



RETURN BIDS TO:

RETOURNER LES SOUMISSIONS À:

Bid Receiving Public Works and Government
Services Canada/Réception des soumissions Travaux
publics et Services gouvernementaux Canada
800 Burrard Street, Room 219
800, rue Burrard, pièce 219
Vancouver
British Columbia
V6Z 0B9
Bid Fax: (604) 775-9381

SOLICITATION AMENDMENT MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise
indicated, all other terms and conditions of the Solicitation
remain the same.

Ce document est par la présente révisé; sauf indication contraire,
les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Tender Enquiries:
Carolyn Arthur
Contracting Officer
Email: Carolyn.Arthur@pwgsc.gc.ca
Tel: (604)364-2752

Vendor/Firm Name and Address

Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Public Works and Government Services Canada -
Pacific Region
800 Burrard Street, Room 219
800, rue Burrard, pièce 219
Vancouver
British C
V6Z 0B9

Title - Sujet Segregation Control Post Glazing	
Solicitation No. - N° de l'invitation EZ899-172680/A	Amendment No. - N° modif. 002
Client Reference No. - N° de référence du client	Date 2017-02-17
GETS Reference No. - N° de référence de SEAG PW-\$PWY-022-7976	
File No. - N° de dossier PWY-6-39310 (022)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2017-02-24	Time Zone Fuseau horaire Pacific Standard Time PST
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Arthur (PWY), Carolyn	Buyer Id - Id de l'acheteur pwy022
Telephone No. - N° de téléphone (604) 364-2752 ()	FAX No. - N° de FAX (604) 775-7395
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: CSC - Kent Institution - Agassiz, BC	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

Solicitation No. - N° de l'invitation

EZ899-172680/A

Client Ref. No. - N° de réf. du client

Amd. No. - N° de la modif.

002

File No. - N° du dossier

PWY-6-39310

Buyer ID - Id de l'acheteur

pw022

CCC No./N° CCC - FMS No./N° VME

Les documents français seront disponibles sur demande.

Amendment 002 has been raised to

1) Incorporate Addenda #01 and #02.

1) Please see the attached addenda #1 and #2 dated February 17, 2017.

All other terms and conditions remain unchanged.

The following changes in the tender documents are effective immediately. This addendum will form part of the contract documents.

- .1 Reference: **SPECIFICATIONS** Section 01 01 50 GENERAL INSTRUCTIONS
- a) Part 1.10.4 Construction Parking
[ADD] .4 Contractor may park one (1) pre-approved vehicle within the facility and in a designated area for the purpose of delivering their daily materials to the site from storage area. The vehicle may remain for daily removal of refuse.
- .2 Reference: **DRAWINGS** Drawing A01 GENERAL NOTES AND PHASING PLAN
- a) **[Add]** General Note #12: Existing control post door at the living unit level must remain closed and is not intended to be used for contractor's general access or delivery of materials. Contractor must access the interior of the control post via ladder from above, and bring in new material from an opening created by removing an existing glazing panel.
- .3 Reference: **DRAWINGS** Drawing A06 EXISTING PLANS, ELEVATIONS, AND DETAILS
- a) **[Add]** The following note for 3 glazing panels shown on elevations 05 and 06: "Contractor may remove these glazing and stops from the attack side. Carry out the removal process in accordance with specifications section 01 35 33 Health and Safety Requirements" and in accordance with Addendum #2
- .4 Reference: **DRAWINGS** Drawing A13 NEW PLANS, ELEVATIONS, AND DETAILS
- a) **[Add]** The following note for 3 glazing panels shown on elevations 05 and 06: "Contractor may install new glazing and stops from the attack side."

End of Addendum

ADDENDUM #02

The following changes in the tender documents are effective immediately. This addendum will form part of the contract documents.

Project No.: R.082441.001

Kent Institution

4732 Cemetery Road, Agassiz, BC

Segregation Control Post Glazing Replacement

Section 02 81 01

HAZARDOUS MATERIALS USE AND ABATEMENT

Page 1 of 7

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 01 01 50 – General Instructions
- .2 Section 01 35 33 – Health and Safety Requirements

1.2 REFERENCES

- .1 Reports:
 - .1 “Pre-Renovation Hazardous Building Material Assessment, Living Unit J & K Segregation Control Post, Kent Institution, Agassiz, BC”, prepared by SNC Lavalin Inc., dated February 16, 2017 (further referred to herein as the Assessment Report) – attached as an Appendix
- .2 Definitions:
 - .1 Dangerous Goods: product, substance, or organism specifically listed or meets hazard criteria established in Transportation of Dangerous Goods Regulations.
 - .2 Hazardous Material: product, substance, or organism used for its original purpose; and is either dangerous goods or material that will cause adverse impact to environment or adversely affect health of persons, animals, or plant life when released into the environment.
 - .3 Hazardous Waste: hazardous material no longer used for its original purpose and that is intended for recycling, treatment or disposal.
 - .4 Hazardous Building Material: component of a building or structure that will cause adverse impact to environment or adversely affect health of persons, animals, or plant life when altered, disturbed or removed during maintenance, renovation or demolition.
- .3 Reference Standards:
 - .1 Canadian Environmental Protection Act, 1999 (CEPA 1999)
 - .1 Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149).
 - .2 Department of Justice Canada
 - .1 Transportation of Dangerous Goods Act, 1992 (TDG Act) [1992], (c. 34).
 - .2 Transportation of Dangerous Goods Regulations (T-19.01-SOR/2001-286).
 - .3 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
 - .4 WorkSafe BC

- .1 British Columbia's Occupational Health and Safety Regulation (BC Reg. 296/97, including amendments to date of work)
- .2 "Safe Work Practices for Handling Asbestos" (2012)
- .3 "Lead-Containing Paints and Coatings; Preventing Exposure in the Construction Industry" (2011)
- .5 British Columbia Hazardous Waste Regulation (BC Reg. 63/88)
- .6 The Federal PCB Regulations (SOR/2008-273).

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 01 50 – General Instructions.
- .2 Product Data for hazardous materials to be used by the Contractor to complete the Work:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets, and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit two copies of WHMIS MSDS in accordance with Section 01 35 33- Health and Safety Requirements to Departmental Representative for each hazardous material required prior to bringing hazardous material on site.
 - .3 Submit site specific hazardous materials plan to Departmental Representative that identifies hazardous materials, usage, location, personal protective equipment requirements, and disposal arrangements.
 - .4 Construction/Demolition Waste Management:
 - .1 Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating percentage of construction/demolition wastes were recycled or salvaged
 - .5 Low-Emitting Materials: submit listing of adhesives and sealants used in building, comply with VOC and chemical component limits or restrictions requirements.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle hazardous materials to be used by the Contractor to complete the Work in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver hazardous materials to be used by the Contractor to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Transport hazardous materials and wastes in accordance with Transportation of Dangerous Goods Act, Transportation of Dangerous Goods Regulations, and applicable provincial regulations.
- .4 Storage and Handling Requirements:
 - .1 Co-ordinate storage of hazardous materials to be used by the Contractor to complete the Work with Departmental Representative and abide by internal requirements for labelling and storage of materials and wastes.
 - .2 Store and handle hazardous materials and wastes in accordance with applicable federal and provincial laws, regulations, codes, and guidelines.
 - .3 Store and handle flammable and combustible materials in accordance with National Fire Code of Canada requirements.

- .4 Keep no more than 45 litres of flammable and combustible liquids such as gasoline, kerosene and naphtha for ready use.
 - .1 Store flammable and combustible liquids in approved safety cans bearing the Underwriters' Laboratory of Canada or Factory Mutual seal of approval.
 - .2 Storage of quantities of flammable and combustible liquids exceeding 45 litres for work purposes requires the written approval of the Departmental Representative.
- .5 Transfer of flammable and combustible liquids is prohibited within buildings.
- .6 Transfer flammable and combustible liquids away from open flames or heat-producing devices.
- .7 Solvents or cleaning agents must be non-flammable or have flash point above 38 degrees C.
- .8 Store flammable and combustible waste liquids for disposal in approved containers located in safe, ventilated area. Keep quantities to minimum.
- .9 Observe smoking regulations, smoking is prohibited in areas where hazardous materials are stored, used, or handled.
- .10 Storage requirements for quantities of hazardous materials and wastes in excess of 5 kg for solids, and 5 litres for liquids:
 - .1 Store hazardous materials and wastes in closed and sealed containers.
 - .2 Label containers of hazardous materials and wastes in accordance with WHMIS.
 - .3 Store hazardous materials and wastes in containers compatible with that material or waste.
 - .4 Segregate incompatible materials and wastes.
 - .5 Ensure that different hazardous materials or hazardous wastes are stored in separate containers.
 - .6 Store hazardous materials and wastes in secure storage area with controlled access.
 - .7 Maintain clear egress from storage area.
 - .8 Store hazardous materials and wastes in location that will prevent them from spilling into environment.
 - .9 Have appropriate emergency spill response equipment available near storage area, including personal protective equipment.
 - .10 Maintain inventory of hazardous materials and wastes, including product name, quantity, and date when storage began.
 - .11 When hazardous waste is generated on site:
 - .1 Co-ordinate transportation and disposal with Departmental Representative.
 - .2 Comply with applicable federal, provincial and municipal laws and regulations for generators of hazardous waste.
 - .3 Use licensed carrier authorized by provincial authorities to accept subject material.
 - .4 Before shipping material obtain written notice from intended hazardous waste treatment or disposal facility it will accept material and it is licensed to accept this material.
 - .5 Label containers with legible, visible safety marks as prescribed by federal and provincial regulations.

- .6 Only trained personnel handle, offer for transport, or transport dangerous goods.
- .7 Provide photocopy of shipping documents and waste manifests to Departmental Representative.
- .8 Track receipt of completed manifest from consignee after shipping dangerous goods. Provide photocopy of completed manifest to Departmental Representative.
- .9 Report discharge, emission, or escape of hazardous materials immediately to Departmental Representative and appropriate provincial authority. Take reasonable measures to control release.
- .12 Ensure personnel have been trained in accordance with Workplace Hazardous Materials Information System (WHMIS) requirements.
- .13 Report spills or accidents immediately to Departmental Representative. Submit a written spill report to Departmental Representative within 24 hours of incident.

Part 2 Products

2.1 MATERIALS

- .1 Description:
 - .1 Bring on site only quantities hazardous material required to perform Work.
 - .2 Maintain MSDS in proximity to where materials are being used. Communicate this location to personnel who may have contact with hazardous materials.

Part 3 Execution

3.1 HAZARDOUS MATERIALS ABATEMENT

- .1 Scope of Abatement Activities.
 - .1 Abatement shall be conducted to handle, remove and/or dispose of hazardous building materials as identified in the Assessment Report in accordance with applicable regulations, guidelines, standards and/or best practices for such work.
 - .2 The listing below is a summary of the identified hazardous building material categories and associated handling, removal and disposal regulations, guidelines and/or standards.
 - .1 Asbestos-Containing Materials (ACMs)
 - .1 According to the Assessment Report, the following ACMs are present, and will require removal prior to renovation.
 - .1 Black mastic on interior window between pane and frame
 - .2 Removal of ACMs is to be conducted in accordance with the requirements of the 2012 WorkSafe BC publication "*Safe Work Practices for Handling Asbestos*".
 - .1 Submit Provincial and/or local requirements for Notice of Project Form. Provide copy to Department Representative.

- .2 Submit proof of Contractor's Asbestos Liability Insurance.
- .3 Submit Contractor Notification and Acknowledgement to Department Representative.
- .4 Submit to Departmental Representative necessary permits for transportation and disposal of asbestos containing waste and proof that asbestos containing waste has been received and properly disposed.
- .5 Submit proof that all asbestos workers and/or supervisor have received appropriate training and education by a competent person in the hazards of asbestos exposure, good personal hygiene and work practices while working in Asbestos Work Areas, and the use, cleaning and disposal of respirators and protective clothing. Instruction and training related to respirators is to include, at a minimum:
 - .1 Fitting of equipment.
 - .2 Inspection and maintenance of equipment.
 - .3 Disinfecting of equipment.
 - .4 Limitations of equipment.
- .3 Department Representative will be responsible for arranging for an environmental consultant to conduct air monitoring.
- .4 Waste transportation to be conducted in accordance with BC Reg. 63/88 and the Federal Transportation of Dangerous Goods Regulation.
- .5 Waste disposal to be conducted in accordance with BC Reg. 63/88.
- .6 Notify Departmental Representative of suspected ACM discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material pending instructions from Departmental Representative.
- .2 Lead and Lead-Containing Paints (LCPs)
 - .1 According to the Assessment Report, the following LCPs are present and will require consideration during renovation.
 - .1 Cream paint on the walls and window frames of the control post
 - .2 Tan paint on the exterior window frames of the control post
 - .2 Actions that will disturb materials coated with LCPs are to be conducted in accordance with the requirements of the current version of the WorkSafe BC publication "*Lead-Containing Paint and Coatings: Preventing Exposure in the Construction Industry*", keeping airborne exposure to lead dust to less than the 8-hour Occupational Exposure Limit (OEL) for lead of 0.05 milligram per cubic metre (mg/m³).

- .3 Waste transportation to be conducted in accordance with BC Reg. 63/88 and the Federal Transportation of Dangerous Goods Regulation.
- .4 Waste disposal to be conducted in accordance with BC Reg. 63/88.
- .3 Polychlorinated Biphenyls (PCBs)
 - .1 Removal, alteration and/or disposal of PCB-containing equipment is not anticipated to be required during the Work.
- .4 Mould
 - .1 Removal and/or disposal of mould-impacted materials is not anticipated to be required.
- .5 Mercury
 - .1 Removal, alteration and/or disposal of mercury-containing equipment is not anticipated to be required.
- .6 Ozone-Depleting Substances (ODSs)
 - .1 Removal and/or disposal of refrigeration or air conditioning equipment with ODS refrigerants is not anticipated to be required.
- .7 Silica
 - .1 According to the Assessment Report, silica is not suspected in the Work area. However, concrete may be present beneath the metal clad support columns.
 - .2 If silica-containing materials are to be disturbed during renovation, ensure dust control measures are employed such that airborne silica dust concentrations do not exceed the exposure limit as stipulated by BC Reg. 296/97 (Cristobalite and Quartz – each 0.025 mg/m³). This would include, but not be limited to, the following:
 - .1 Providing workers with respiratory protection
 - .2 Wetting the surface of the materials, use of water or dust suppressing agents to prevent dust emissions
 - .3 Providing workers with facilities to properly wash prior to exiting the work area.

3.2 **CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 01 50 – General Instructions. 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 01 50 – General Instructions.
- .3 Waste Management: separate waste materials for reuse and recycling.
 - .1 Dispose of hazardous waste materials in accordance with applicable federal and provincial acts, regulations, and guidelines.
 - .2 Recycle hazardous wastes for which there is approved, cost effective recycling process available.
 - .3 Send hazardous wastes to authorized hazardous waste disposal or treatment facilities.
 - .4 Burning, diluting, or mixing hazardous wastes for purpose of disposal is prohibited.

- .5 Disposal of hazardous materials in waterways, storm or sanitary sewers, or in municipal solid waste landfills is prohibited.
- .6 Dispose of hazardous wastes in timely fashion in accordance with applicable federal and provincial regulations.
- .7 Minimize generation of hazardous waste to maximum extent practicable. Take necessary precautions to avoid mixing clean and contaminated wastes.
- .8 Identify and evaluate recycling and reclamation options as alternatives to land disposal, such as:
 - .1 Hazardous wastes recycled in manner constituting disposal.
 - .2 Hazardous waste burned for energy recovery.
 - .3 Lead-acid battery recycling.
 - .4 Hazardous wastes with economically recoverable precious metals.

END OF SECTION

February 16, 2017

Project: 644051

Public Works and Government Services Canada
219 – 800 Burrard Street
Vancouver, BC V6Z 0B9

ATTENTION: Amy Moizumi, B.Sc. (Agr.),
Environmental Specialist, Environmental Services

REFERENCE: **Pre-Renovation Hazardous Building Material Assessment,
Living Units J & K Segregation Control Post,
Kent Institution, Agassiz, BC**

On behalf of Public Works and Government Services Canada (PWGSC) for Correctional Service Canada (CSC), SNC-Lavalin Inc. (SNC-Lavalin) has completed a pre-renovation destructive hazardous building materials assessment (HBMA) of the Living Units J&K segregation control post at the Kent Institution in Agassiz, BC (the "Site").

All work was completed as per the Hazardous Materials Assessment Consulting Services Task Authorization – EZ113-150642/003/PWY.

Objectives and Project Understanding

The objective of the work was to identify and sample all suspect hazardous building materials related to the Living Units J&K segregation control post that is to undergo glazing replacement in the near future. Samples were collected, to the maximum extent possible, from all accessible locations.

The PWGSC project number for this work is as follows:

- › Project Number R.082441.001 – Living Units J&K Segregation Control Post HBMS.

Scope of Work

On February 10, 2017, SNC-Lavalin personnel observed the interior and exterior of the Site to identify the potential existence of the following hazardous materials: asbestos; lead-containing paint; and, silica.

The following materials were excluded from the HBMA: polychlorinated biphenyls (PCBs); mercury; ozone depleting substances (ODS); radiological sources and/or substances; biological hazards (e.g., rodent droppings); mould and/or moisture; formaldehyde; carbon monoxide; radon; volatile organic compounds; very-short-lived low-level radioactive waste; and, indoor air quality pollutants.

Representative samples were collected and laboratory analysis completed for suspected asbestos-containing materials (ACMs) and lead-containing paints.





Summary

Based on the results of the survey, there are hazardous building materials located on the Site requiring specific procedures prior to deconstruction/demolition for: handling; abatement; demolition; and disposal, as outlined in Table 1. The sample locations are presented on Drawing 644051-BM26. Photographs of the sample locations are included in Attachment 1. A copy of the laboratory analytical report for the asbestos and lead analyses is included in Attachment 2.

A summary of the materials assessed is as follows:

Asbestos-Containing Materials

- › **Asbestos-containing black mastic** was identified on an interior window facing the Living Unit J stairwell between the pane and frame (Photograph 1).
 - The mastic is not readily accessible under normal conditions due to its location, non-friable, and is suspected to be limited to windows with integrated wire mesh.

Lead-Based Paint

- › **Lead-containing cream paint** was identified on the interior walls and window frames of the control post (Photograph 2).
- › **Lead-containing tan paint** was identified on the exterior window frames of the control post (Photograph 3).

It should be noted that all materials found at the Site of similar colours as identified above should be considered as lead-containing.

Silica

No suspect sources of silica were observed in the areas assessed; however, concrete may be present beneath the metal clad support columns.

Recommendations

If PWGSC undertakes renovations at the Site, PWGSC should require that the qualified contractors (i.e., abatement, renovation, and/or disposal contractors) submit the following documentation to PWGSC to verify that the qualified contractors have acted in a responsible manner in accordance with the existing applicable regulations:

- › notice of project for work involving asbestos (NOPA) to be filed with WorkSafeBC prior to asbestos abatement;
- › notice of project lead (NOPL) to be filed with WorkSafeBC prior to lead abatement;
- › site-specific work procedures for materials of concern (asbestos and lead procedures are included with NOPA and NOPL); and,





› relevant Waste Disposal Manifests.

The above documentation should be retained by PWGSC and/or CSC to verify compliance with the applicable regulations. The information supplied by the contractor(s) should include, but not be limited to the above list.

Asbestos

SNC-Lavalin understands that PWGSC (for CSC) intends to complete renovations at the Site; therefore, SNC-Lavalin recommends that all known and suspect ACMs identified be removed and disposed of by a qualified contractor in accordance with applicable federal and/or provincial regulations. All work should be completed in accordance with the Canada Labour Code (Sections 124[1]y and 125[1]Z.14), which is in place to protect any person accessing the work place. Control of exposure to asbestos is governed by the WorkSafeBC Occupational Health and Safety Regulation (OHSR), BC Reg. 296/97 (as amended) and the provincial Hazardous Waste Regulation. Additional guidance is provided in the WorkSafeBC publication *Safe Work Practices for Handling Asbestos*¹.

A NOPA should be filed with WorkSafeBC prior to any asbestos abatement work taking place.

Lead

WorkSafeBC suggests that improper removal of paint with a lead concentration of 600 mg/kg or more can result in airborne lead concentrations that exceed 50% of the airborne lead exposure limit of 0.05 mg/m³; this would trigger the requirement for an employer to file a NOPL and the development and implementation of an exposure control plan and safe work procedures prior to any work being completed.

There is the potential for lead exposure for high risk individuals in the event that lead-containing paint with lead concentrations >90 mg/kg is burned and/or becomes airborne during renovation, deconstruction, and/or demolition activities such as cutting, grinding, etc. These individuals should be excluded from the work area whenever lead-containing paint is being disturbed by work activities to minimize potential lead exposure to these individuals.

The waste generated from removal of paint and surface coatings may be hazardous. Given the possible need for off-site disposal of waste material during deconstruction/demolition activities, laboratory analysis for preliminary waste characterization of select samples (concentrations of metals in the leachate) may be required. If leachate analysis (Toxicity Characteristic Leaching Procedure [TCLP]) is required for disposal of materials containing elevated lead concentrations, additional sampling may be required.

¹ Available at <https://www.worksafebc.com/en/resources/health-safety/books-guides/safe-work-practices-for-handling-asbestos>





Silica

Suspected silica-containing material, such as concrete support pillars (if encountered), must be managed appropriately. Parts 5, 6, and 20 of the OHSR set out occupational exposure guidelines and controls for silica dust to eliminate, reduce, or manage workers' exposure risk. WorkSafeBC identifies the requirement to develop an exposure control plan to protect workers from overexposure to airborne silica dust in excess of 50% of the exposure limit (i.e., crystalline silica has an OHSR occupational exposure limit of 0.025 mg/m³).

Regulatory Framework

Federal and provincial regulations require that hazardous building materials be properly identified and managed to prevent potential exposure to workers. In addition, a more intrusive assessment is required to identify materials of concern prior to renovations, salvage, and/or demolition of a building or structure. These materials must be properly controlled, removed, and/or disposed of at a suitably permitted facility in accordance with the applicable federal and provincial regulations. The following federal and provincial regulations relate to these materials:

Federal

Various Regulations made under the Canadian Environmental Protection Act (CEPA), 1999, S.C. 1999, c. 33, last amended on June 17, 2016, including specialized handling and/or disposal requirements for materials including lead, PCBs, mercury, halocarbons (ODS and Non-ODS), radiological sources and/or substances, and solid/hazardous wastes. Regulations include the following:

- › Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149).
- › Federal Halocarbon Regulations, 2003 (SOR/2003-289) and Regulations Amending the Federal Halocarbon Regulations, 2003 (SOR/2009-221).
- › Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations, 2008 (SOR/2008-197).
- › Interprovincial Movement of Hazardous Waste Regulations (SOR/2002-301).
- › Ozone-Depleting Substances Regulations, 1998 (SOR/99-7).
- › PCB Regulations (SOR/2008-273).
- › PCB Waste Export Regulations, 1996 (SOR/97-109).
- › Transportation of Dangerous Goods (TDG) Act, 1992, S.C. 1992, c. 34, as amended up to November 26, 2016, Transportation of Dangerous Goods Regulations (SOR/2001-286), as amended, requires that radioactive materials must be transported in accordance with the provisions of the Act.
- › Hazardous Products Act (R.S.C., 198, c. H-3), as amended up to December 12, 2016, prohibits the sale or importation of urea formaldehyde foam insulation (UFFI) into Canada.





- › Surface Coating Materials Regulations, SOR/2005-109, as amended up to June 22, 2016, requires the concentration of total lead present in a surface coating material to be not more than 90 mg/kg.
- › Human Resources Social Development Canada (HRSDC), Canada Labour Code Part II, Canada Occupational Health and Safety Regulations, Part X, Hazardous Substances, as amended, requires that all hazardous substances in the workplace, including asbestos, be identified and controlled to minimize potential exposure to workers. Under the Canada Labour Code Part II definitions, a “hazardous substance” includes a controlled product and a chemical, biological, or physical agent that, by reason of a property that the agent possess, is hazardous to the safety or health of a person exposed to it.

Provincial

- › WorkSafeBC Occupational Health and Safety Regulation (OHSR), BC Reg. 296/97, includes amendments up to B.C. Reg. 195/2015, February 1, 2016, requires that materials including any asbestos, lead, or other heavy metal or toxic substance, and flammable or explosive materials that may be handled, disturbed, or removed during demolition must be identified and removed or safely contained prior to demolition. In addition, a copy of the observation report identifying these materials must be available at the work site.
- › Environmental Management Act (EMA), B.C. Reg. 179/2016 / July 19, 2016, Ozone Depleting Substances (ODS) and Other Halocarbons Regulation, BC Reg. 387/99, including amendments up to BC Reg. 317/2012, requires ODS to be recovered from equipment prior to disposal.
- › Hazardous Waste Regulation (HWR), B.C. Reg. 63/88, including amendments up to B.C. Reg. 179/2016, requires all Hazardous Wastes (HW) must be properly managed and disposed of.

We note that at the time of this report, the provincial OHSR defines ACMs as any manufactured article or other material which contains 0.5% or more asbestos by weight and vermiculite insulation containing any amount of asbestos.

Federal and provincial guidelines limit lead concentrations in paint to 90 mg/kg for high risk individuals (i.e., pregnant women and children), and any concentrations that exceed this limit would be considered a lead-containing paint. WorkSafeBC suggests that improper removal of paint with a lead concentration of 600 mg/kg or more can result in airborne lead concentrations that exceed 50% of the airborne lead exposure limit of 0.05 mg/m³; this would trigger the requirement for an employer to file a NOPL and the development and implementation of an exposure control plan and safe work procedures prior to any work being completed. Therefore, for the purposes of this report we have identified paint as lead based if the total lead concentration is >90 mg/kg as per the federal regulations, and if the paint contains a lead concentration of 600 mg/kg or greater, an exposure control plan may be required if the paint is disturbed in such a manner that workers could be exposed to lead at >50% of the exposure limit.

There are no special disposal requirements for materials coated with lead paint unless the lead is found to be leachable in excess of the regulated standard of 5 mg/L in the HW regulations while considering the entire mass of the object the paint is coating.





WorkSafeBC indicates that employers are required under Section 5.54 of the OHSR to develop an exposure control plan when workers are or may be exposed to airborne silica dust in excess of 50% of the exposure limit. Exposure limits vary depending on the type of silica identified.

Methodology

The following sections outline the specific protocols followed when completing the survey.

Asbestos

The methodology for completing the asbestos assessment was in accordance with WorkSafeBC guidelines and included the identification of suspect materials and collection of an adequate number of representative samples of these materials. All accessible portions of the Living Units J & K segregation control post were observed for possible ACMs. The Site was also inspected for areas that could potentially contain vermiculite insulation.

On February 10, 2017, a total of three (3) potential asbestos samples were collected from selected areas of the Site. No vermiculite insulation was identified or suspected within the areas inspected. All samples were submitted to Maxxam Analytics Inc. in Burnaby, BC (Maxxam) and analyzed for asbestos in accordance with the applicable regulations.

Lead Paint

Different paint colours may contain different concentrations of lead; therefore, SNC-Lavalin personnel inspected the Site to determine primary paint colour(s) that had been applied to major surfaces. The approach was to try to obtain samples from structures that may need to be cut, ground, or sanded during renovation activities. Factory painted metal surfaces are not sampled as the paint is applied in thin layers, making it difficult to obtain a sufficient amount of paint to analyze.

During the survey, two (2) paint samples were collected and submitted to Maxxam for analysis of total lead in accordance with the applicable regulations.

Silica

Silica occurs naturally as a crystalline material in rock, sand, concrete, and cement; therefore, is likely present in poured concrete slabs/floors, concrete blocks, mortar, plaster, drywall, acoustic ceiling tiles, and ceramic tiles. Crystalline silica is significantly more toxic than amorphous silica; however, both are regulated. Crystalline silica dust can be generated through processes such as breaking, drilling, hammering, blasting, grinding, crushing, or sandblasting silica-containing materials. When breathed in, the crystalline silica dust can cause permanent damage to the lungs.

SNC-Lavalin personnel noted materials at the Site that are suspected of containing silica.





SNC • LAVALIN

PWGSC – Page 7 of 11
February 16, 2017

Project 644051

Results

Details of the results are presented for each regulated material of concern in Table 1, below. This information includes recommendations for removal/handling during renovation or demolition/deconstruction activities, where required. All samples were given the prefix “KENT-”; for conciseness, this prefix has been omitted in Table 1.





Table 1: Detailed Inventory of Hazardous Materials – J&K Segregation Control Post, Kent Institution, Agassiz, BC

Issue / Location		Results	Renovation/Pre-Demolition Requirement
ASBESTOS-CONTAINING MATERIALS (ACMs)			
Suspect ACMs sampled – <u>Asbestos Identified</u> : > J/K-A1 – Mastic, black, interior of window between pane and frame facing Living Unit J stairwell.		Analytical Result: > 0.5%-10% Chrysotile	Prior to renovation/demolition, the ACMs must be removed by a qualified asbestos removal contractor. Work should be performed in accordance with the OHSR and BC HWR. Note: At the time of this report, ACMs means any manufactured article or other material, which contains 0.5% or more asbestos by weight as defined in the regulations.
Suspect ACMs sampled – <u>Asbestos NOT Identified</u> : > J/K-A2 – Mastic, grey, interior of window between pane and frame on the door facing Living Unit J kitchen (Photograph 4). > J/K-A3 – Mastic, black, exterior of window between pane and frame facing Janitor's Room (Photograph 5).		Analytical Result: > non-asbestos > non-asbestos	No renovation/pre-demolition requirements necessary.
Suspect ACMs not sampled: > The area was assessed for structures which may conceal vermiculite insulation; however, no such locations were identified.		Analytical Result: > None identified	No pre-demolition requirements necessary; however, if vermiculite is observed during demolition/renovation, a sample should be collected and analyzed for potential asbestos content.





Table 1 (Cont'd): Detailed Inventory of Hazardous Materials – J&K Segregation Control Post, Kent Institution, Agassiz, BC

Issue / Location		Results	Renovation/Pre-DEMOLITION Requirement
LEAD PAINT (mg/kg)			
Suspect lead-based paint sampled: > <u>J/K-P1 – Cream, walls and window frames, interior.</u> > <u>J/K-P2 – Tan, window frame, exterior.</u>		Analytical Result: > <u>735 mg/kg</u> > <u>224 mg/kg</u>	Lead paint was identified containing >90 mg/kg . If a cutting torch, grinding equipment, or other work methods are used on the painted areas of the structures that could mobilize lead dust or fumes, then high risk individuals such as pregnant women or children should be kept out of the work area. One paint sample was also found to contain a lead concentration >600 mg/kg ; therefore, an exposure control plan must be implemented if work activities could generate lead dust or fumes. A fog nozzle to wet the area should be used to reduce particles during the demolition process.
SILICA			
No suspect sources of silica were observed in the areas assessed; however, concrete may be present beneath the metal clad support columns		> N/A	No pre-demolition requirements necessary; however, if concrete is encountered and the material is to be cut, ground, drilled, or broken up during renovation/demolition, then airborne silica particles may be released. An exposure control plan must be implemented if work activities could generate silica dust.





Notice to Reader

This report has been prepared by SNC-Lavalin Inc. (SNC-Lavalin) for PWGSC, who has been party to the development of the scope of work for this project and understands its limitations². Copyright of this report vests with Her Majesty the Queen in Right of Canada. This report was prepared in accordance with a services contract between SNC-Lavalin and PWGSC, including General Conditions 2035 of the Standard Acquisition Clauses and Conditions (SACC) Manual and liability is specified in the contract with PWGSC.

This report is intended to provide information to PWGSC to assist it in making business decisions. SNC-Lavalin is not a party to the various considerations underlying the business decisions, and does not make recommendations regarding such business decisions.

The findings, conclusions and recommendations in this report have been developed in a manner consistent with the level of skill normally exercised by environmental professionals currently practising under similar conditions in the area. The findings contained in this report are based, in part, upon information provided by others. If any of the information is inaccurate, modifications to the findings, conclusions and recommendations may be necessary.

The findings, conclusions and recommendations presented by SNC-Lavalin in this report reflect SNC-Lavalin's best judgement based on the site conditions at the time of the site inspection on the date(s) set out in this report and on information available at the time of preparation of this report. They have been prepared for specific application to this site and are based, in part, upon visual observation of the site and specific analysis of hazardous building material samples as described in this report. Substances other than those described may exist within the site, reported substance parameters may exist in areas of the site not investigated, and concentrations of substances greater or less than those reported may exist between sample locations.

The findings and conclusions of this report are valid only as of the date of this report. If site conditions change, new information is discovered, or unexpected site conditions are encountered in future work, including excavations, borings, or other studies, the findings, conclusions and/or recommendations of this report should be re-evaluated. It is recommended that users of this report should engage a suitably qualified professional to assist in interpreting the significance, if any, of the findings.

² © Her Majesty the Queen in Right of Canada (2016)





SNC • LAVALIN

PWGSC – Page 11 of 11
February 16, 2017

Project 644051

We trust this provides you with the information you currently require. If you have any questions, please contact this office at your earliest convenience.

M. Aaron Hall, B.Sc, A.Sc.T.

Project Scientist

Environment & Geoscience
Infrastructure

Tim Drozda, P.Eng.

Project Engineer

Environment & Geoscience
Infrastructure

TDD/cmp
P:\CP\PWGSC\644051\5.0 DEL\5.5 OTH\216MAHA (J-K CONTROL POST)_FINAL.DOCX
enc.

Drawing

› 644051-BM26 – Building Material Survey Sampling Plan – Living Unit J&K Segregation Control Post

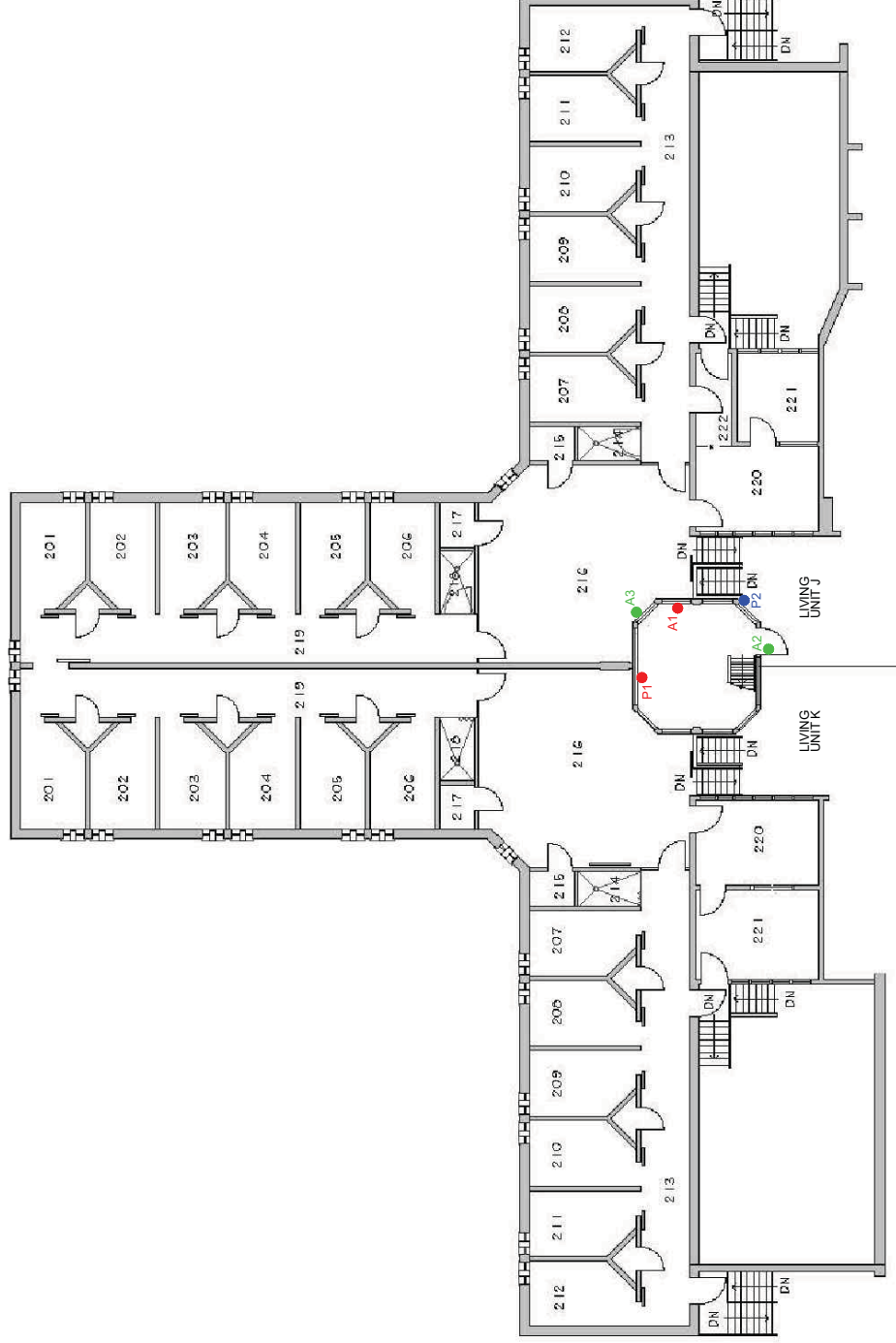
Attachments

1. Photographs
2. Laboratory Analytical Report



DRAWING

- › 644051-BM26 – Building Material Survey Sampling Plan – Living Unit J&K Segregation Control Post



- LEGEND**
- P18 ● PAINT SAMPLE WITH LEAD CONCENTRATION LESS THAN OR EQUAL TO 90 mg/kg
 - P21 ● PAINT SAMPLE WITH LEAD CONCENTRATION GREATER THAN 90 mg/kg AND LESS THAN 600 mg/kg
 - P17 ● PAINT SAMPLE WITH LEAD CONCENTRATION GREATER THAN OR EQUAL TO 600 mg/kg
 - A13 ● ASBESTOS SAMPLE WITH CONCENTRATION LESS THAN 0.5%
 - A14 ● ASBESTOS SAMPLE WITH CONCENTRATION GREATER THAN OR EQUAL TO 0.5%

REFERENCE DRAWINGS

DWG. NO.	DATE	DESCRIPTION
REVISIONS		
1	2017-02-15	ISSUED TO CLIENT
0	2017-02-14	ISSUED AS DRAFT
REV.	DATE	DESCRIPTION

BY	CHK	TD
BY	CHK	TD

BUILDING MATERIAL SURVEY SAMPLING PLAN - LIVING UNIT J&K SEGREGATION CONTROL POST

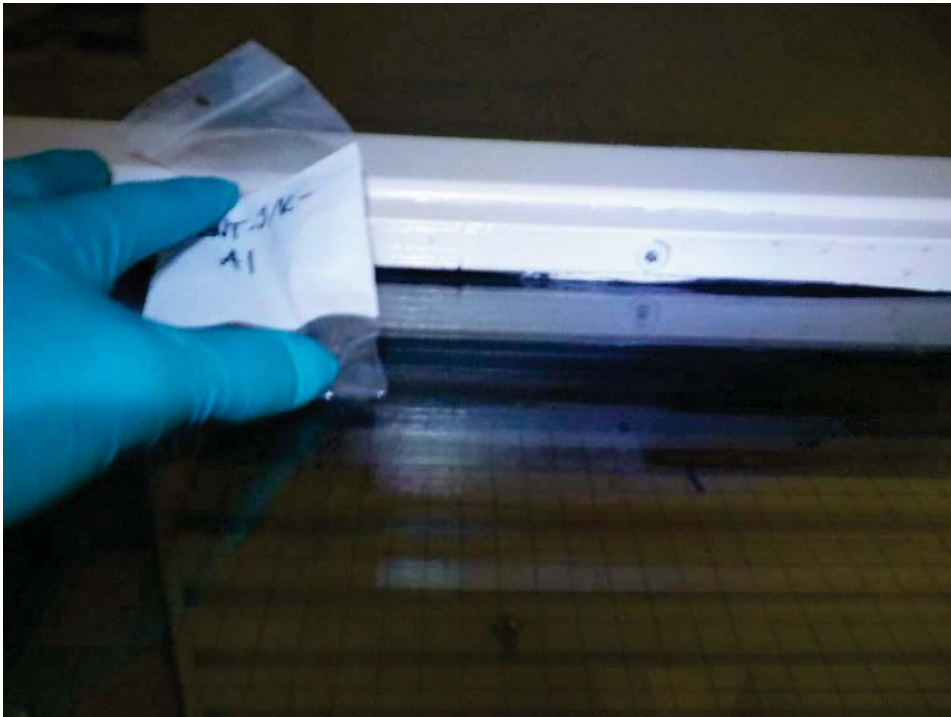
SNC • LAVALIN

CLIENT NAME: PUBLIC WORKS AND GOVERNMENT SERVICES
PROJECT LOCATION: KENT INSTITUTION AGASSIZ, BC

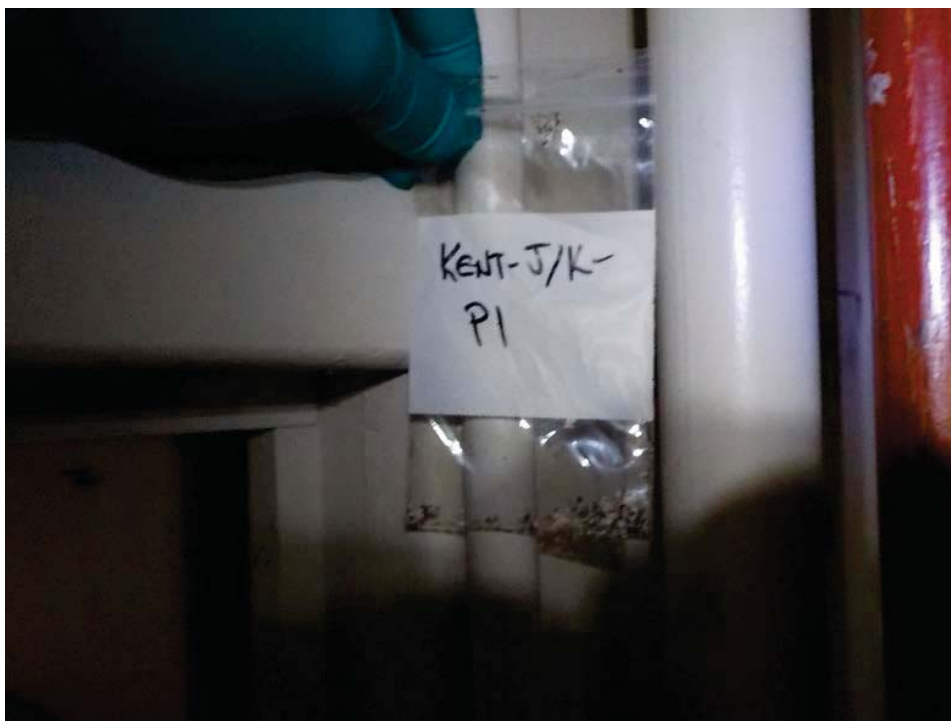
DATE: 2016-01-19
SCALE: 1:150
DWG No: 644051-BM26

ATTACHMENT 1

Photographs



Photograph 1: Asbestos-containing black mastic between the window pane and frame of the window facing the Living Unit J stairwell.



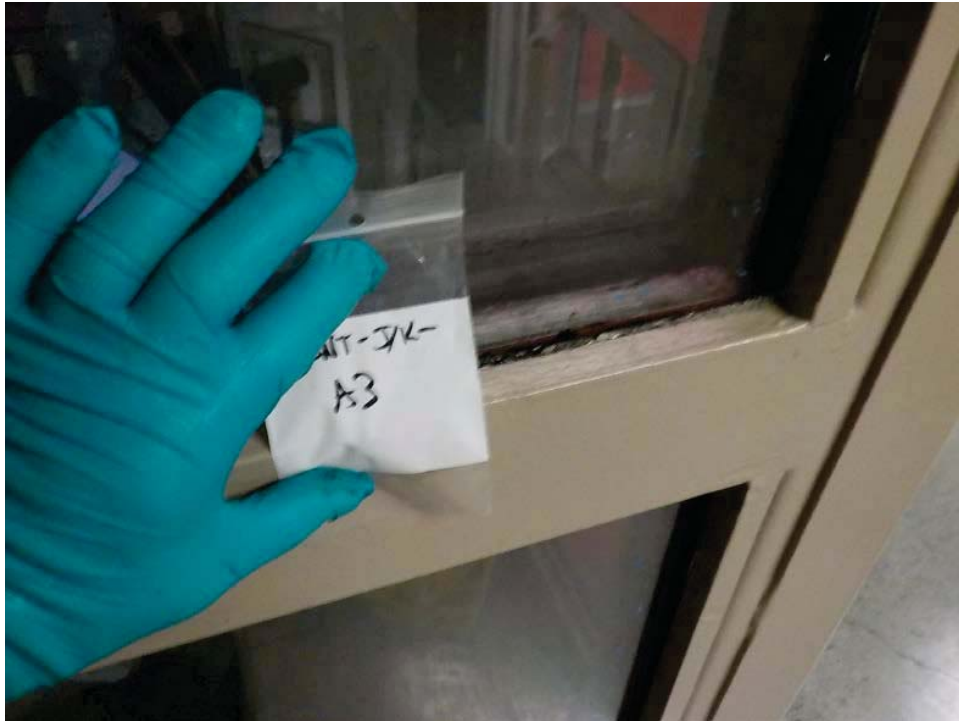
Photograph 2: Lead-containing cream paint on the interior walls and window frames of the control post.



Photograph 3: Lead-containing tan paint on the exterior window frames of the control post.



Photograph 4: Non-Asbestos grey mastic between the window pane and frame on the door facing Living Unit J kitchen.



Photograph 5: Non-Asbestos black mastic between the window pane and frame facing the janitor's room.

ATTACHMENT 2

Laboratory Analytical Report

Attention: Tim Drozda

SNC-LAVALIN INC.
BURNABY, ENVIRONMENT DIVISION
8648 COMMERCE COURT
BURNABY, BC
CANADA V5A 4N6

Your Project #: 644051
Site#: N/A
Site Location: KENT INSTITUTION
Your C.O.C. #: G111384

Report Date: 2017/02/14
Report #: R2345273
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B709826

Received: 2017/02/10, 11:05

Sample Matrix: PAINT
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Elements by ICP-AES (acid extr. solid)	2	2017/02/14	2017/02/14	BBY7SOP-00018	EPA 6010c R3 m

Sample Matrix: Solid
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Asbestos Identification (1)	3	N/A	2017/02/14	BBY5SOP-00020	NIOSH 9002 Issue #2

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) RDL = 0.5%

Attention: Tim Drozda

SNC-LAVALIN INC.
BURNABY, ENVIRONMENT DIVISION
8648 COMMERCE COURT
BURNABY, BC
CANADA V5A 4N6

Your Project #: 644051
Site#: N/A
Site Location: KENT INSTITUTION
Your C.O.C. #: G111384

Report Date: 2017/02/14
Report #: R2345273
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B709826

Received: 2017/02/10 11:05

Encryption Key



VJ Oco
Burnaby Project Manager
14 Feb 2017 15:51:53

Please direct all questions regarding this Certificate
VJ Oco, Burnaby Project Manager
Email: VOco@maxxam.ca
Phone# (604)639-8422

Project Manager.

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B709826
Report Date: 2017/02/14

SNC-LAVALIN INC.
Client Project #: 644051
Site Location: KENT INSTITUTION
Sampler Initials: MAH

ASBESTOS IDENTIFICATION (SOLID)

Maxxam ID		QN4811	QN4812	QN4813	QN4813		
Sampling Date		2017/02/10 07:55	2017/02/10 08:10	2017/02/10 08:30	2017/02/10 08:30		
COC Number		G111384	G111384	G111384	G111384		
	UNITS	KENT-J/K-A1	KENT-J/K-A2	KENT-J/K-A3	KENT-J/K-A3 Lab-Dup	RDL	QC Batch
Asbestos Type							
Actinolite	% vol/vol	<0.5	<0.5	<0.5	<0.5	0.5	8552250
Amosite	% vol/vol	<0.5	<0.5	<0.5	<0.5	0.5	8552250
Anthophyllite	% vol/vol	<0.5	<0.5	<0.5	<0.5	0.5	8552250
Chrysotile	% vol/vol	0.5-10	<0.5	<0.5	<0.5	0.5	8552250
Crocidolite	% vol/vol	<0.5	<0.5	<0.5	<0.5	0.5	8552250
Tremolite	% vol/vol	<0.5	<0.5	<0.5	<0.5	0.5	8552250
Others							
Cellulose	% vol/vol	<0.5	<0.5	<0.5	<0.5	0.5	8552250
Filler	% vol/vol	90-99	>99	>99	>99	0.5	8552250
Glass Fibres	% vol/vol	<0.5	<0.5	<0.5	<0.5	0.5	8552250
Hair	% vol/vol	<0.5	<0.5	<0.5	<0.5	0.5	8552250
Other Fibers	% vol/vol	<0.5	<0.5	<0.5	<0.5	0.5	8552250
RDL = Reportable Detection Limit							
Lab-Dup = Laboratory Initiated Duplicate							

Maxxam Job #: B709826
Report Date: 2017/02/14

SNC-LAVALIN INC.
Client Project #: 644051
Site Location: KENT INSTITUTION
Sampler Initials: MAH

LEAD IN PAINT CHIPS (PAINT)

Maxxam ID		QN4809	QN4810		
Sampling Date		2017/02/10 08:05	2017/02/10 08:25		
COC Number		G111384	G111384		
	UNITS	KENT-J/K-P1	KENT-J/K-P2	RDL	QC Batch
Total Metals by ICP					
Total Lead (Pb)	mg/kg	735	224	3.0	8551971
RDL = Reportable Detection Limit					

Maxxam Job #: B709826
Report Date: 2017/02/14

SNC-LAVALIN INC.
Client Project #: 644051
Site Location: KENT INSTITUTION
Sampler Initials: MAH

GENERAL COMMENTS

For Asbestos:

Filler = Non-fibrous material
All layers found are homogeneous
Site Location: Kent Institution

Sample QN4811 [KENT-J/K-A1] : 1 layer: Black mix

Sample QN4812 [KENT-J/K-A2] : 1 layer: Black mix

Sample QN4813 [KENT-J/K-A3] : 1 layer: Black mix

Results relate only to the items tested.

Maxxam Job #: B709826
Report Date: 2017/02/14

QUALITY ASSURANCE REPORT

SNC-LAVALIN INC.
Client Project #: 644051
Site Location: KENT INSTITUTION
Sampler Initials: MAH

QC Batch	Parameter	Date	Method Blank		RPD		QC Standard	
			Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8551971	Total Lead (Pb)	2017/02/14	<3.0	mg/kg	2.3	35	99	80 - 120
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.								
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.								
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.								

CHAIN OF CUSTODY RECORD

G 111384

BBY FCD-00077/05

Burnaby, 4606 Canada Way, Burnaby, BC V5G 1K5, Toll Free (800) 665-8566

Page 1 of 1

Invoice Information		Report Information (If differs from invoice)		Project Information (Where applicable)		Turnaround Time (TAT) Required	
Company Name:	Contact Name:	Company Name:	Contact Name:	Quotation #:	Project #:	Regular TAT 5 days (Most analyses)	Rush TAT (Surcharges will be applied)
SN-Land-Inc.	Tim Dzieda/Maxxam	ASAR Left		644051	644051	<input type="checkbox"/> Regular TAT 5 days (Most analyses)	<input type="checkbox"/> Rush TAT (Surcharges will be applied)
Address: 8648 Commerce Court	Address: Burnaby, BC V5A 4H6	Address: PC	Address: PC	Site Location: N/A	Site #:	<input type="checkbox"/> Same Day	<input type="checkbox"/> 2 Days
Phone: 604-555-5151	Phone: 604-555-5151	Phone: cc results to	Phone: cc results to	Site #:	Site #:	<input checked="" type="checkbox"/> 1 Day	<input type="checkbox"/> 3 Days
Email: tim.dzieda@snlandinc.com	Email: tim.dzieda@snlandinc.com	Email: caranball@snlandinc.com	Email: caranball@snlandinc.com	Sampled By: MAM	Sampled By: MAM	Date Required:	
Regulatory Criteria		Special Instructions		Analysis Requested		Rush Confirmation #:	
<input type="checkbox"/> BC CSR Soil <input type="checkbox"/> CCME (Specify) <input checked="" type="checkbox"/> Paint DL < 90 mg/kg <input type="checkbox"/> Drinking Water <input type="checkbox"/> BC CSR Water <input type="checkbox"/> Other (Specify)	<input type="checkbox"/> Return Cooler <input type="checkbox"/> Ship Sample Bottles (Please Specify)	Analysis Requested TSS, pH, Conductivity, Ammonia, Nitrate, Nitrite, Chloride, Fluoride, Sulfate, Total Mercury, Field Preserved? Total Metals, Field Preserved? Dissolved Mercury, Filtered? Dissolved Metals, Filtered? CCME-PHC, BTEX/F1, PAH, LEPH/HEPH, TEH, VOC/MPH, MTBE, BTEX/MPH		LABORATORY USE ONLY CUSTODY-SEAL Y/N Present NA Intact NA COOLING MEDIA PRESENT Y N COMMENTS		HOLD - DO NOT ANALYZE # OF CONTAINERS SUBMITTED	
SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM		Time Sampled (HH:MM)		Time (HH:MM)		TIME (HH:MM)	
Sample Identification	Lab Identification	Date Sampled (YYYY/MM/DD)	Time Sampled (HH:MM)	Time (HH:MM)	DATE (YYYY/MM/DD)	TIME (HH:MM)	MAXXAM JOB #
1 KANT-J/K-P1		2017-Feb-10	0805	0805	2017/02/10	11:05	
2 KANT-J/K-P2		2017-Feb-10	0825	0825	2017/02/10	11:05	
3 KANT-J/K-A1		2017-Feb-10	0755	0755	2017/02/10	11:05	
4 KANT-J/K-A2		2017-Feb-10	0810	0810	2017/02/10	11:05	
5 KANT-J/K-A3		2017-Feb-10	0830	0830	2017/02/10	11:05	
6							
7							
8							
9							
10							
RELINQUISHED BY: (Signature/Print)		DATE: (YYYY/MM/DD)		TIME: (HH:MM)		RECEIVED BY: (Signature/Print)	
M. Dzieda		2017-Feb-10		11:05		Don, Billo Puni	

COC-1020

B709826_COC