and peeling).</p>	
<p>Cream paint on cannery building interior ceiling and west wall. This paint was observed to be in poor condition (flaking and peeling).</p>	

Lead-Containing Paint Description	Photo
<p>Purple paint on north storage sheds exterior trim. This paint was observed to be in poor condition (flaking and peeling).</p>	
<p>Burgundy paint on north cannery building exterior trim (4 layers). This paint was observed to be in poor condition (flaking and peeling).</p>	
<p>Yellow paint on north end of cannery building exterior mechanical pipe. This paint was observed to be in poor condition (flaking and peeling).</p>	

Lead-Containing Paint Description	Photo
<p>Silver paint on ice house upper interior walls. This paint was observed to be in poor condition (flaking and peeling).</p>	
<p>White paint on ice house lower interior walls. This paint was observed to be in good condition (minimal flaking, bubbling, and peeling).</p>	

5.1.1 Lead Leachate

One (1) sample presumed to be representative of waste generated during corrective action and/or removal of multiple types of lead-containing paints was collected and submitted to EMSL for analysis of leachable lead content.

Analytical results indicated that the representative sample collected would not create waste that would be leachable for lead in excess of acceptable landfill criteria (2.8 mg/L). A copy of the certificate of analysis provided by EMSL for the sample submitted is included in **Appendix B**.

5.2 Asbestos-Containing Materials (ACMs)

Stantec understands that previously identified asbestos-containing cement roof panels are present on the Dryer Shed. As this material is not expected to be impacted during the planned renovation activities, additional sampling and/or assessment of this material was not part of the scope of this assessment.

Stantec identified and sampled various suspected ACMs that are anticipated to be impacted by planned renovations, including the following:

- Cement panels
- Corrugated roofing/siding
- Gutter downspout mastic
- Pipe wrap
- Interior stucco

Twenty-one (21) samples of the above-noted suspected ACMs were collected within the subject building and submitted to EMSL for analysis of asbestos content and nature. A summary of the sample types, locations and analytical results is presented in Table 5.2.1, below. Copies of the certificates of analysis provided by EMSL for the suspected ACM samples submitted are included in **Appendix C**.

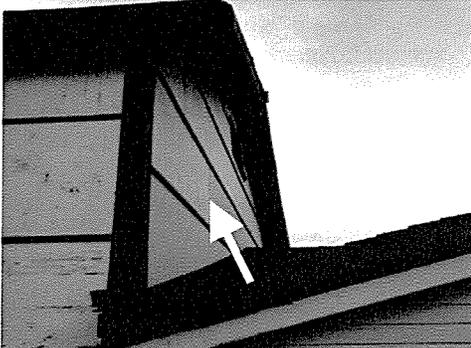
**Table 5.2.1: Summary of Suspected ACM Bulk Samples
 Gulf of Georgia Cannery – Moncton Street, Richmond, BC**

Sample Number	Material Description	Sample Location	Result
ST-01A	Boiler house stucco (patch) - White	Boiler house	None Detected
ST-01B	Boiler house stucco (patch) - White	Boiler house	None Detected
ST-01C	Boiler house stucco (patch) - White	Boiler house	None Detected
ST-02A	Boiler house stucco - Grey	Boiler house	None Detected
ST-02B	Boiler house stucco - Grey	Boiler house	None Detected
ST-02C	Boiler house stucco - Grey	Boiler house	None Detected
ST-02D	Boiler house stucco - Grey	Boiler house	None Detected
ST-02E	Boiler house stucco - Grey	Boiler house	None Detected
ST-02F	Boiler house stucco - Grey	Boiler house	None Detected
CP-01A	Cement panel	Front entrance exterior	20% Chrysotile
CP-01B	Cement panel	Front entrance exterior	Stop Positive
CP-01C	Cement panel	Front entrance exterior	Stop Positive
GM-01A	Gutter mastic – Black and soft	North storage sheds	None Detected
GM-01B	Gutter mastic – Black and soft	North storage sheds	None Detected
GM-01C	Gutter mastic – Black and soft	North storage sheds	None Detected
PW-01A	Pipe wrap - Black	Exterior northwest corner of cannery building	None Detected
PW-01B	Pipe wrap - Black	Exterior northwest corner of cannery building	None Detected
PW-01C	Pipe wrap - Black	Exterior northwest corner of cannery building	None Detected
CR-01A	Corrugated roofing/siding – Green	Exterior drying and bagging room	None Detected
CR-01B	Corrugated roofing/siding – Green	Exterior drying and bagging room	None Detected
CR-01C	Corrugated roofing/siding – Green	Exterior drying and bagging room	None Detected

Based on our observations of building construction (estimated vintage of interior finishes and uniformity of building material use) and on our interpretations of the results of suspected ACM samples collected, the materials presented in Table 5.2.2, below were identified as ACMs within subject building.

Table 5.2.2: Summary of Identified ACMs
Gulf of Georgia Cannery – Moncton Street, Richmond, BC

Identified ACM Description		Photo
Exterior cement panel at the front entrance of the east wing (approximately 2,400 ft ²), on the east wall of the cannery building (approximately 200 ft ²), on the south wall of the dryer shed (approximately 2,000 ft ²), and on the west wall of the dryer shed at the roof (approximately 600 ft ²).		
% Type	20% Chrysotile	
Friability	Non-friable	
Condition	Good	

Identified ACM Description	Photo
	

6 RECOMMENDATIONS

The recommendations pertaining to the pre-renovation requirements for each of the hazardous materials identified within the subject areas are presented in the sub-sections below.

6.1 Lead-Containing Paints (LCPs)

If LCPs are to be disturbed and/or removed, ensure compliance with the following:

- The occupational exposure control requirements of BC Reg. 296/97, including the provisions of the Lead Guideline
- The disposal requirements of the *British Columbia Hazardous Waste Regulation* (BC Reg. 63/88)
- The transportation requirements of the *Federal Transportation of Dangerous Goods Regulation*

Corrective action or remedial work on paint applications containing any concentration of lead should be undertaken in a manner so as to avoid generating fine particulate matter or dust (i.e., avoid sanding). Airborne lead dust or fumes should not exceed the BC Reg. 296/97 8-hour Occupational Exposure Limit (OEL) of 0.05 milligram per cubic metre (mg/m^3) during the removal of paints and products containing any concentration of lead. The use of personal protective equipment is recommended to reduce the potential for over-exposure to lead dust.

6.1.1 Lead Leachate

Sampling and analysis indicate that representative waste material coated with the paint applications identified for corrective action and/or removal throughout the subject building do not contain lead in dispersible form such that the leachate contains greater than 5.0 mg/L lead. As such, waste associated with the proposed renovation activities is not considered hazardous, with respect to lead leachate.

6.2 Asbestos-Containing Materials (ACMs)

Identified ACMs that will be impacted by renovation activities should be handled in accordance with the procedures outlined in the current version of the WorkSafe BC document entitled "Safe Work Practices for Handling Asbestos", by a qualified asbestos abatement contractor.

If materials that are visually similar to identified ACMs are discovered within the subject building in locations not outlined in this report, these materials should be considered as asbestos-containing and handled as such, unless proven otherwise, through analytical testing.

If encountered during renovation activities, any suspected ACMs not accessible and/or identified during this assessment should be considered as asbestos-containing and handled as such, unless proven otherwise, through analytical testing.

Ensure asbestos containing waste is handled, stored, and disposed of in accordance with the requirements of the *Federal Transportation of Dangerous Goods Regulation* and the *British Columbia Hazardous Waste Regulation* (BC Reg. 63/88).

7 CLOSURE

This report has been prepared by Stantec for the sole benefit of PWGSC. This report may not be relied upon by any other person or entity without the express written consent of Stantec and PWGSC.

Any use that a third party makes of this report, or any reliance on decisions to be made based on it, is the responsibility of such third parties. Stantec accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

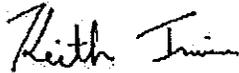
The conclusions presented represent the best judgment of the assessor based on current environmental standards and the site conditions observed on the date cited within this report. This report is based on, and limited by, circumstances and conditions stated herein, and on information available at the time of preparation of the report. Due to the limited nature of the investigation and the limited data available, Stantec cannot warrant against undiscovered environmental liabilities. It is possible that additional, concealed hazardous materials may become evident during renovation and/or demolition activities within the subject areas.

If any conditions become apparent that differ significantly from our understanding of conditions as presented in this report, we request that we be notified immediately to reassess the conclusions provided herein.

We trust that the report meets your current requirements. Should you have any questions or concerns regarding the above, please do not hesitate to contact the undersigned.

Respectfully submitted,

Stantec Consulting Ltd.



Keith Irwin, Dipl. Tech.
Environmental Technologist

Reviewed by:



Sean Brigden, B.Sc., P.B.Dipl.
Senior Reviewer

KI/SB/nlb

Lead-Containing Paint and Limited Asbestos Sampling
Gulf of Georgia Cannery
Moncton Street, Richmond, BC
Final Report



APPENDIX A

Floor Plans

Lead-Containing Paint and Limited Asbestos Sampling
Gulf of Georgia Cannery
Moncton Street, Richmond, BC
Final Report



APPENDIX B

Analytical Certificates – Paint Samples for Lead (Total and Leachate)



EMSL Canada Inc.

10 Falconer Drive, Unit #3, Mississauga, ON L5N 3L8
Phone/Fax: 289-997-4602 / (289) 997-4607
<http://www.emsl.com> torontolab@emsl.com

EMSL Canada Or 551301463
CustomerID: 55JACQ30L
CustomerPO: 123710616.200
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
1100- 111 Dunsmuir Street
Vancouver, BC V6B 6A3

Phone: (604) 696-8272
Fax:
Received: 03/13/13 10:13 AM
Collected:

Project: 123710616 TASK 200

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B*/7000B)

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
PS-01 Site: EAST EQUIPMENT SHELTER EXTERIOR TRIM Desc: PURPLE	0001		3/13/2013	<90 ppm
PS-02 Site: EAST EQUIPMENT SHELTER EXTERIOR WALLS Desc: WHITE	0002		3/13/2013	<90 ppm
PS-03 Site: EAST CANNERY BUILDING INTERIOR WALLS & WINDOW SILL Desc: GREEN	0003		3/13/2013	7200 ppm
PS-04 Site: EAST CANNERY BUILDING INTERIOR WALLS Desc: YELLOW	0004		3/13/2013	5800 ppm
PS-05 Site: VITAMIN OIL BUILDING INTERIOR WALLS Desc: WHITE	0005		3/13/2013	3700 ppm
PS-06 Site: VITAMIN OIL BUILDING EXTERIOR WALLS Desc: WHITE	0006		3/13/2013	9500 ppm
PS-07 Site: EXTERIOR TRIM CANNERY BUILDNG Desc: BURGUNDY	0007		3/13/2013	6400 ppm
PS-08 Site: VITAMIN OIL BUILDING FRONT EXTERIOR TRIM & FENCE Desc: RED	0008		3/13/2013	<90 ppm
PS-09 Site: INTERIOR CEILING & WEST WALL OF Desc: CREAM	0009		3/13/2013	5500 ppm
PS-10 Site: SOUTH CANNERY BUILDING EXTERIOR WALLS Desc: WHITE	0010		3/13/2013	200 ppm

Kevin Pang
or other approved signatory

Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. The QC data associated with these results included in this report meet the method QC requirements, unless specifically indicated otherwise. Unless noted, results in this report are not blank corrected. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. * slight modifications to methods applied. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request.
Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 03/13/2013 17:58:24



EMSL Canada Inc.

10 Falconer Drive, Unit #3, Mississauga, ON L5N 3L8
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EMSL Canada Or 551301463
CustomerID: 55JACQ30L
CustomerPO: 123710616.200
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
1100- 111 Dunsmuir Street
Vancouver, BC V6B 6A3

Phone: (604) 696-8272
Fax:
Received: 03/13/13 10:13 AM
Collected:

Project: 123710616 TASK 200

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B*/7000B)

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
PS-11 Site: SOUTH CANNERY BUILDING EXTERIOR TRIM Desc: BURGUNDY	0011		3/13/2013	580 ppm
PS-12 Site: NORTH STORAGE SHEDS EXTERIOR TRIM Desc: PURPLE	0012		3/13/2013	870 ppm
PS-13 Site: NORTH CANNERY BUILDING EXTERIOR TRIM (4 LAYERS) Desc: BURGUNDY	0013		3/13/2013	13000 ppm
PS-14 Site: NORTH STORAGE SHEDS EXTERIOR WALLS Desc: WHITE	0014		3/13/2013	140 ppm
PS-15 Site: NORTH CANNERY BUILDING EXTERIOR TRIM & FENCH Desc: RED	0015		3/13/2013	<90 ppm
PS-16 Site: EXTERIOR MECHANICAL PIPE AT NORTH END OF Desc: YELLOW	0016		3/13/2013	31000 ppm
PS-17 Site: ICE HOUSE UPPER INTERIOR WALLS Desc: SILVER	0017		3/13/2013	3400 ppm
PS-18 Site: ICE HOUSE LOWER INTERIOR WALLS Desc: WHITE	0018		3/13/2013	2100 ppm

Kevin Pang
or other approved signatory

Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. The QC data associated with these results included in this report meet the method QC requirements, unless specifically indicated otherwise. Unless noted, results in this report are not blank corrected. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. * slight modifications to methods applied. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request.
Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 03/13/2013 17:58:24



EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

Phone: (856) 303-2500 Fax: (856) 858-4571 Email: jsmith@emsl.com

Attn:

Kevin Pang
EMSL Toronto QC
10 Falconer Drive Unit #3
Mississauga, ON L5N 3L8

3/20/2013

Phone: (289) 997-4602
Fax: (289) 997-4607

The following analytical report covers the analysis performed on samples submitted to EMSL Analytical, Inc. on 3/18/2013. The results are tabulated on the attached data pages for the following client designated project:

Stantec/123710616 Task 200

The reference number for these samples is EMSL Order #011301059. Please use this reference when calling about these samples. If you have any questions, please do not hesitate to contact me at (856) 303-2500.

Reviewed and Approved By:

Julie Smith - Laboratory Director



The test results contained within this report meet the requirements of NELAC and/or the specific certification program that is applicable, unless otherwise noted.
NELAP Certifications: NJ 03036, NY 10872, PA 68-00367

The sample amount provided to the laboratory for TCLP analysis was less than the recommended minimum amount of 100 grams (EPA SW-846 Method 1311).

The samples associated with this report were received in good condition unless otherwise noted. This report relates only to those items tested as received by the laboratory. The QC data associated with the sample results meet the recovery and precision requirements established by the NELAP, unless specifically indicated. All results for soil samples are reported on a dry weight basis, unless otherwise noted. This report may not be reproduced except in full and without written approval by EMSL Analytical, Inc.

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077
 Phone/Fax: (856) 303-2500 / (856) 858-4571
<http://www.emsl.com> jsmith@emsl.com

EMSL Order: 011301059
 CustomerID: EMSL55
 CustomerPO: 551301551
 ProjectID:

Attn: **Kevin Pang**
EMSL Toronto QC
10 Falconer Drive Unit #3
Mississauga, ON L5N 3L8

Phone: (289) 997-4602
 Fax: (289) 997-4607
 Received: 03/18/13 9:10 AM
 Collected: 1/11/2013

Project: **Stantec/123710616 Task 200**

Analytical Results

<i>Client Sample Description</i>		<i>Collected:</i>		<i>Lab ID:</i>	
P-01	Paint waste chips - mix	1/11/2013		0001	

<i>Method</i>	<i>Parameter</i>	<i>Result</i>	<i>RL</i>	<i>Units</i>	<i>Prep Date</i>	<i>Analyst</i>	<i>Analysis Date</i>	<i>Analyst</i>
TCLP 1311/6010C	Lead	2.8	0.10	mg/L	3/19/2013	BE	3/19/2013	JR

Definitions:

ND - indicates that the analyte was not detected at the reporting limit
 RL - Reporting Limit

Lead-Containing Paint and Limited Asbestos Sampling
Gulf of Georgia Cannery
Moncton Street, Richmond, BC
Final Report



APPENDIX C

Analytical Certificates - Suspected ACM Samples



EMSL Canada Inc.

10 Falconer Drive, Unit #3 Mississauga, ON L5N 3L8
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<http://www.emsl.com> / torontolab@emsl.com

EMSL Canada Order 551301465
 Customer ID: 55JACQ30L
 Customer PO: 123710616.200
 Project ID:

Attn: Keith Irwin
 Stantec Consulting, Ltd.
 1100- 111 Dunsmuir Street
 Vancouver, BC V6B 6A3

Phone: (604) 696-8272
Fax:
Collected:
Received: 3/13/2013
Analyzed: 3/13/2013

Proj: 123710616 TASK 200

Test Report: Asbestos Analysis in Bulk Material for Occupational Health and Safety British Columbia Regulation 188/2011 via EPA 600/R-93/116 Method

Client Sample ID: ST-01A **Lab Sample ID:** 551301465-0001
Sample Description: BOILER HOUSE/BOILER HOUSE STUCCO (PATCH) - WHITE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Gray	0%	100%	None Detected	

Client Sample ID: ST-01B **Lab Sample ID:** 551301465-0002
Sample Description: BOILER HOUSE/BOILER HOUSE STUCCO (PATCH) - WHITE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Gray	0%	100%	None Detected	

Client Sample ID: ST-01C **Lab Sample ID:** 551301465-0003
Sample Description: BOILER HOUSE/BOILER HOUSE STUCCO (PATCH) - WHITE

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Gray/White/Various	0%	100%	None Detected	

Client Sample ID: ST-02A **Lab Sample ID:** 551301465-0004
Sample Description: BOILER HOUSE/BOILER HOUSE STUCCO - GREY

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Gray	0%	100%	None Detected	

Client Sample ID: ST-02B **Lab Sample ID:** 551301465-0005
Sample Description: BOILER HOUSE/BOILER HOUSE STUCCO - GREY

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Gray	0%	100%	None Detected	

Client Sample ID: ST-02C **Lab Sample ID:** 551301465-0006
Sample Description: BOILER HOUSE/BOILER HOUSE STUCCO - GREY

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Gray	0%	100%	None Detected	

Client Sample ID: ST-02D **Lab Sample ID:** 551301465-0007
Sample Description: BOILER HOUSE/BOILER HOUSE STUCCO - GREY

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Gray	0%	100%	None Detected	



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Phone/Fax: 289-997-4602 / (289) 997-4607
<http://www.emsl.com> / torontolab@emsl.com

EMSL Canada Order 551301465
Customer ID: 55JACQ30L
Customer PO: 123710616.200
Project ID:

Test Report: Asbestos Analysis in Bulk Material for Occupational Health and Safety British Columbia Regulation 188/2011 via EPA 600/R-93/116 Method

Client Sample ID: ST-01E **Lab Sample ID:** 551301465-0008
Sample Description: BOILER HOUSE/BOILER HOUSE STUCCO - GREY

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Gray/White	0%	100%	None Detected	

Client Sample ID: ST-01F **Lab Sample ID:** 551301465-0009
Sample Description: BOILER HOUSE/BOILER HOUSE STUCCO - GREY

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Gray/White	0%	100%	None Detected	

Client Sample ID: CP-01A **Lab Sample ID:** 551301465-0010
Sample Description: FRONT ENTRANCE EXTERIOR/CEMENT PANEL

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Gray/White	0%	80%	20% Chrysotile	

Client Sample ID: CP-01B **Lab Sample ID:** 551301465-0011
Sample Description: FRONT ENTRANCE EXTERIOR/CEMENT PANEL

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013					Stop Positive (Not Analyzed)

Client Sample ID: CP-01C **Lab Sample ID:** 551301465-0012
Sample Description: FRONT ENTRANCE EXTERIOR/CEMENT PANEL

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013					Stop Positive (Not Analyzed)

Client Sample ID: GM-01A **Lab Sample ID:** 551301465-0013
Sample Description: NORTH STORAGE SHEDS/GUTTER MASTIC - BLACK AND SOFT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Black	0%	100%	None Detected	

Client Sample ID: GM-01B **Lab Sample ID:** 551301465-0014
Sample Description: NORTH STORAGE SHEDS/GUTTER MASTIC - BLACK AND SOFT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Black	0%	100%	None Detected	

Client Sample ID: GM-01C **Lab Sample ID:** 551301465-0015
Sample Description: NORTH STORAGE SHEDS/GUTTER MASTIC - BLACK AND SOFT

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Black	0%	100%	None Detected	



EMSL Canada Inc.

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EMSL Canada Order 551301465
Customer ID: 55JACQ30L
Customer PO: 123710616.200
Project ID:

Test Report: Asbestos Analysis in Bulk Material for Occupational Health and Safety British Columbia Regulation 188/2011 via EPA 600/R-93/116 Method

Client Sample ID: PW-01A **Lab Sample ID:** 551301465-0016

Sample Description: EXTERIOR NORTHWEST CORNER OF CANNERY BUILDING/PIPE WRAP - BLACK

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Black	10%	90%	None Detected	

Client Sample ID: PW-01B **Lab Sample ID:** 551301465-0017

Sample Description: EXTERIOR NORTHWEST CORNER OF CANNERY BUILDING/PIPE WRAP - BLACK

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Black	10%	90%	None Detected	

Client Sample ID: PW-01C **Lab Sample ID:** 551301465-0018

Sample Description: EXTERIOR NORTHWEST CORNER OF CANNERY BUILDING/PIPE WRAP - BLACK

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Various/Black	30%	70%	None Detected	

Client Sample ID: CR-01A **Lab Sample ID:** 551301465-0019

Sample Description: EXTERIOR DRYING AND BAGGING ROOM/CORRUGATED ROOFING/SIDING - GREEN

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Gray/Clear	65%	35%	None Detected	

Client Sample ID: CR-01B **Lab Sample ID:** 551301465-0020

Sample Description: EXTERIOR DRYING AND BAGGING ROOM/CORRUGATED ROOFING/SIDING - GREEN

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Gray/Clear	65%	35%	None Detected	

Client Sample ID: CR-01C **Lab Sample ID:** 551301465-0021

Sample Description: EXTERIOR DRYING AND BAGGING ROOM/CORRUGATED ROOFING/SIDING - GREEN

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/13/2013	Various	70%	30%	None Detected	

Analyst(s)

Alice Feng PLM (13)
Kevin Pang PLM (6)

Kevin Pang
or other Approved Signatory

Any questions please contact Kevin Pang.

None Detected = <0.5%. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP of any agency of the U.S. Government.
Samples analyzed by EMSL Canada Inc. Mississauga, ON NVLAP Lab Code 200877-0
Initial report from: 03/13/2013 19:53:14

The Gulf of Georgia Cannery – Building Envelope Remediation
Project No.: R.060702.001
Issued for Tender – April 24, 2014

APPENDIX 2



Stantec Consulting Ltd.
1100 - 111 Dunsmuir Street
Vancouver BC V6B 6A3
Tel: (604) 696-8000
Fax: (604) 696-8100

Stantec

VIA EMAIL

July 5, 2013

Project No: 1237-10616.300

Public Works and Government Services Canada
Environmental Services, Pacific Region
219 – 800 Burrard Street
Vancouver, BC V6Z 09B

Attention: Tom Dunphy

Dear Mr. Dunphy:

**Reference: Assessment of PCB and Lead Content in Paint
Gulf of Georgia Cannery
Moncton Street, Richmond, BC**

1 INTRODUCTION

Stantec Consulting Ltd. (Stantec) was retained by Public Works and Government Services Canada (PWGSC) to conduct an assessment of PCB and lead content in various paints at the Gulf of Georgia Cannery located on Moncton Street in Richmond, British Columbia (subject facility).

The purpose of the project was to assess the PCB and lead content of various paints within areas that may be impacted by proposed renovation activities, such that work can be planned to proceed in accordance with applicable occupational health and safety regulations and applicable environmental protection regulations, to meet the requirements of the *Canada Labour Code, Part II Occupational Health and Safety Regulations* (Canada Labour Code), *British Columbia's Occupational Health & Safety Regulation* (BC Reg. 296/97) and *PCB Regulations* (SOR/2008-273).

The hazardous materials considered during this assessment included lead including lead-containing paints (LCPs) and polychlorinated biphenyls (PCBs) in paints.

2 BACKGROUND

Stantec previously conducted lead-containing paint and limited asbestos sampling at the subject facility and identified asbestos-containing materials (ACMs) and LCPs in the following report:

- Stantec Report 123710616 "*Lead-Containing Paint and Limited Asbestos Sampling, Gulf of Georgia Cannery, Moncton Street, Richmond, BC*" dated March 26, 2013 (Initial Assessment)

Stantec

Public Works and Government Services Canada
Attention: Tom Dunphy
Project No: 1237-10616.300

July 5, 2013
Page 2 of 7
Final Report

Reference: Assessment of PCB and Lead Content in Paint
Gulf of Georgia Cannery
Moncton Street, Richmond, BC

Subsequent to the completion of the Initial Assessment, questions were raised as to the potential for PCB-containing paints to have been used on the subject building, given its proximity to the mouth of the Fraser River/Strait of Georgia, and the understanding that paints used in marine applications have been known to contain PCBs.

As such, and as a measure of diligence in gathering sufficient information to plan the renovation project in accordance with applicable occupational health and safety regulations (i.e. Canada Labour Code, Part II Occupational Health and Safety Regulations [Canada Labour Code], *British Columbia's Occupational Health & Safety Regulation* [BC Reg. 296/97]) and applicable environmental protection regulations (i.e. British Columbia's Hazardous Waste Regulation [BC Reg. 63/88] and the Federal *PCB Regulations* [SOR/2008-273], this additional sampling was requested.

3 SCOPE OF WORK

Zack Kranjec of Stantec conducted a visual assessment within the subject facility on June 19, 2013. Site work was conducted in general compliance with the requirements of BC Reg. 296/97.

Materials expected to be impacted by the proposed renovation activities, as outlined by the scope of work provided herein, were visually examined to determine the suspected presence of lead-containing paints (LCPs) if additional information was required to supplement the Initial Assessment, as well as PCBs in paint. Where building materials were suspected but not confirmed to contain lead and/or PCBs (in paint), samples were collected for analysis to confirm or deny the presence of these hazardous materials. Based on analytical results, visually similar materials were referenced to specific analyzed samples to reduce the number of samples collected.

Additional background information and the methodology used for the determination of presence or absence of each specific hazardous material considered in this assessment are outlined in the following sections.

3.1 Lead

The lead content of interior paint was limited to 0.5% by weight (5,000 parts per million, or "ppm") in 1976 under the federal *Hazardous Products Act*. Recently, the *Hazardous Products Act* had reduced the criteria for surface coatings (including paint) to 600 mg/kg (600 ppm) to define them as "lead-containing" (this has since been reduced to 90 ppm). In addition, WorkSafeBC has compiled a manual titled *Lead-Containing Paint and Coatings: Preventing Exposure in the Construction Industry*, (Lead Guideline) which defines a "lead-containing surface coating material" and indicates that "...the improper removal of lead paint containing 600 mg/kg lead results in airborne lead concentrations that exceed half of the exposure limit"... As such, Stantec will reference this value (600 ppm) in defining paints as "lead-containing".

Samples of suspected LCPs were collected from major paint applications, and were collected to substrate, where possible, in sufficient quantity to conduct analyses for total lead content. Samples

Stantec

Public Works and Government Services Canada
Attention: Tom Dunphy
Project No: 1237-10616.300

July 5, 2013
Page 3 of 7
Final Report

Reference: Assessment of PCB and Lead Content in Paint
Gulf of Georgia Cannery
Moncton Street, Richmond, BC

collected were placed into separate, sealed, and labeled polyethylene bags, and submitted to EMSL for analyses of total lead content using Flame Atomic Absorption Spectrometry AAS (SW 846 3050B and 7420).

EMSL analytical laboratory is also accredited by the AIHA Environmental Lead Laboratory Approval Program.

3.2 Polychlorinated Biphenyls

Part 2, sections 5 and 6 of the *PCB Regulations* (SOR/2008-273) states that, no person shall release PCBs into the environment in a concentration of:

- 2 mg/kg or more for a liquid containing PCBs
- 50 mg/kg or more for a solid containing PCBs
 - The 50 mg/kg criteria for a solid will be used to compare to the paint chip samples collected for total content of PCBs.

Based on the above, samples of paints suspected to contain PCBs were collected from major paint applications, and were collected to substrate, where possible, in sufficient quantity to conduct analyses for total content of PCBs. Samples collected were placed into separate, sealed, and labeled polyethylene bags, and submitted to EMSL for analyses of total content of PCBs in Paint Chips via EPA SW 846 3540C/8082A.

4 LIMITATIONS

This report reflects the observations made within accessed areas of the subject area and the results of analyses performed on specific materials sampled during the assessment. Analytical results reflect the sampled materials at the specific sample locations.

The limitations of this assessment pertaining to each of the considered hazardous materials are outlined in the following sub-sections.

4.1 Lead

Samples of suspected LCPs were collected within the subject area only from surfaces of major paint applications where visually different paint colours and/or types were identified, for applications that required information supplemental to that provided in the Initial Assessment. Although the surfaces where samples were collected may be covered with more than one coat of paint, the paint samples are described by the surface (visible) colour only.

Attempts were made to represent all layers of paint in the samples collected. As analytical results are referenced to the surface paint colour only, the lead content of all painted surfaces similar to that represented by the surface paint colour will be presumed to be the same, regardless of differing sub-surface paints, if any.

Reference: **Assessment of PCB and Lead Content in Paint**
Gulf of Georgia Cannery
Moncton Street, Richmond, BC

4.2 Polychlorinated Biphenyls

Samples of paints suspected to contain PCBs were collected at the subject facility only from surfaces of major paint applications where visually different paint colours and/or types were identified. Although the surfaces where samples were collected may be covered with more than one coat of paint, the paint samples are described by the surface (visible) colour only.

Attempts were made to represent all layers of paint in the samples collected. As analytical results are referenced to the surface paint colour only, the lead content of all painted surfaces similar to that represented by the surface paint colour will be presumed to be the same, regardless of differing sub-surface paints, if any.

5 RESULTS

The results of the assessment for each of the considered hazardous materials are provided in the following sub-sections.

5.1 Lead

Two paint chip samples were obtained from the exterior of the main structure (including shed 1), where suspected lead-containing white paint was observed, as results from the Initial Assessment pertaining to exterior white paint on the main structure yielded inconsistent results (< 90 ppm on the east equipment shelter, 9,500 ppm on the vitamin oil building).

A summary of the sample types, locations and analytical results of the additional samples collected is presented in Table 5.3, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is included in **Appendix A**.

Table 5.1: Suspected LCP Sample Collection and Analysis Summary
Gulf of Georgia Cannery, Moncton Street, Richmond, BC
June 19, 2013

Sample No.	Material Description	Sample Location	Result (Lead – ppm)
PB-01	White colour paint	North exterior wall of cannery building	12,000
PB-02	White colour paint	North exterior wall of shed 1	14,000

NOTE:

Yellow highlight and bolding indicates an identified LCP.

Analysis of the paint chip samples submitted indicated that the white paint is considered to be lead-containing in the areas sampled as part of this assessment. As three of four samples of the white paint on the exterior of the main structure have indicated that this paint is lead-containing, and as visual distinction between lead-containing and non-lead-containing paint on the exterior of the main

Reference: **Assessment of PCB and Lead Content in Paint**
Gulf of Georgia Cannery
Moncton Street, Richmond, BC

structure is not practical, white paint on the exterior of the main structure (including shed 1) should be considered lead-containing.

5.2 Polychlorinated Biphenyls

Six paint chip samples were obtained from the subject facility, representative of the major paint applications, and were submitted for analysis of PCB content. A summary of the sample types, locations and analytical results is presented in Table 5.1, below. A copy of the certificate of analysis provided by EMSL for the suspected PCBs paint samples submitted is included in **Appendix B**.

Table 5.1: Suspected PCBs in Paint Sample Collection and Analysis Summary
Gulf of Georgia Cannery, Moncton Street, Richmond, BC
June 19, 2013

Sample No.	Material Description	Sample Location	Result (PCBs – mg/kg)
PCB-01	White colour paint	North side of cannery building, exterior wall	2.2 (Aroclor-1248)
PCB-02	Burgundy colour paint	North side of cannery building, door to boiler house	4.9 (Aroclor-1248)
PCB-03	Purple colour paint	East side of shed 2, exterior trim	Not detected
PCB-04	Yellow colour paint	North side of shed 1, exterior mechanical pipe	Not detected
PCB-06	Burgundy colour paint	West side of cannery building, exterior trim	Not detected
PCB-07	Burgundy colour paint	West side of cannery building, exterior trim	Not detected

Analysis of the paint chip samples submitted indicated that none contain PCBs in excess of 50 mg/kg (applicable criteria for a solid waste material), and that PCBs were present in concentrations less than the analytical detection limits in the majority of the samples collected.

6 RECOMMENDATIONS

6.1 Lead

If lead-containing paints are to be disturbed and/or removed during renovation activities, ensure compliance with the following:

- The occupational exposure control requirements of the Canada Labour Code and BC Reg. 296/97, including the Lead Guideline

Reference: **Assessment of PCB and Lead Content in Paint**
Gulf of Georgia Cannery
Moncton Street, Richmond, BC

- The disposal requirements of the *British Columbia Hazardous Waste Regulation (BC Reg. 63/88)*
- The transportation requirements of the *Federal Transportation of Dangerous Goods Regulation*

6.2 Polychlorinated Biphenyls

As the paints sampled at the subject facility were identified to contain concentrations of PCBs less than the prescribed criteria for PCBs in a solid, and/or less than the analytical detection limits, no recommendations have been developed.

7 CLOSURE

This report has been prepared by Stantec Consulting Ltd. for the sole benefit of Public Works and Government Services Canada. This report may not be relied upon by any other person or entity without the express written consent of Public Works and Government Services Canada.

Any use that a third party makes of this report, or any reliance on decisions to be made based on it, is the responsibility of such third parties. Stantec Consulting Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The conclusions presented represent the best judgment of the assessor based on current environmental standards and the site conditions observed on the date cited within this report. Due to the nature of the investigation and the limited data available, Stantec Consulting Ltd. cannot warrant against undiscovered environmental liabilities. It is possible that additional, concealed hazardous materials may become evident during renovation and/or demolition activities within the subject facility.

If any conditions become apparent that differ significantly from our understanding of conditions as presented in this report, we request that we be notified immediately to reassess the conclusions provided herein.

Stantec

Attention: Tom Dunphy
Project No: 1237-10616.300

July 5, 2013
Page 7 of 7
Final Report

Reference: **Assessment of PCB and Lead Content in Paint**
Gulf of Georgia Cannery
Moncton Street, Richmond, BC

We trust that the report meets your current requirements. Should you have any questions or concerns regarding the above, please do not hesitate to contact the undersigned.

Respectfully submitted,
Stantec Consulting Ltd.

Reviewed by:



Zack Kranjec, Dipl. T.
Project Technologist, Indoor Environments



Sean Brigden, B.Sc., P.B.Dipl.
Project Manager, Indoor Environments

Appendix A: Certificates of Analysis – Suspected LCP Bulk Samples
Appendix B: Certificates of Analysis – Suspected PCBs in Paint Bulk Samples

ZK/SB/bd

File Name and Path: [\\cd1209-02\workgroup\1237\active\123710600 -
10699\123710616\report\pcb_paint_sampling\trp_123710616_gog_cannery_pcbs_2013_0705_final.docx



APPENDIX A

**Certificates of Analysis –
Suspected LCP Bulk Samples**



EMSL Canada Inc.

10 Falconer Drive, Unit #3, Mississauga, ON L5N 3L8
Phone/Fax: 289-997-4602 / (289) 997-4607
<http://www.emsl.com> torontolab@emsl.com

EMSL Canada Or 551303910
CustomerID: 55JACQ30L
CustomerPO: 123710616.300
ProjectID:

Attn: **Zack Kranjec**
Stantec Consulting, Ltd.
1100- 111 Dunsmuir Street
Vancouver, BC V6B 6A3

Phone: (604) 696-8272
Fax:
Received: 06/21/13 11:58 AM
Collected: 6/19/2013

Project: 123710616.300

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B*/7000B)

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
PB-01	0001	6/19/2013	6/24/2013	12000 ppm
Site: NORTH EXTERIOR WALL OF CANNERY Desc: WHITE COLOUR PAINT				
PB-02	0002	6/19/2013	6/24/2013	14000 ppm
Site: NORTH EXTERIOR WALL OF SHED 1 Desc: WHITE COLOUR PAINT				

Kevin Pang
or other approved signatory

Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. The QC data associated with these results included in this report meet the method QC requirements, unless specifically indicated otherwise. Unless noted, results in this report are not blank corrected. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. * slight modifications to methods applied. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request.
Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 06/27/2013 18:21:28



APPENDIX B

**Certificates of Analysis –
Suspected PCBs in Paint Bulk
Samples**



EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

Phone: (856) 303-2500 Fax: (856) 858-4571 Email: jsmith@emsl.com

Attn: **Zack Kranjec**
Stantec Consulting, LTD
1100- 111 Dunsmuir Street
Vancouver, BC V6B 6A3
Phone: (604) 696-8272
Fax:

6/28/2013

The following analytical report covers the analysis performed on samples submitted to EMSL Analytical, Inc. on 6/21/2013. The results are tabulated on the attached data pages for the following client designated project:

123710616.300

The reference number for these samples is EMSL Order #011302769. Please use this reference when calling about these samples. If you have any questions, please do not hesitate to contact me at (856) 303-2500.

Reviewed and Approved By:

Julie Smith - Laboratory Director



The test results contained within this report meet the requirements of NELAC and/or the specific certification program that is applicable, unless otherwise noted.
NELAP Certifications: NJ 03036, NY 10872, PA 68-00367

The samples associated with this report were received in good condition unless otherwise noted. This report relates only to those items tested as received by the laboratory. The QC data associated with the sample results meet the recovery and precision requirements established by the NELAP, unless specifically indicated. All results for soil samples are reported on a dry weight basis, unless otherwise noted. This report may not be reproduced except in full and without written approval by EMSL Analytical, Inc.

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077
 Phone/Fax: (856) 303-2500 / (856) 858-4571
<http://www.emsl.com> ismith@emsl.com

EMSL Order: 011302769
 CustomerID: JACQ30L
 CustomerPO: 123710616.300
 ProjectID:

Attn: **Zack Kranjec**
Stantec Consulting, LTD
1100- 111 Dunsmuir Street
Vancouver, BC V6B 6A3

Phone: (604) 696-8272
 Fax:
 Received: 06/21/13 9:20 AM
 Collected: 6/19/2013

Project: 123710616.300

Analytical Results

Client Sample Description PCB-01 **Collected:** 6/19/2013 **Lab ID:** 0001

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
3540C/8082A	Aroclor-1016	ND	0.71	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1221	ND	0.71	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1232	ND	0.71	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1242	ND	0.71	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1248	2.2	0.71	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1254	ND	0.71	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1260	ND	0.71	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1262	ND	0.71	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1268	ND	0.71	mg/Kg	6/25/2013	AB	6/28/2013	EH

Client Sample Description PCB-02 **Collected:** 6/19/2013 **Lab ID:** 0002

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
3540C/8082A	Aroclor-1016	ND	0.65	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1221	ND	0.65	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1232	ND	0.65	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1242	ND	0.65	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1248	4.9	0.65	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1254	ND	0.65	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1260	ND	0.65	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1262	ND	0.65	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1268	ND	0.65	mg/Kg	6/25/2013	AB	6/28/2013	EH

Client Sample Description PCB-03 **Collected:** 6/19/2013 **Lab ID:** 0003

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
3540C/8082A	Aroclor-1016	ND	0.50	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1221	ND	0.50	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1232	ND	0.50	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1242	ND	0.50	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1248	ND	0.50	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1254	ND	0.50	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1260	ND	0.50	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1262	ND	0.50	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1268	ND	0.50	mg/Kg	6/25/2013	AB	6/28/2013	EH

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077
 Phone/Fax: (856) 303-2500 / (856) 858-4571
<http://www.emsl.com> jsmith@emsl.com

EMSL Order: 011302769
 CustomerID: JACQ30L
 CustomerPO: 123710616.300
 ProjectID:

Attn: **Zack Kranjec**
Stantec Consulting, LTD
1100- 111 Dunsmuir Street
Vancouver, BC V6B 6A3

Phone: (604) 696-8272
 Fax:
 Received: 06/21/13 9:20 AM
 Collected: 6/19/2013

Project: 123710616.300

Analytical Results

Client Sample Description PCB-04 **Collected:** 6/19/2013 **Lab ID:** 0004

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
3540C/8082A	Aroclor-1016	ND	0.69	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1221	ND	0.69	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1232	ND	0.69	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1242	ND	0.69	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1248	ND	0.69	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1254	ND	0.69	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1260	ND	0.69	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1262	ND	0.69	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1268	ND	0.69	mg/Kg	6/25/2013	AB	6/28/2013	EH

Client Sample Description PCB-06 **Collected:** 6/19/2013 **Lab ID:** 0005

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
3540C/8082A	Aroclor-1016	ND	0.51	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1221	ND	0.51	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1232	ND	0.51	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1242	ND	0.51	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1248	ND	0.51	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1254	ND	0.51	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1260	ND	0.51	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1262	ND	0.51	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1268	ND	0.51	mg/Kg	6/25/2013	AB	6/28/2013	EH

Client Sample Description PCB-07 **Collected:** 6/19/2013 **Lab ID:** 0006

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
3540C/8082A	Aroclor-1016	ND	0.50	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1221	ND	0.50	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1232	ND	0.50	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1242	ND	0.50	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1248	ND	0.50	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1254	ND	0.50	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1260	ND	0.50	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1262	ND	0.50	mg/Kg	6/25/2013	AB	6/28/2013	EH
3540C/8082A	Aroclor-1268	ND	0.50	mg/Kg	6/25/2013	AB	6/28/2013	EH



EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (856) 303-2500 / (856) 858-4571

<http://www.emsl.com>

jsmith@emsl.com

EMSL Order:	011302769
CustomerID:	JACQ30L
CustomerPO:	123710616.300
ProjectID:	

Definitions:

ND - indicates that the analyte was not detected at the reporting limit

RL - Reporting Limit

APPENDIX 3



LEAD ANALYSIS REPORT

12138 FORTH AVENUE, STEVESTON, BC

Client: PWGSC Environmental Services	Date: September 18, 2013
Attention: Ms. Amy Moizumi	Date Submitted: September 18, 2013
Project Name: Lead-Based Coating Samples	
DST Project Number: BE-VC-O/H	

LEAD-BASED COATING SAMPLE ANALYSIS RESULTS

Sample Number	Location / Description	Color	Result (mg/cm ²)	Lead-Based Coating
Sample A	Window Putty Paint – Sample B	White	0.09	Yes
Sample B	Window Putty Paint – Sample B	White	0.16	Yes

ANALYTICAL METHODOLOGY:

A Niton X-Ray Fluorescence (XRF) spectroscopy detector was used to make measurements on suspect building painted surfaces. The Niton XRF is designed to detect and quantify the amount of lead present primarily in painted surfaces. Measurements were made following Niton XRF standard operating procedures for lead in surface coating measurements.

Suspect surface coating samples analyzed were identified to have hazardous levels of lead (600 ppm or ≥ 0.05 mg/cm²) with a detection limit of ≥ 0.02 mg/cm².



ASBESTOS ANALYSIS REPORT

Project Location: Gulf of Georgia Cannery,
12138 Forth Avenue, Steveston, BC

AASL Report #: **B00398**

Analyst: Gabrielle Sutton

Reference #: BE-VC-017423

Report Date: 18SEP2013

Number of Samples: 2

Method: NIOSH Method 9002

# B00398	Sample	Sub-Sample	Sample Description / Location	Results	ASB
1 *	Sample A	Single Phase - white	Window Putty, Sample A, Exterior Wall, Window	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---
2. 1	Sample B	Layer 1 - thin pale grey (paint)	Window Putty, Sample B, Exterior Wall, Window	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---
2. 2 *	Sample B	Layer 2 - white	Window Putty, Sample B, Exterior Wall, Window	Asbestos Fibres Not Detected 90 - 100 % Non-Fibrous	---

Comments

Samples analyzed in accordance with NIOSH Laboratory Method 9002
 American Industrial Hygiene Association (AIHA) BAPAT Program Laboratory Number 204301
 Estimated Limit of Detection is <0.5 %
 ASB = Asbestos present/absent in material
 T = Asbestos Present
 AASL *Asbestos Analytical Services Ltd.* will not accept any responsibility as to the manner of interpretation or application of these results.

* Sample preparation included grinding process.

Analyst: Original Signed By
 Gabrielle Sutton, B.A.

Date: September 18, 2013

Reviewed By: Original Signed By
 Gabrielle Sutton, B.A.



AASL - Bulk Sample Chain of Custody

Sample Submission:
Attention: Gabrielle Sutton
AASL Asbestos Analytical Services Ltd.
1B - 8980 Fraserwood Court,
Burnaby, BC V5J 5H7

B00398

Project #: BE-VC-017423

Project Name / Location: Gulf of Georgia Cannery, 12138 Forth Avenue, Steveston, BC

AASL Lab Sample # (Lab use only)	Field Sample #	Material Description (ie: Type of Material, Colour, Pattern)	Material Location (ie: Floor, Wall, Ceiling, Mechanical System)	General Location (ie: Room #, Floor #, Level, Building)
B00398 1	Sample A	Window Putty - Sample A	Exterior Wall	Window
B00398 2	Sample B	Window Putty - Sample B	Exterior Wall	Window

Regulatory Jurisdiction:

- BC ON QC
- AB MB Other

Fax#:

Email: cinjates@dstgroup.com

Date:

Date: Sep 18/2013 11:45am

Comments:

- RUSH
- 3-day Regular
- Other (specify)

Send analytical results to: Attention: C. Injates

Attention:

Samples relinquished by:

Samples received at AASL by: