

January 24, 2012

XCG File No.: 1-336-22-03-01

Lynn Kumita
Environmental Services
Public Works and Government Services Canada
4900 Yonge Street, 11th Floor
M2N 6A6

**Re: Results of Location-Specific Asbestos Survey within MHL and MHK
Crawlspaces, Millhaven Federal Institution, Bath, Ontario**

Introduction and Background

Public Works and Government Services Canada (PWGSC), on behalf of Correctional Service Canada (CSC), is currently undertaking renovation activities of select showers located in the accommodation units at the Millhaven Maximum Security Institution located in Bath, Ontario. The shower units affected by the renovations are located in Control Unit J and consist of three (3) cell units (identified as cell units K, L and M). PWGSC has retained a contractor to carry out the building deconstruction/demolition under a separate contract.

For reference, PWGSC provided a Designated Substances and Hazardous Materials Survey (DSHMS) completed by Aqua Terre Solutions Inc. (ATSI) entitled "Final DSHMS Report Millhaven Institution, Ref: 06-811" dated October 12, 2006, which notes that:

"Insulation around pipe hangers was observed in the crawlspace (confined space 5). Similar insulation was sample in the MHL (MHL-As-1) and found to contain 70% chrysotile asbestos."

The report further estimates the quantity as "22 (4 inches) in diameter".

It is XCG's understanding from PWGSC that there was insufficient information concerning the type and location of the previously identified asbestos-containing materials within the crawlspaces in order to be able to confirm its presence or location.; therefore, XCG was retained to conduct a location-specific asbestos survey of suspected asbestos-containing materials (ACM) found in the proposed work areas of the MHL and MHK crawlspaces. The location-specific areas were identified by Mr. Duncan Parker (PWGSC) during a preliminary walkthrough with Mr. Dale White (XCG) on December 16, 2011. Based on the walkthrough and a review of the construction drawings by Mr. Parker, the asbestos survey area was limited to the first five (5) metres of the MHL crawlspace and the first eight (8) metres of the MHK crawlspace, as measured from the access door.



Survey Methodology

The survey included a thorough visual inspection of all accessible areas that will be affected by the forthcoming renovation activities within the crawlspaces of MHK and MHL, as described above. The location and identification of each sample was written on duct tape and placed over each sampling location for future identification. In addition, the limit of the inspection was also identified with duct tape on the floor of the crawlspace.

Bulk samples of materials suspected of containing asbestos were collected and submitted to the International Asbestos Testing Laboratory (IATL) in Mt. Laurel, New Jersey, USA, for PLM analysis of asbestos.

All fieldwork was conducted in accordance with XCG's standard field procedures, applicable health and safety legislation, and with applicable PWGSC and CSC safety policies and procedures, where they existed.

Results, Findings and Recommendations

On January 11, 2012, Mr. Greg Mallette of XCG conducted the location specific survey of the above-noted areas within the MHK and MHL crawlspaces with CSC representative Suzanna Ronan (Millhaven Institution Environmental Officer) present. Site photos of both MHK and MHL crawlspaces have been included in Appendix A. The crawlspace was approximately 1.2 metres in height and contained a large number of insulated pipes of different sizes and configurations. Suspected asbestos-containing materials sampled included fibrous canvas pipe jacketing including plaster, fibrous canvas supply air ducting jacketing including plaster, and suspect floor debris. All pipe and ductwork insulation was inspected and found to be fibreglass, a known non-asbestos-containing material; therefore, no insulation samples were collected.

A total of twenty-three (23) samples were collected and later submitted to IATL for PLM analyses. The summarized analytical results for the samples collected from the MHK and MHL crawlspaces are provided below in Tables 1 and 2, respectively. The laboratory certificates of analysis are included in Appendix B.



Table 1 **Summary of Asbestos Results for MHK Crawl Space, Millhaven Institution**

Sample ID	Sample Location	Sample Description	Asbestos Content
Asb-01A	MHK Crawl Space	Off-White Fibrous Canvas Jacketing (Supply Air Ducting)	None Detected
Asb-01B	MHK Crawl Space	Off-White Fibrous Canvas Jacketing (Supply Air Ducting)	None Detected
Asb-01C	MHK Crawl Space	Off-White Fibrous Canvas Jacketing (Supply Air Ducting)	None Detected
Asb-01D	MHK Crawl Space	Off-White Fibrous Canvas Jacketing (Supply Air Ducting)	None Detected
Asb-01E	MHK Crawl Space	Off-White Fibrous Canvas Jacketing (Supply Air Ducting)	None Detected
Asb-02A	MHK Crawl Space	Yellow Fibrous Canvas Jacketing	None Detected
Asb-02B	MHK Crawl Space	Yellow Fibrous Canvas Jacketing	None Detected
Asb-02C	MHK Crawl Space	Yellow Fibrous Canvas Jacketing	None Detected
Asb-03A	MHK Crawl Space	Green Fibrous Canvas jacketing	None Detected
Asb-03B	MHK Crawl Space	Green Fibrous Canvas jacketing	None Detected
Asb-03C	MHK Crawl Space	Green Fibrous Canvas jacketing	None Detected
Asb-04A	MHK Crawl Space	Brownish Grey Floor Debris	None Detected
Asb-04B	MHK Crawl Space	Brownish Grey Floor Debris	None Detected
Asb-04C	MHK Crawl Space	Brownish Grey Floor Debris	None Detected
Notes: 1. The location and identification of each sample was written on duct tape and placed over each sampling location for easy identification. 2. The survey area includes only the first eight metres of the crawlspace.			



Table 2 Summary of Asbestos Results for MHL Crawl Space, Millhaven Institution

Sample ID	Sample Location	Sample Description	Asbestos Content
Asb-05A	MHL Crawl Space	Off-White Fibrous Canvas Jacketing (Supply Air Ducting)	None Detected
Asb-05B	MHL Crawl Space	Off-White Fibrous Canvas Jacketing (Supply Air Ducting)	None Detected
Asb-05C	MHL Crawl Space	Off-White Fibrous Canvas Jacketing (Supply Air Ducting)	None Detected
Asb-06A	MHL Crawl Space	Yellow Fibrous Canvas Jacketing	None Detected
Asb-06B	MHL Crawl Space	Yellow Fibrous Canvas Jacketing	None Detected
Asb-06C	MHL Crawl Space	Yellow Fibrous Canvas Jacketing	None Detected
Asb-07A	MHL Crawl Space	Green Fibrous Canvas jacketing	None Detected
Asb-07B	MHL Crawl Space	Green Fibrous Canvas jacketing	None Detected
Asb-07C	MHL Crawl Space	Green Fibrous Canvas jacketing	None Detected
Notes: 1. The location and identification of each sample was written on duct tape and placed over each sampling location for easy identification. 2. The survey area includes only first five metres of the crawlspace.			

Under Occupational Health and Safety Act (OHSA) – R.R.O. 1990, Regulation 837 (as amended) and O. Reg. 278/05 respecting asbestos, ACM is defined as a material containing 0.5% or more of asbestos. Based on this criterion, none of the collected and analyzed samples were found to contain asbestos.

Although asbestos-containing insulation around pipe hangers was previously identified outside the surveyed area in the provided ATSI report, none were observed in the surveyed areas.

Precautions should be taken when working in the vicinity of any suspected asbestos-containing materials to ensure that the asbestos-containing materials are not disturbed. If during renovation activities, suspected asbestos-containing materials are uncovered as part of insulation removal around pipe hangers, it is recommended that those areas be repaired/abated using proper asbestos abatement procedures, such as glove bag. If abatement activities are required they should be conducted by contractors that are licensed and insured for this type of abatement work. Disposal of the ACM waste should be made by a licensed contractor at a facility that accepts such waste.

Limitations

The findings of this report are based upon samples collected by XCG Consultants Ltd. This report includes the analytical results for asbestos analysis of submitted samples only. It is possible that conditions between and beyond the sampling locations differ



from those identified based on the sampling conducted. As noted above, the asbestos survey was limited to the first (5) metres of MHL crawlspace and the first eight (8) metres of MHK crawlspace.

The scope of this report is limited to the matters expressly covered. This report is prepared for the sole benefit of Public Works and Government Services Canada (PWGSC), Correctional Service Canada (CSC), and PWGSC authorized contractors, and may not be relied upon by any other person or entity without the written authorization of XCG Consultants Ltd. Any use or reuse of this document (or the findings, conclusions or recommendations represented herein), by parties other than PWGSC or CSC, is at the sole risk of those parties.

Closure

Should you have any questions regarding the above, please do not hesitate to contact the undersigned.

Yours very truly,

XCG CONSULTANTS LTD.

A handwritten signature in black ink, appearing to read 'Dale White', written in a cursive style.

Dale White
Project Manager

A handwritten signature in blue ink, appearing to read 'Kevin Shipley', written in a cursive style.

Kevin Shipley, M.A.Sc., P.Eng., EP(CEA), CEAS, QP_{RA}
Partner/Kingston Office Manager

Appendices: Appendix A Site Photos
 Appendix B Laboratory Certificates on Analysis

APPENDIX A
SITE PHOTOS OF MHL AND MHK CRAWLSPACES



Photo 1: MHK Crawspace Yellow Canvas Jacketed Piping.



Photo 2 & 3: MHK Crawspace Green Canvas Jacketed Piping



Photo 4: MHK Crawspace White Canvas Jacketed Supply Air Ducting.



Photo 5 & 6: MHL Crawlspace Yellow and Green Canvas Jacketed Piping.
Note joist hangers are free of plaster.



Photo 7: MHL Crawlspace.



Photo 8: MHL Crawlspace White Canvas Jacketed Supply Air Ducting.

APPENDIX B
LABORATORY CERTIFICATES OF ANALYSIS

CERTIFICATE OF ANALYSIS

Client: XCG Consultants Ltd.
6 Cataraqui St; Woolen Mill
Kingston Ontario K7K 1Z7

Report Date: 1/13/2012
Report No: 261367
Project: Millhaven MHK & MHL
Project No.: 1-336-22-03-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4529410	Description / Location: Off-White Fibrous
Client No.: Asb-01A	Canvas Jacketing-K Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
10	Cellulose
<u>% Non-Fibrous Material</u>	
	90

Lab No.: 4529411	Description / Location: Off-White Wrap
Client No.: Asb-01B	Canvas Jacketing-K Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
95	Cellulose
<u>% Non-Fibrous Material</u>	
	5

Lab No.: 4529412	Description / Location: Off-White Wrap
Client No.: Asb-01C	Canvas Jacketing-K Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
95	Cellulose
<u>% Non-Fibrous Material</u>	
	5

Lab No.: 4529413	Description / Location: Off-White Wrap
Client No.: Asb-01D	Canvas Jacketing-K Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
90	Cellulose
<u>% Non-Fibrous Material</u>	
	10

Accreditation

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA-LAP, LLC No. 100188

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Analytical Method:

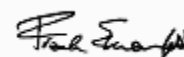
EPA 600/R-93/116

Comments:

(PC) Indicates Stratified Point Count Method performed. Method not performed unless stated. Quantification at <0.25% by volume is possible with this method. (PC-Trace) represents this limit of quantitation. (PC-Trace) means that asbestos was detected but is not quantifiable under the Point Counting regimen. Analysis includes all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed. Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, negative PLM results cannot be guaranteed. Electron Microscopy can be used as a confirming technique. Regulatory Limit is based upon the sample matrix.

Analysis Performed By: E. Smith

Approved By:



Date: 1/13/2012

Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

Client: XCG Consultants Ltd.
6 Cataraqui St; Woolen Mill
Kingston Ontario K7K 1Z7

Report Date: 1/13/2012
Report No: 261367
Project: Millhaven MHK & MHL
Project No.: 1-336-22-03-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4529414	Description / Location: Off-White Wrap
Client No.: Asb-01E	Canvas Jacketing-K Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
95	Cellulose
	<u>% Non-Fibrous Material</u>
	5

Lab No.: 4529415	Description / Location: Lt. Tan Wrap
Client No.: Asb-02A	Pipe Canvas-K Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
80	Cellulose
3	Fibrous Glass
	<u>% Non-Fibrous Material</u>
	17

Lab No.: 4529416	Description / Location: Lt. Tan Wrap
Client No.: Asb-02B	Pipe Canvas-K Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
80	Cellulose
3	Fibrous Glass
	<u>% Non-Fibrous Material</u>
	17

Lab No.: 4529417	Description / Location: Lt. Tan Wrap
Client No.: Asb-02C	Pipe Canvas-K Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
80	Cellulose
10	Fibrous Glass
	<u>% Non-Fibrous Material</u>
	10

Accreditation NIST-NVLAP No. 101165-0 NY-DOH No. 11021 AIHA-LAP, LLC No. 100188

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Analytical Method: EPA 600/R-93/116

Comments: (PC) Indicates Stratified Point Count Method performed. Method not performed unless stated. Quantification at <0.25% by volume is possible with this method. (PC-Trace) represents this limit of quantitation. (PC-Trace) means that asbestos was detected but is not quantifiable under the Point Counting regimen. Analysis includes all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed. Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, negative PLM results cannot be guaranteed. Electron Microscopy can be used as a confirming technique. Regulatory Limit is based upon the sample matrix.

Analysis Performed By: E. Smith

Date: 1/13/2012

CERTIFICATE OF ANALYSIS

Client: XCG Consultants Ltd.
6 Cataraqui St; Woolen Mill
Kingston Ontario K7K 1Z7

Report Date: 1/13/2012
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Project: Millhaven MHK & MHL
Project No.: 1-336-22-03-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4529418	Description / Location: Black/Green/Off-White Wrap
Client No.: Asb-03A	Pipe Canvas-K Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
10	Fibrous Glass
<u>% Non-Fibrous Material</u>	
	90

Lab No.: 4529419	Description / Location: Off-White/Green Wrap
Client No.: Asb-03B	Pipe Canvas-K Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
90	Cellulose
3	Fibrous Glass
<u>% Non-Fibrous Material</u>	
	7

Lab No.: 4529420	Description / Location: Off-White/Green Wrap
Client No.: Asb-03C	Pipe Canvas-K Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
80	Cellulose
<u>% Non-Fibrous Material</u>	
	20

Lab No.: 4529421	Description / Location: Tan Pipe Insulation
Client No.: Asb-04A	Debris On Floor-K Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
10	Cellulose
<u>% Non-Fibrous Material</u>	
	90

Accreditation NIST-NVLAP No. 101165-0 NY-DOH No. 11021 AIHA-LAP, LLC No. 100188

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Analytical Method: EPA 600/R-93/116

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Analysis Performed By: E. Smith

Date: 1/13/2012

CERTIFICATE OF ANALYSIS

Client: XCG Consultants Ltd.
6 Cataraqui St; Woolen Mill
Kingston Ontario K7K 1Z7

Report Date: 1/13/2012
Report No: 261367
Project: Millhaven MHK & MHL
Project No.: 1-336-22-03-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4529422	Description / Location: Grey Pipe Insulation
Client No.: Asb-04B	Debris On Floor-K Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
95	Cellulose
	<u>% Non-Fibrous Material</u>
	5

Lab No.: 4529423	Description / Location: Grey Pipe Insulation
Client No.: Asb-04C	Debris On Floor-K Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
97	Cellulose
	<u>% Non-Fibrous Material</u>
	3

Lab No.: 4529424	Description / Location: Lt. Tan/Silver Wrap
Client No.: Asb-05A	Canvas Jacketing-L Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
70	Cellulose
10	Fibrous Glass
	<u>% Non-Fibrous Material</u>
	20

Lab No.: 4529425	Description / Location: Off-White/Silver Wrap
Client No.: Asb-05B	Canvas Jacketing-L Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
80	Cellulose
3	Fibrous Glass
	<u>% Non-Fibrous Material</u>
	17

Accreditation NIST-NVLAP No. 101165-0 NY-DOH No. 11021 AIHA-LAP, LLC No. 100188

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Analytical Method: EPA 600/R-93/116

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Analysis Performed By: E. Smith

Date: 1/13/2012

CERTIFICATE OF ANALYSIS

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Report Date: 1/13/2012
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Project No.: 1-336-22-03-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4529426	Description / Location: Lt. Tan Fibrous
Client No.: Asb-05C	Canvas Jacketing-L Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
2	Cellulose
	<u>% Non-Fibrous Material</u>
	98

Lab No.: 4529427	Description / Location: Lt. Tan Wrap
Client No.: Asb-06A	Pipe Canvas-L Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
90	Cellulose
3	Fibrous Glass
	<u>% Non-Fibrous Material</u>
	7

Lab No.: 4529428	Description / Location: Lt. Tan Wrap
Client No.: Asb-06B	Pipe Canvas-L Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
80	Cellulose
2	Fibrous Glass
	<u>% Non-Fibrous Material</u>
	18

Lab No.: 4529429	Description / Location: Tan Fibrous
Client No.: Asb-06C	Pipe Canvas-L Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
5	Fibrous Glass
	<u>% Non-Fibrous Material</u>
	95

Accreditation **NIST-NVLAP No. 101165-0** **NY-DOH No. 11021** **AIHA-LAP, LLC No. 100188**

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Analytical Method: EPA 600/R-93/116

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Analysis Performed By: E. Smith

Date: 1/13/2012

CERTIFICATE OF ANALYSIS

Client: XCG Consultants Ltd.
6 Cataraqui St; Woolen Mill
Kingston Ontario K7K 1Z7

Report Date: 1/13/2012
Report No: 261367
Project: Millhaven MHK & MHL
Project No.: 1-336-22-03-01

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4529430	Description / Location: Green/Off-White Wrap
Client No.: Asb-07A	Pipe Canvas-K Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
90	Cellulose
<u>% Non-Fibrous Material</u>	
	10

Lab No.: 4529431	Description / Location: Green/Off-White Fibrous
Client No.: Asb-07B	Pipe Canvas-K Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
3	Fibrous Glass
<u>% Non-Fibrous Material</u>	
	97

Lab No.: 4529432	Description / Location: Green/Lt.Tan Wrap
Client No.: Asb-07C	Pipe Canvas-K Crawl Space
<u>% Asbestos</u>	<u>Type</u>
None Detected	None Detected
<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
65	Cellulose
10	Fibrous Glass
<u>% Non-Fibrous Material</u>	
	25

Accreditation

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA-LAP, LLC No. 100188

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Analytical Method:

EPA 600/R-93/116

Comments:

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Date: 1/13/2012