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**DESIGNATED SUBSTANCES AND HAZARDOUS MATERIALS SURVEY
WARKWORTH INSTITUTION
CAMPBELLFORD, ONTARIO**


Prepared for:

**PUBLIC WORKS AND GOVERNMENT SERVICES CANADA
REAL PROPERTY SERVICES, ENVIRONMENTAL SERVICES, ONTARIO REGION
4900 Yonge Street, 11th Floor
Toronto, Ontario
M2N 6A6**

Attention: Mr. Lee Chan


Basil Wong, M.Eng., P.Eng.
Senior Project Manager


Kevin Shipley, M.A.Sc., P.Eng., CEA, CEAS
Partner


Andreas Kouremenos, B.A.Sc., E.I.T.
Environmental Site Assessor

XCG Consultants Ltd.
Suite 300
2620 Bristol Circle
Oakville, ON
Canada
L6H 6Z7
Tel: (905) 829-8880
Fax: (905) 829-8890
E-mail:
Toronto@xcg.com

EXECUTIVE SUMMARY

XCG Consultants Ltd. (XCG) was retained by Public Works and Government Services Canada (PWGSC), acting on behalf of Correctional Service of Canada (CSC), to survey forty-seven (47) buildings for designated substances and hazardous materials (DSHM) at the Warkworth Medium Security Correctional Institution in Campbellford, Ontario.

The designated substances surveyed were those designated under the *Ontario Occupational Health and Safety Act* and included (but were not limited to) asbestos, lead, mercury and silica. The hazardous materials surveyed included polychlorinated biphenyl (PCB)-containing equipment, ozone-depleting substances (ODSs), urea formaldehyde foam insulation (UFFI), fuel, oil, and/or waste oil storage, chemical storage, radioactive materials, and mould.

The findings and recommendations, with Class “D” cost estimates (excluding GST), of the 2005 Survey completed at the Warkworth Institution are as follows:

Asbestos

Asbestos in the form of insulating pipe straights and elbows, and vinyl floor tiles were identified in several buildings. XCG based its recommendations on the Action Matrix outlined in the PWGSC document entitled *DM Directive 057- Asbestos Management* (1997), as adopted by the Treasury Board. The recommended actions are based on the condition and accessibility of the material.

In general, most of asbestos-containing materials (ACMs) were in good condition and had an access classification of “A”, which are areas of the building within reach (from floor level) of all building users. Most of the items in this category consisted of vinyl floor tiles. In accordance with DM Directive 057, the recommendation for non-friable ACMs in good condition (i.e. vinyl floor tiles) is Action 7, which is to conduct routine surveillance of the ACMs. Other ACMs in good condition with Access A consist of pipe elbow insulation, but these are minor compared to the area of asbestos-containing vinyl floor tiles. The recommendation for these ACMs is Action 5/7. Action 5 is proactive removal of ACMs. If this is not conducted, then Action 7 is required. The recommendation for ACMs in good condition with Access A is to develop and implement an asbestos management and monitoring plan that conforms to the requirements of Ontario Regulation 838 (amended to 104/04). The buildings that would be applicable to the Action 7 recommendation include: WA01, WA04, WA05, WW03, WW05, WW06, WW07, WW08, WW09, WW10, WW11, WW12, WW13, WW14, WW15, WW16, WW18, WW19, WW22, WW24, WW26, and WW27.

The cost to develop the asbestos management and monitoring plan is approximately \$8,000. The program would likely be implemented internally by a Warkworth

Institution site staff member. Therefore, costs have not been included for the actual implementation of the plan.

There were also a few areas that require mitigative action based on the DM Directive 057 matrix.

The unit cost estimates used to determine approximate total costs are based on typical unit rates for a qualified contractor to perform this work. Allowances for engineering services which include coordination, supervision, and formal reporting are not included.

As shown in the summary table below, 7 buildings have been identified as requiring mitigative measures (Actions 3, 5, or 6) for asbestos for an estimated total cost of \$17,500.

Summary of Asbestos Mitigative Measures and Class D Cost Estimates

Building No. and Name	Room	Elbows (No.)	Runs (m)	Action	Mitigation Type (1,2,3)	Unit Cost	Total Cost
WA01 – Finance and Personnel Building	104	16	20	6/5	2	\$25	\$2,500*
WA04 – General Stores Building	108	4	-	5/6	2	\$35	\$2,500*
WW15 – S.I.S. Building	102	8	-	6	2	\$25	\$2,500*
WW07 – Hospital Building	139	33	-	3	2	\$35	\$2,500*
WW09 – Accommodation Building (Unit 1)	102	5-10	-	6	2	\$25	\$2,500*
WW12 – Inmate Canteen / Hobby Craft Building	209	20-30	-	3	2	\$35	\$2,500*
WW18 – Industrial Shops Building	146	-	6.5	3	2	\$35	\$228
	201	15-30	1.5	6/5	2	\$25	788
Total for Building WW18							\$2,500*
Total Estimated Mitigation Cost							\$17,500

Notes:

* - Minimum contractor charge for small quantity work

Lead

Lead-based paint was detected in several buildings. The condition of these lead-based paints ranged from good to fair. There is no regulatory requirement to remove lead-based paint; however, renovations or demolition, and disposal of materials containing this paint should be conducted according to the applicable regulations. All lead-based paint repair work should be managed in accordance with Regulation 843 (amended to O. Reg. 109/04). Table 50.2 provides a summary of areas containing lead-based paint and Class D cost estimates in the event that renovation or demolition work is conducted.

There are various methods to address the lead-based paint if renovations are to be conducted (e.g. repainting the wall), including scraping, power washing, and sand blasting. XCG assumed that the scraping method would be used and based the estimates on a unit rate of \$65/m². It is assumed that any lead abatement work would be conducted separately for each building (i.e. as required) and a contractor would charge a minimum of \$2,000 for a small quantity project.

Summary of Lead-Based Paint Mitigative Measures and Class D Cost Estimates

Building No. and Name	Room	Location and Description	Condition	Lead Content (ppm)	Estimated Quantity (m ²)	Unit Cost (/ m ²)	Total Cost
WA01 – Finance and Personnel Building	114	Lime green paint on wall	Good	8,203	36	\$65	\$2,340
WA04 – General Stores Building	101	Bright yellow paint on garage door	Good	9,044	40	\$65	\$2,600
WA05 – Central Heating Plant	109	Red door paint	Good	15,792	3	\$65	\$195
	111	Grey-brown wall paint	Poor	10,951	61	\$65	\$3,965
Total for Building WA05							\$4,160
WA07 – Inflammable Stores Building	101	Yellow door trim paint	Fair	6,258	8	\$65	\$2,000*
WA08 – Fire Hall	101	Blue door paint from mock cells	Good	10,926	6	\$65	\$2,000*
WW03 – Administrative Building	102	Green door and wall paint on hall side	Good	9,775	10	\$65	\$650
	130	Orange door paint	Good	55,693	4	\$65	\$260
Total for Building WW03							\$2,000*
WW06 – Segregation Building	101, 116	White wall paint on upper half of corridor	Good	7,006	197	\$65	\$12,805
	116	Yellow door trim	Good	7,354	4	\$65	260
Total for Building WW06							\$13,065
WW08 – Accommodation Building (Unit 4)	A19	Mocha wall paint on interior north wall	Good	13,362	7.5	\$65	\$2,000
WW09 – Accommodation Building (Unit 1)	H109	Purple wall paint	Good	5,128	67	\$65	\$4,355
WW10 – Accommodation Building (Unit 2)	H109	Brown door trim	Good	6,787	16	\$65	\$2,000
WW11 – Accommodation	106 actual	White wall and ceiling	Good	5,055	403	\$65	\$26,195

Summary of Lead-Based Paint Mitigative Measures and Class D Cost Estimates

Building No. and Name	Room	Location and Description	Condition	Lead Content (ppm)	Estimated Quantity (m ²)	Unit Cost (/ m ²)	Total Cost
Building (Unit 3) (104, 105, 106, B, D, F ranges, H103)	sample	paint					
	G106	Dark blue wall paint	Good	5,254	63	\$65	\$4,095
Total for Building WW11							\$30,290
WW13 – Cafeteria Building (118, 101B, 109, 119, 121)	118 actual sample	Sky blue	Good	17,800	65	\$65	\$4,225
	141	Grey	Poor	68,583	28	\$65	\$1,820
Total for Building WW13							\$6,045
WW18 – Industrial Shops Building	106	Cream over rusty red, upper part of wall	Good	8,969	606	\$65	\$39,390
	106	Grey over red, lower part of wall	Good	12,509	225	\$65	\$14,625
	142	Light brown, lower half of wall	Fair	11,399	182	\$65	\$11,830
	144	Green wall	Good	13,060	156	\$65	\$10,140
	146	Mocha over cream on garage door	Fair	9,923	40	\$65	\$2,600
	154	Green trim on wood	Good	25,963	15	\$65	\$975
Total for Building WW18							\$79,560
WW31 – Accommodations Building (80-Man Unit)	M02	Yellow paint on doors, railings, and pipes	Poor	10,052	10	\$65	\$2,000
Total Estimated Mitigation Cost							\$154,415

Notes:

* - Minimum contractor charge for small quantity work

The above unit cost estimates are based on typical unit rates for a qualified contractor to perform this work. Allowances for engineering services which include coordination, supervision, and formal reporting are not included.

Any lead abatement work needs to be conducted in accordance with Ontario Regulation 843, amended to O. Reg. 109/04 and the Ministry of Labour document entitled “Guideline, Lead on Construction Projects,” dated September 2004.

Mercury

Small quantities of mercury are present in some of the buildings and include thermostats, thermometers, fluorescent light bulbs, and high intensity discharge (HID) lamps. There is no regulatory requirement to remove mercury. As such, there are no recommendations for mitigative measures. However, if the mercury-containing thermostats, fluorescent lights, and/or HIDs are to be removed, they must be handled and disposed of in accordance with Ontario Regulation 844/90 (amended to O. Reg. 110/04) and Ontario Regulation 347 (amended to O. Reg. 326/03).

Silica

Silica is likely present in concrete, concrete blocks, and bricks in each building. Should renovations or demolition include the cutting or breaking of this material, appropriate precautions should take place to prevent inhalation of silica-containing dust. Any silica disturbance work needs to be conducted in accordance with Ontario Regulation 845 (amended to O. Reg. 111/04) and the Ministry of Labour document entitled “Guideline, Silica on Construction Projects,” dated September 2004.

Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. CSC staff reported to XCG that most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution. Selected light ballasts that were inspected by XCG did not contain PCBs.

There were numerous fluorescent light fixtures that XCG did not access to verify the PCB content because of the height of the ceilings. If these fixtures are taken out of service in the future, they should be checked to confirm that they in fact do not contain PCBs. If they do contain PCBs, the light ballasts should be managed in accordance with the applicable regulations, including O. Reg. 347 (amended to O. Reg. 326/03), O. Reg. 362/90, SOR91-152, SOR92/502, and the Transportation of Dangerous Goods Act and Regulations.

Ozone-Depleting Substances (ODSs)

There are numerous refrigeration and air conditioning units throughout the facility that contain ODSs. Although there is no current requirement to remove ODSs from active units, any repair, maintenance or decommissioning of equipment containing halocarbons must be performed in accordance with the Federal Halocarbon Regulations and Ontario Regulation 189/04 (amended to O. Reg. 238/01).

Urea Formaldehyde Foam Insulation

No UFFI was identified in any of the buildings during the current survey.

Fuel, Oil and Waste Oil Storage

The facility has four aboveground storage tanks and four underground storage tanks containing gasoline, diesel, and fuel oil. Aboveground storage tanks 460-05 and 460-06 should be equipped with emergency spill kits and fire extinguishers should be provided nearby. This would cost approximately \$500.

Several jerry cans of fuel observed throughout the property should be affixed with a property Workplace Label indicating their contents. In addition, they should be provided with secondary containment when they are stored to contain any potential leaks. This would cost approximately \$500.

Two waste oil containers and some small containers of oil that appeared to be no longer used should be disposed of off-site. This would cost approximately \$500.

Chemical Storage

Various chemicals are storage in numerous buildings (e.g. solvents, paints, floor strippers, etc.). An inventory of hazardous chemicals should be developed and posted at each storage area. This would cost approximately \$7,000. All decanted products should be affixed with an appropriate Workplace Hazard Label as specified by Workplace Hazardous Materials Information System (WHMIS) regulation. This would cost approximately \$500.

Material Safety Data Sheets (MSDS) information shall be placed near or in any storage areas that contain chemicals. This would cost approximately \$1,000.

Various unused chemicals, including two 205-litre drums labelled “Toxic Waste” and “Hazardous Waste” shall be disposed of off-site by a licensed hauler. This would cost approximately \$1,000.

Radioactive Materials

No radioactive materials were observed in this building during the current survey.

Mould

Water damage was observed in three of the four Private Family Duplex Units, with evidence of potential mould growth noted in two of the buildings. This water damage should be corrected and future leaks mitigated. A sampling study to determine if any and where mould growth may be occurring should be conducted. The mould investigation would cost approximately \$8,000.

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1. INTRODUCTION

XCG Consultants Ltd (XCG) was retained by Public Works and Government Services Canada (PWGSC), acting on behalf of Correctional Service of Canada (CSC), to conduct a Designated Substances and Hazardous Materials Survey (DSHMS) of the forty-seven (47) buildings located at the Warkworth Institution.

1.1 Site Description

Warkworth Institution is a medium-security correctional facility located in Northumberland County, south of Campbellford, Ontario. It is situated on the south side of Northumberland County Road 29, approximately 2 kilometres east of Highway 30. The facility opened in 1967 and has undergone some recent renovations, resulting in a new 80-bed living unit with an additional 48-cell expansion. Warkworth Institution has a rated capacity of 537 and the actual number of inmates is currently approximately 557. The facility has approximately 300 full-time employees.

The main portion of the subject property covers an area of approximately 76.5 hectares. A separate portion was located approximately 2 kilometres northeast of the main facility, adjacent to the Trent River. This 0.2 hectare property formerly housed a water filtration building and was sold in late-2004 after the institution was connected to the municipal water supply.

The topography of the property is relatively flat with a slight slope to the south from County Road 29. The east and west sides slope gently downward approximately 5 metres. At the south section, the land slopes steeply approximately 10 metres down to a marshy area. The marshy area is part of a tributary to Salt Creek, which approaches the property from the south and joins the tributary at the southeast corner of the subject property. A closed landfill is located at the top of this slope, while a Rifle Range (Building WA18) is cut into the bottom of the slope.

The subject property is surrounded by private agricultural lands on all sides. As indicated in a previous report, agricultural activities conducted on these adjacent lands appear to be beef and dairy cattle, and grain crop operations. There are farm buildings, such as residences and barns, located in close proximity to the Warkworth Institution on the west and east sides, just south of County Road 29.

There are a total of 47 buildings on the subject property. Thirty-three of these buildings are located within the security fencing, while the other 14 are situated outside the fence. As noted above, the water filtration building (Building Number WA10) was formerly located approximately 2 kilometres northeast of the main property. Figure 1-1 is a site location plan, while the facility layout is presented in Figure 1-2. A summary of the site buildings, their use, and year of construction is provided in Table 1.1.

Figure 1-1 Site Location Plan

Figure 1-2 Facility Layout

Table 1.1 Site Buildings

Building No.	Building Use	Year Constructed
WA01	Finance and Personnel Building	1965
WA04	General Stores Building	1965
WA05	Central Heating Plant	1965
WA06	Maintenance Storage Building	1965
WA07	Inflammable Stores Building	1968
WA08	Fire Hall	1968
WA09	Sewage Disposal Building	1992
WA16	Clarification Building	1992
WA18	Rifle Range	1991
WA19	Aggregate Building	1995
WGP12	Guard Post	1977
WGP13	Guard Post	1977
WGP14	Guard Post	1994
WGP15	Guard Post	1995
WW01	Entrance Gate	1965
WW02	Staff and Training Building	1965
WW03	Administration Building	1965
WW04	Programs and SBC Building	1965 (additions in 1997)
WW05	Intensive Support Building	1965
WW06	Segregation Building	1965
WW07	Hospital Building	1965
WW08	Accommodation Building (Unit 4)	1965
WW09	Accommodation Building (Unit 1)	1965
WW10	Accommodation Building (Unit 2)	1965
WW11	Accommodation Building (Unit 3)	1965
WW12	Inmate Canteen/Hobby Craft Building	1965
WW13	Cafeteria Building (Kitchen)	1965
WW14	Catholic Chapel	1967
WW15	S.I.S. Building	1965
WW16	Protestant Chapel	1967
WW17	Education and Library Building	1965 (additions in 1997)
WW18	Industrial Shops Building	1970
WW19	Maintenance Garage	1965
WW21	Field House	1968

Table 1.1 Site Buildings

Building No.	Building Use	Year Constructed
WW22	Works Equipment Storage Building	1965
WW23	Sports Pavilion	1969
WW24	Maintenance Garage Annex	1978
WW25	Sallyport Building	1979
WW26	Sports Complex	1979
WW27	Visitor, Correspondence & Control Centre	1981
WW31	Accommodation Building (80-man Unit)	1990
WW32	Private Family Visit Duplex (Units 1 & 2)	1992
WW33	Warehouse	1992
WW34	Private Family Visit Duplex (Unit 3 & 4)	1994
WW35	Private Family Visit Duplex (Unit 5 & 6)	1994
WW36	Private Family Visit Duplex (Unit 7 & 8)	1994
WW37	Guard Control Post	1997

1.2 Scope of Work

The original scope of work was outlined in XCG's proposal entitled, "Revised Proposal for Environmental Condition and Operations Audit, Millhaven and Warkworth Correctional Institutions," dated May 31, 2004. Some modifications were made at the request of PWGSC and CSC, namely an increase in the number of samples to be collected. The final scope of work was as follows:

- Review previous reports and drawings;
- Prepare a health and safety plan;
- Conduct site inspections and sampling. The designated substances surveyed were those designated under the Ontario Occupational Health and Safety Act and included (but were not limited to) asbestos, lead, mercury and silica. The hazardous materials surveyed included polychlorinated biphenyl (PCB)-containing equipment, ozone-depleting substances (ODSs), urea formaldehyde foam insulation (UFFI), fuel, oil, and/or waste oil storage, chemical storage, radioactive materials, and mould.
- Collect representative building material samples for analytical testing. As requested by PWGSC and CSC, each building was sampled separately to avoid inferring asbestos and lead paint concentrations for similar materials between buildings. A total of 92 building material samples were collected for bulk asbestos analysis using the polarized light microscopy (PLM) method. Also, 140 vinyl floor tile samples were analyzed for asbestos using the transmission electron microscopy (TEM) method. In addition, 260 paint samples were submitted for laboratory analysis of lead;
- Prepare a survey report and provide estimated costs for the mitigation of all designated substances and hazardous materials identified in each of the buildings.

XCG conducted this assessment in conjunction with an Environmental Condition and Operations Audit study. Additional information regarding issues such as petroleum products, hazardous chemicals, and air emissions is provided in a separate Audit Report.

1.3 Project Team

In the performance of this DSHMS, XCG utilized the PWGSC-approved project team comprised of the following staff:

- Mr. Kevin Shipley, M.A.Sc., P.Eng., CEA, CEAS, QA Reviewer;
- Mr. Basil Wong, M.Eng., P.Eng., Senior Project Manager;
- Mr. Andreas Kouremenos, B.A.Sc., E.I.T., Environmental Site Assessor;
- Mr. Kevin Robertson, M.Sc., Environmental Site Assessor; and,
- Mr. Jonathan Ho, CET, Senior Field Technologist.

This project team was selected because of experience with DSHMS and projects directed by PWGSC Environmental Services. XCG used a small project team in order to maintain continuity within the project and minimize duplications during inspections and sampling efforts.

1.4 Report Format

This report is divided into 50 sections with the first being this introduction. Section 2 documents the methods used in the investigation. Sections 3 to 49 present the results of the DSHMS for the forty-seven (47) buildings on a building-by-building basis. Each of these sections includes a brief summary of the building in terms of construction date, other basic information, and the results for each designated substance and hazardous material assessed in each building. Recommendations are not provided within these sections. Rather, Section 50 provides a summary of recommendations for the entire facility for each substance that may be disturbed, handled, and disposed of during future demolition or renovation work. Recommendations are also provided for areas requiring mitigation measures to bring it to compliance. Class “D” cost estimates are provided for each recommendation.

Floor plans are included in the appendices and are identified by the building number and floor number. For example, the floor plans showing the basement and first floor of Building WA06 are labeled as figure number WA06-B and WA06-1, respectively. One set of appendices is provided for each building and is identified by the section number for that particular building (as opposed to the more commonly used nomenclature of Appendix A, B, C, etc.). For example, Building WA01 is described in Section 3 and the appendix is labeled as Appendix 3, for ease of locating. The appendix for each building includes in order, the floor plans, certificates of analyses, and selected photographs for areas of concern (if any), such as exposed asbestos pipe wrap. Photos are not included if there are no issues of concern in a particular building.

1.5 Limitations

The findings of this report are based upon visual observations and a survey of accessible areas of the forty-seven (47) buildings surveyed at the Warkworth

Institution in Campbellford, Ontario, between February 9 and March 2, 2005. While every attempt was made to ensure that samples collected were representative of the general sampling area, it is possible that conditions outside specific sampling locations may differ. Therefore, users of this report are advised to observe conditions prior to conducting any repairs, removal, or renovation/demolition.

This study was limited to a survey of accessible aboveground structures. No destructive work was conducted. As such, conditions below floors, above drywall ceilings, behind walls, and inside service trenches cannot be anticipated at this time. Access to every building in the institution was granted, with the exception of WA18, the Rifle Range. This building, which is located at the bottom of a 10-metre slope, was not inspected because the snow that has accumulated on the access road had not been ploughed. The CSC escort indicated that this building is only used during the summertime. Certain rooms within some of the buildings were also not accessible because keys to unlock them were not available during the site visit. These included WA01 (106), WA05 (M01 and 102), WA06 (B01), WW10 (Rooms H104, H107, and H108), WW11 (H108), WW21 (104, 105, and 106), WW26 (107), and WW31 (M03 and M04). Also, not every inmate cell in the accommodation buildings was surveyed. Approximately one to two cells from each accommodation building were examined, and taken as representative for the rest within the same structure. The CSC escort indicated the cells were all the same.

In cases where buildings and rooms were not surveyed, XCG relied upon information obtained from interviews with CSC representatives and previous documents supplied by PWGSC. Thus, XCG cannot be held responsible for conditions that were not apparent from the interviews conducted with CSC representatives and from documentation supplied to XCG.

This report was not intended to provide direction or procedures for the handling of designated substances and hazardous materials. Only persons with documented, current training in the safe handling of the designated substances and hazardous materials should handle them. Persons handling any of the asbestos-containing materials (ACMs) identified in this survey, or conducting work in the vicinity of these ACMs are advised to consult this survey and individuals with appropriate experience and training, prior to doing so.

The scope of this report is limited to the matters expressly covered. This report is prepared for the sole benefit of Correctional Service of Canada and Public Works and Government Services Canada and may not be relied upon by any other person or entity without written authorization of XCG Consultants Ltd. As such, the scope of services performed in the execution of this investigation may not be appropriate to satisfy the needs of other users. If others use or reuse this document or the findings, conclusions, or recommendations represented herein it is at the sole risk of said users

2. SURVEY METHODOLOGY

Mr. Andreas Kouremenos and Mr. Jonathan Ho conducted the survey at the Warkworth Correctional Institution between February 9 and March 2, 2005. Messrs. Kouremenos and Ho were joined by Mr. Kevin Robertson on March 1, as a second sampling team, for the remainder of the field work.

Prior to commencing the on-site inspections, the document provided by PWGSC entitled "Baseline Environmental Assessment, Warkworth Institution, Volumes 1 to 4" dated March 1999, by SNC Lavalin, Engineers & Constructors Inc. (SNC), was reviewed. In addition, on-site interviews were conducted with Mr. John Sipos, the Acting Chief, Plant Maintenance, Warkworth Institution. Mr. Kenny Foster, Mason Instructor, and Mr. Dan O'Brien, Carpentry Instructor, were XCG's escorts during the inspections and provided information when questions were asked.

Key findings from the information review and the interviews conducted included:

- The Institution formerly treated its own domestic water, but it is now connected to the municipal water distribution system of the Town of Campbellford. This conversion occurred a few years ago (post-1999). The associated water tower was removed in the fall of 2003;
- Any surface that needs re-painting is simply painted over and not scraped;
- Fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. WW18, the Industrial Shops Building, may have some of the older ballasts in it. There are no PCB waste storage sites at the Institution;
- There are currently no halon-containing fire extinguishers at the facility;
- Mercury use at the facility is limited to minor amounts remaining in thermostat switches for temperature control. In addition, fluorescent lamp tubes may contain small amounts of mercury vapour;
- There are no sources of silica at the facility outside of silica contained in concrete and related materials such as brick and ceramic tiles; and
- It is believed that all of the lead pipe and wiring that once existed at the facility has been replaced over time.

All field work was conducted in accordance with XCG's Health and Safety Plan for the subject property. Details regarding the approach used in conducting the field investigations, including sampling procedures and analytical methodologies, are outlined in this section.

2.1 Site Inspections and Sampling

Inspections of 46 of the 47 buildings were conducted. As mentioned in the Section 1.5, Building WA18 (Rifle Range) could not be surveyed due to access limitations. This facility is used only in the summer and the snow covering the route to the building was not ploughed. Mr. Andreas Kouremenos, Mr. Jonathan Ho, and Mr. Kevin Robertson of XCG surveyed the buildings. The survey in each of the buildings was a thorough room-by-room inspection in all accessible areas including:

- above suspended ceiling tiles;
- areas behind inspection panels;
- pipe chases;
- suspended flooring systems; and
- exterior features (cladding, cement pipes, large painted surfaces).

The study was limited to a survey of aboveground structures in areas with reasonable accessibility. As such, conditions within walls, above drywall ceilings, below floors, underground, and in other inaccessible areas could not be accurately determined.

DSHMS are commonly undertaken in a manner that minimizes repetition of inspection and sampling of like areas (e.g. similar pipe chases or floor tiles). However, PWGSC and CSC requested that each building be treated separately, as they wanted to firmly know whether or not certain substances are present within a given building based on analytical testing. PWGSC and CSC did not want to use the results from one building to infer the asbestos or lead concentrations in similar material in another building. However, within a given building, materials that appeared similar from room-to-room were not re-sampled, since it is reasonable to assume that the same materials were used during construction or previous renovation work. XCG made its best effort to sample every different material within a specific building. However, this was not always possible because of access restrictions and safety concerns. For example, insulating pipe wrap on the ceiling in Building WW18 (Industrial Shops Building) could not be sampled safely because it was approximately 5 metres (16.5 feet) high. Sampling for asbestos and lead paint is usually conducted in older buildings suspected to contain these materials (i.e. 1970s and earlier). However, XCG also sampled newer buildings (WW31 – Accommodation Building was built in 1990) in order to firmly verify whether or not these substances are present, to meet PWGSC/CSC's mandate.

During all inspections and sampling within the security fences of the Institution, XCG field staff was accompanied by a representative of CSC on a full-time basis. When outside the security fence, a CSC escort was not required.

All samples were collected and handled according to applicable occupational health and safety regulations. The safety of building occupants was ensured at all times.

2.2 Record Keeping

Prior to on-site inspection and sampling, a unique and logical sample identification system was developed. This sample identification consisted of the following:

- Building number;
- Room number; and,
- Material type followed by the sequential sample number.

For example, WW16-105-FT1 was the first floor tile sample collected in Room 105 of Building WW16.

All sampling locations were recorded on copies of the existing building plans provided by PWGSC and later transferred into the digital CAD drawing. Some

buildings were altered slightly from what was indicated on the site plans. These slight alterations consisted solely of different room configurations, where some rooms may have been added, removed or divided. The room numbers used in this report are the current room numbers, as indicated on the figures in Appendices 3 to 49.

Data tables were developed by XCG in advance of the fieldwork and were filled out during the field survey. The tables were completed with information on the sample identification, location collected, physical description, condition of material sampled, and quantity of material.

2.3 **Asbestos-Containing Materials**

“Room-by-room” visual inspections of all accessible areas of the buildings were made in order to identify suspected asbestos-containing materials (ACMs). Areas above suspended lay-in tile ceilings, above plaster or gypsum board ceiling with access hatches and accessible pipe chases were also inspected. The survey included but was not limited to: thermal insulation, sprayed fireproofing, acoustic plaster, textured coat, plaster applications, ceiling tiles, vinyl flooring material and drywall joint compounds. When materials suspected of containing asbestos were found, the risk of exposure to building occupants was assessed. In addition, the accessibility of the material was also noted. Samples of materials suspected of containing asbestos were collected and were later submitted to Entech, a Division of Agri-Service Lab Inc. (Entech), in Mississauga, Ontario. If laboratory analysis confirmed the presence of asbestos in the materials sampled, recommendations for any remedial actions considered necessary were developed.

2.3.1 **Assessment of Condition and Accessibility, and Remedial Actions**

The methodology used to assess the risk of exposure to building occupants was consistent with the PWGSC document entitled *DM Directive 057- Asbestos Management* (1997), as adopted by the Treasury Board. The criteria used to assess the condition of the ACM are based on the type of asbestos material. In evaluating the condition of ACM spray applied as fireproofing, thermal insulation or texture, decorative or acoustic finishes the following criteria apply:

GOOD	Surface of material shows no significant signs of damage, deterioration or delamination. Up to one percent visible damage to surface is allowed within range of GOOD. Evaluation of sprayed fireproofing requires the surveyor to be familiar with the irregular surface texture typical of sprayed asbestos products. GOOD condition includes unencapsulated or unpainted fireproofing or texture finishes, where no delamination or damage is observed, and encapsulated fireproofing or texture finishes where the encapsulation has been applied after the damage or fallout occurred.
POOR	Sprayed materials show signs of damage, delamination or deterioration. More than one percent damage to surface of ACM spray.

In evaluating the condition of mechanical insulation (on boilers, breeching, ductwork, piping, tanks, equipment, etc.) the following criteria were used:

GOOD	Insulation is completely covered in jacketing and exhibits no evidence of damage or deterioration. No insulation is exposed. Includes conditions where the jacketing has minor surface damage (i.e. scuffs or stains), but the jacketing is not penetrated.
FAIR	Minor penetration damage to jacketed insulation (cuts, tears, nicks, deterioration or delamination) or undamaged insulation that has never been jacketed. Insulation is exposed but not showing surface disintegration. The extent of missing insulation ranges should be minor to none.
POOR	Original insulation jacket is missing, damaged, deteriorated or delaminated. Insulation is exposed and significant areas have been dislodged. Damage cannot be readily repaired.

Non-friable materials (e.g. vinyl floor tiles) generally have little potential to release airborne fibres, even when damaged by mechanical breakage. However, some non-friable materials (i.e. exterior asbestos cement products) may have deteriorated so that the binder no longer effectively contains the asbestos fibres. In such cases of significantly deteriorated non-friable material, the material will be treated as a friable product.

The accessibility of building materials known or suspected of containing ACMs was rated in the field according to the following criteria:

ACCESS A	Areas of the building within reach (from floor level) of all building users.
ACCESS B	Frequently entered maintenance areas within reach of maintenance staff, without the need of a ladder.
ACCESS C (Exposed)	Areas of the building above 2.4m where use of a ladder is required to reach the asbestos containing material.
ACCESS C (Concealed)	Areas of the building that require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems.
ACCESS D	Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment etc. where demolition of the ceiling, wall or equipment etc. is required to reach the asbestos containing material.

If laboratory analysis confirmed the presence of asbestos in the materials sampled, recommendations for remedial actions (if any) based on the condition and accessibility of the ACM were made and are discussed later in this report.

The Action Matrix provided below establishes the recommended asbestos control action for friable ACMs and was used to determine the appropriate remedial actions with respect to ACMs in the buildings. The matrix considers the exposure risk and accessibility of the ACMs. The Actions are described in full following the matrix.

ACCESSs	CONDITION			DEBRIS
	GOOD	FAIR	POOR	
A	Action 5/7 ¹	Action 5/6 ²	Action 3	Action 1
B	Action 7	Action 5/6 ³	Action 3	Action 1
C (Exposed)	Action 7	Action 6	Action 4	Action 2
C (Concealed)	Action 7	Action 7	Action 4	Action 2
D	Action 7	Action 7	Action 7	Action 7
Notes: 1. If material in ACCESS A/ GOOD Condition is not removed ACTION 7 is required. 2. If material in ACCESS A/ FAIR CONDITION is not removed ACTION 6 is required. 3. Remove ACM in ACCESS B/ FAIR CONDITION if ACM is likely to be disturbed.				

ACTION 1	Immediate Clean-up of Debris That is Likely to be Disturbed Restrict access that is likely to cause a disturbance of the ACM debris and clean up ACM debris immediately. Utilize correct asbestos procedures. This action is necessary for compliance with regulatory requirements. The surveyor should immediately notify the Regional Asbestos Co-ordinator of this condition.
ACTION 2	Entry into Areas with ACM Debris –Type 2 Precautions At all locations where ACM debris can be isolated in lieu of removal or cleaned up, use appropriate means to limit entry to the area. Restrict access to the area to persons utilizing Type-2 asbestos work precautions. The precautions will be required until the ACM debris has been cleaned up and the source of the debris has been stabilized or removed.
ACTION 3	ACM Removal Required for Compliance Remove ACM for compliance with regulatory requirements. Utilize asbestos procedures appropriate to the scope of the removal work.
ACTION 4	Access into Areas Where ACM is present and likely to be disturbed by Access-Type 2 Precautions Use Type 2 asbestos precautions when entry of access into an area is likely to disturb the ACM. Action 4 must be used until the ACM is removed. (Use Action 1 or 2 if debris is present).
ACTION 5	Proactive ACM Removal Remove ACM in lieu of repair, or at locations where the presence of asbestos with an Exposure Risk of 1 is not desirable.
ACTION 6	ACM Repair Repair ACM that has an exposure risk of 2, and is not likely to be damaged again or disturbed by normal use of the area or room. Upon completion of the repair work, treat ACM as material with an exposure risk of 1 and implement Action 7. If ACM is likely to be damage of disturbed, during normal use of the area or room, implement Action 5.
ACTION 7	Routine Surveillance Institute routine surveillance of the ACM. Trained workers or contractors must use appropriate asbestos precautions (Type 1, Type 2 or Type 3) during the disturbance of the

	remaining ACM.
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For non-friable materials, such as vinyl floor tiles, reported in GOOD condition, Action 7 (surveillance) is recommended regardless of accessibility.

DM Directive 057 defines Type 1, 2, and 3 work as follows:

Type 1 Work

- Installation or removal of a non-friable ACM with a hand tool;
- Disturbance of a non-friable ACM with a powered tool equipped with a HEPA dust collection device;
- Removal of drywall materials where joint filling materials contain asbestos;
- Removal or replacement of ten or less asbestos-containing compressed mineral fibre type ceiling tiles;
- Collecting samples of asbestos-suspect friable materials; and,
- Working close to friable sprayed asbestos, where the material may be affected by the work activities.

Type 2 Work

- Removal or replacement of more than ten asbestos-containing compressed mineral fibre type ceiling tiles;
- Entry into ceiling spaces, crawlspace, pipe tunnels, etc., where friable asbestos debris is present;
- In British Columbia, removal of drywall installed before 1980;
- Minor removal of friable ACM. Type 2 removal is limited to a maximum per work period of:
 - In British Columbia – 0.1 m² surface area, or 3 lineal metres of pipe insulation;
 - In Quebec – 0.03 m² of Debris; and,
 - All Others – 1 m² of surface area.
- Repair of asbestos mechanical insulation. (No limit is imposed as to the amount of repair permitted under Type 2 conditions).

Type 3 Work

- More than minor removal or disturbance of friable ACM;
- Use of a power tool on non-friable ACM without HEPA exhausted dust collection;
- The spray application of an encapsulant or sealer to friable asbestos surfacing materials;
- Disturbance of ductwork and air handling equipment serving or passing through areas of buildings with sprayed asbestos fireproofing or insulation; and,
- Repair, alteration or demolition of a boiler, furnace, kiln, or smaller equipment with asbestos-containing refractory.

Ontario Regulation 838 (amended to O. Reg. 104/04) has similar, but not exactly the same definitions.

2.3.2 Sampling of Suspected Asbestos-Containing Materials

During the “room-by-room” survey, a sufficient number of bulk samples were collected and submitted for laboratory analysis in order to determine the existence and quantities of all friable and non-friable asbestos containing materials present. All the layers of a material suspected of containing asbestos were sampled.

For any vinyl flooring and ceiling tile applications, only the predominant types of material were tested for asbestos content.

With friable materials, the entire area was completely soaked with water prior to sampling. All areas where bulk samples were obtained were repaired/patched using industry-approved methods.

2.3.3 Analytical Methodology

Analysis of bulk samples for determination of asbestos content were performed using the procedures detailed in the U.S Environmental Protection Agency “Methods for the Determination of Asbestos in Bulk Building Materials, U.S EPA Report No./600/R-93/116”, or an equivalent recognized method. Polarized light microscopy methodology (PLM) was used for the analysis of all bulk asbestos samples collected with the exception of the vinyl flooring samples collected. Vinyl flooring material was analyzed using transmission electron microscopy (TEM) methodology. Asbestos, if present, is identified as one or more fibrous asbestos minerals, most commonly Chrysotile, Amosite, or Crocidolite. The detection limit for analysis of asbestos was 0.5%.

As indicated in *DM Directive 057*, ACMs have been defined as materials containing 0.5 percent or greater of asbestos fibres. The materials that are commonly found are actinolite, amosite, anthrophyllite, chrysotile, crocidolite or tremolite.

2.4 Lead

During the “room-by-room” survey of the buildings, the presence of any materials or equipment that may contain lead were identified. These materials included (but were not limited to) paint applications, wiring and plumbing. The quantity and the condition of these materials were noted on the field data sheets. The condition of the paint surface was evaluated using XCG’s Classification System outlined below in Section 2.5.1.

A representative paint sample was collected from all painted surfaces and submitted to Entech for laboratory analysis. The analysis of paint samples for the determination of lead content was performed using Inductively Coupled Plasma Emission Spectrometry. The Federal Hazardous Products Act (1976) limits the quantity of lead permissible in newly manufactured paints to 0.5% (5,000 ppm). Paints having a lead content greater than 0.5 % are thus considered to be lead-based.

Areas of paint in good condition (which was observed to encompass the majority of painted surfaces at this institution) were sampled in such a way as to minimize visual impacts. All painted areas of significant size (and different colours) were discretely

sampled and analyzed for lead. Areas where several layers of paint existed did not necessarily have identification of each layer unless the paint was in poor condition. However, every attempt to identify the number and colours of the layers was made.

Other potentially lead-containing materials found include the battery packs in emergency lighting, automobile batteries found in the buildings WA19 and WA05 as well as operational vehicles, and the solder on copper water piping. Inspections to identify other lead-containing materials (such as pipes, wiring, etc.) were conducted, but no potentially lead-containing materials of this type were found.

2.4.1 XCG Classification System

XCG's evaluation of the condition of painted surfaces was based on the following definitions:

GOOD	No peeling of painted surfaces.
FAIR	Some minor cracking on painted surfaces. Repainting is possible without surface treatment.
POOR	Significant cracking and or peeling of painted surfaces. Removal of loose material will be necessary prior to repainting.

2.4.2 Lead Paint Sampling

XCG field staff used a scraper blade to collect bulk lead paint samples. Paint was scraped directly off the substrate and into a plastic-sampling bag, which was then sealed and labelled. Special care was made to ensure that all layers of paint were removed equally but none of the substrate.

2.5 Mercury

During the "room-by-room" survey, the presence of any materials or equipment containing mercury (or suspected of containing mercury), including thermometers, pressure gauges and electrical equipment were identified and recorded on the field data sheets.

XCG relied upon the Warkworth Correctional Institution maintenance staff for information regarding mercury-containing equipment. Discussions with the maintenance staff revealed that there is no equipment containing significant quantities of mercury. It was also revealed that mercury-containing thermostat switches, containing small amounts of mercury in addition to fluorescent light tubes, which contain small amounts of mercury vapour, are used throughout the Warkworth Correctional Institution.

2.6 Silica

During the "room-by-room" survey activities, the presence of any materials suspected of containing silica, the locations of these materials and the quantities were recorded on the field data survey sheets.

Inspections for potential sources of silica were conducted during the XCG inspections at the facility. Sources of silica observed at the facility included concrete and brick. No samples were taken.

2.7 Other Designated Substances

Other designated substances that were included in the current survey were: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride. None of these substances were observed in any of the buildings during the site inspection.

2.8 Polychlorinated Biphenyls (PCBs)

During the “room by room” survey, information on nameplates on electrical equipment including transformers, switchgear, representative fluorescent lights and high intensity discharge lamps were recorded and compared against published information provided by the equipment manufacturers regarding confirmed or potential PCB content in dielectric fluids. The plate covers on a select number of fluorescent light ballasts were opened to record the product information. XCG only conducted this on fluorescent lights that were low enough where the task could be completed safely and within a reasonable amount of time. Because of the short timeframe on this project and amount time typically required to open, inspect and re-assemble the covers, only a limited number of ballasts were assessed. The locations of any equipment suspected of containing PCBs were noted on the building floor plans.

During the survey, if any PCB wastes and/or storage sites were identified, their presence and location were also recorded. If PCB wastes were found to be present, the type of waste material or equipment and quantities were recorded and compliance with applicable regulatory requirements was assessed. If PCB storage sites were identified, only an inventory of contents was taken.

2.9 Ozone-Depleting Substances (ODSs)

During survey activities, the presence of any equipment containing refrigerants, which contain ozone-depleting substances (ODSs), were recorded. According to the CSC representatives contacted, no halon-containing fire extinguishers are used at the facility. Random inspections by the XCG field staff confirmed the absence of halon in the fire extinguishers. The field team surveyed and catalogued all other ODS found in the Institution. This included refrigerators, wall mounted and central air conditioners, water fountains, and the air conditioning units found in the fleet automobiles. The CSC site contact was able to provide XCG with a refrigerant inventory of ODSs, which included those in the vehicles and on building rooftops, which were inaccessible during the current survey.

2.10 Urea Formaldehyde Foam Insulation (UFFI)

During the “room-by-room” survey activities, inspections of the exterior and interior walls were made in order to determine the presence of any urea formaldehyde foam insulation (UFFI). The interior and exterior walls were inspected for evidence of repaired openings (i.e., “nozzle holes”) made for installation of the insulation. In order to assist in the determination of whether or not any insulation is present, visual observations of the wall cavities were made at representative locations. Any UFFI material identified and its location was recorded on the field data survey sheets.

2.11 Fuel, Oil, and/or Waste Oil Storage

The locations inside or outside of the buildings that stored fuel/oil were examined during the inspection of each building. The approximate quantity, storage practices, and disposal procedures for waste oil were noted.

2.12 Chemical Storage

The locations and types of chemicals stored in each building were noted and recorded. Any concerns, such as spills, missing MSDS sheets, or the need for disposal, were identified and summarized in this report.

2.13 Radioactive Materials

During survey activities, the presence of any equipment with labels indicating the use of radioactive materials was recorded. CSC staff members were also interviewed to determine if there are any radioactive materials present.

2.14 Mould

As part of the DSHMS, inspections were conducted in each room for evidence of potential mould growth. XCG utilized the Health Canada document entitled *Fungal Contamination in Public Buildings: A Guide to Recognition and Management* (June 1995) as a guide in this assessment.

3. WA01 – FINANCE AND PERSONNEL BUILDING

3.1 Building Description

This building was constructed in 1965 and contains one floor. The annotated floor plan (Figure WA01-1) showing the approximate building layout, dimensions, sampling locations and areas of ACMS and lead paint is contained in Appendix 3. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

3.2 Survey Findings

On March 2, 2005, XCG conducted a DSHMS on Building WA01. The results of the DSHMS are presented in the subsections of Section 3.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 3. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 3).

XCG was not provided with access to Rooms 106 and 111A since the escort did not have the key to this room.

3.2.1 Asbestos-Containing Materials (ACMs)

A total of seven samples were collected from the building for bulk asbestos analysis using the PLM method and four floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 3.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plan in Appendix 3 shows the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- Two 6-inch, four 3-inch and ten 2-inch diameter pipe elbows were found in Room 104 (Mechanical Room) to contain between 50 and 75% chrysotile. Approximately 20 m of pipe wrap was also observed to contain the same amount of asbestos. Both materials were found to be in fair condition;
- In Room 110 (Foyer), approximately 24 m² of brown coloured vinyl floor tiles were found to contain between 10 and 20 % chrysotile. The same floor tiles were observed in Room 122 (Corridor, 14 m²), Room 123 (Hall, 44 m²) and Room 124 (Corridor, 26 m²). The tiles were in good condition and covered a total area of approximately 108 m²; and
- In Room 117 (Supply Storage), approximately 5 m² of white coloured vinyl floor tiles were observed to contain between 10 and 20 % chrysotile. The tiles appeared to be in good condition.

Table 3.1 Summary of Asbestos Survey, Building WA01

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WA01-101-4-FT	101	Vinyl floor tile, light brown coloured with medium brown flecks, 12"x12"	Non-friable	Good	A	None	ND	-
WA01-101-5-CT	101	Ceiling tile, homogeneous, beige, layered, compressed, fibrous material	Friable	Good	C (exposed)	None	ND	-
WA01-102-7-FT	102	Vinyl floor tile, white coloured with light grey flecks, 12"x12"	Non-friable	Good	A	None	ND	-
WA01-102-8-CT	102	Ceiling tile, homogeneous, beige, layered, compressed, fibrous material	Friable	Good	C (exposed)	None	ND	-
WA01-104-22-PE	104	Pipe elbow, homogeneous, grey, soft, cementitious material	Friable	Fair	B	6/5	(C) 50-75%	2 x 6-inch, 4 x 3-inch and 10 x 2-inch diameter pipe elbows
WA01-104-23-PJ	104	Pipe jacket, homogeneous, grey, soft, cementitious material	Friable	Fair	B	6/5	(C) 50-75%	20 m
WA01-105-11-PJ	105	Pipe jacket, homogeneous, white, woven fibrous material	Friable	Good	C (exposed)	None	ND	-
WA01-107-13-CT	107	Ceiling tile, homogeneous, beige, layered, compressed, fibrous material	Friable	Good	C (exposed)	None	ND	-
WA01-110-14-FT	110	Vinyl floor tile, brown coloured with brown and grey flecks, 9"x9"	Non-friable	Good	A	7	(C) 10-20%	24 m²
-	122	Vinyl floor tile, brown coloured with brown and grey flecks, 9"x9", inferred to be the same as room 110	Non-friable	Good	A	7	(C) 10-20%	14 m ²

-	123	Vinyl floor tile, brown coloured with brown and grey flecks, 9"x9", inferred to be the same as room 110	Non-friable	Good	A	7	(C) 10-20%	44 m ²
-	124	Vinyl floor tile, brown coloured with brown and grey flecks, 9"x9", inferred to be the same as room 110	Non-friable	Good	A	7	(C) 10-20%	26 m ²
WA01-117-20-FT	117	Vinyl floor tile, white coloured with grey flecks, 9"x9"	Non-friable	Good	A	7	(C) 10-20%	5 m ²
WA01-124-21-CT	124	Ceiling tile, homogeneous, beige, layered, compressed, fibrous material	Friable	Good	C (exposed)	None	ND	-

Notes:

- 1 Friability is assessed as friable or non-friable
- 2 Condition is rated as good, fair or poor
- 3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
- 4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
- 5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
- ND None detected (<0.5%)

3.2.2 Lead-Containing Materials

Twelve samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 3.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 3 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that one sample collected contained lead concentrations above the lead-paint classification of 5,000 ppm. A lime green paint sample was collected from Room 114 (Janitor) and found to contain a lead concentration of 8,203 ppm. The paint was observed to be in good condition and covered an area of approximately 36 m².

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

3.2.3 Mercury

The only potential sources of mercury that were identified during the 2005 DSHMS were the fluorescent lamps throughout this building and the thermostat switch on the west wall of Room 123. The lamps are expected to contain small quantities of mercury vapour. No high intensity discharge mercury-vapour lamps were found in use at this building.

3.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

3.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 3.2 Summary of Lead Paint Survey, Building WA01

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WA01-101-1-P	101	Paint from the interior south wall	Light blue	Good	1	894	-
WA01-101-2-P	101	Paint from the interior north wall	Medium blue	Good	1	1,196	-
WA01-101-3-P	101	Paint from the door to the room	Dark blue	Good	1	89	-
WA01-102-6-P	102	Paint from the interior east wall	Light grey	Good	1	1,409	-
WA01-105-9-P	105	Paint from the interior east wall	Cream	Good	1	356	-
WA01-105-10-P	105	Paint from the door to the room	Dark grey	Good	1	132	-
WA01-107-12-P	107	Paint from the door to the room	Grey brown	Good	1	2,690	-
WA01-114-15-P	114	Paint from the interior south wall	Lime green	Good	1	8,203	36
WA01-114-16-P	114	Paint from the door to the room	Mustard	Good	1	1,282	-
WA01-115-17-P	115	Paint from the interior south wall	Yellow	Good	1	841	-
WA01-115-18-P	115	Paint from the interior north wall	White	Good	1	41	-
WA01-116-19-P	116	Paint from the interior east wall	Blue green	Good	1	199	-

Notes:¹ Condition is rated as good, fair or poor with peeling and/or flaking² Layers of paint are noted visually and can only be observed if the layers are different colours**Bold** Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

3.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 87 fluorescent light ballasts are located throughout the first floor of the building, except in Rooms 104 and 117. XCG opened one ballast located in Room 107. It was manufactured by Philips and contained a label that clearly indicated it did not contain PCBs. XCG assumes that most other ballasts in the building also do not contain PCBs. The specification information from this equipment is summarized as follows:

- Philips, Catalogue No. RQM-2S40-TPC, Non PCBs

No other potential sources of PCBs, such as transformers, were observed in this building.

3.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, a domestic refrigerator, a water fountain and a water cooler were identified in this building. The 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representative, lists only the refrigerator (although there is a typographical error in the model number). The other pieces of equipment were not listed; however, additional air conditioning units on the exterior of the building were mentioned. The refrigerator contained R-12 refrigerant and the water cooler contained R-134a, both of which are considered an ODS. Information regarding the water fountain could not be found; however, it may potentially contain an ODS. The specification information on the equipment that contained it is summarized as follows:

- Room 103 (General Office) – Water Land (water cooler), Model No. CN-3920W, Serial No. M700150BKW, 0.035 kilograms of R-134a; and
- Room 110 (Foyer) – Sears Canada Inc. (refrigerator), Model No. C978-54060-1, Serial No. SL357962V, 4.25 ounces of R-12.

3.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

3.2.9 Fuel, Oil, and/or Waste Oil Storage

A one-litre container of motor oil was found in Room 104 (Mechanical Room) and may no longer be in use. It should be disposed of properly.

3.2.10 Chemical Storage

Chemicals in the form of cleaning compounds were observed in Room 114 (Janitor). The room did not contain MSDS information, nor was there an inventory of the hazardous chemicals stored there.

3.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

3.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

4. WA04 – GENERAL STORES BUILDING

4.1 Building Description

This building was constructed in 1965 and contains one floor and a mezzanine area. The annotated floor plan (Figure WA04-1) showing the approximate building layout, dimensions, sampling locations and areas of ACMS and lead paint is contained in Appendix 4. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

4.2 Survey Findings

On March 2, 2005, XCG conducted a DSHMS on Building WA04. The results of the DSHMS are presented in the subsections of Section 4.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 4. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 4).

4.2.1 Asbestos-Containing Materials (ACMs)

A total of six samples were collected from the building for bulk asbestos analysis using the PLM method and four floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 4.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plan in Appendix 4 shows the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- In Room 105 (Office), approximately 10 m² of white coloured 9" x 9" vinyl floor tiles containing between 10 and 20% chrysotile were identified. The same kind of tiles were also observed in Room 107 (General Office, 48 m²) and Room 115 (Vestibule, 2 m²), for a total of approximately 60 m² of this floor tile. The tiles appeared to be in good condition;
- Approximately 2.4 metres of pipe run was identified in Room 108 (Washroom) and found to contain between 50 and 75% chrysotile. The material was in fair condition. Also in this room 4 2-inch diameter pipe elbows were found to contain the same amount of chrysotile. The elbows were also in fair condition;
- Approximately 104 m² of ceiling tile were found to contain between 50 and 75% chrysotile. The ceiling tiles were in good condition; and
- Six 4-inch and twelve 6-inch diameter pipe elbows were found in Room M03 (Storage) to contain between 50 and 75% chrysotile. The pipe elbows were in good condition.

Table 4.1 Summary of Asbestos Survey, Building WA04

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WA04-105-5-FT	105	Vinyl floor tile, white coloured with grey streaks, 9"x9"	Non-friable	Good	A	7	(C) 10-20%	10 m ²
-	107	Vinyl floor tile, white coloured with grey streaks, 9"x9", inferred to be the same as room 105	Non-friable	Good	A	7	(C) 10-20%	48 m ²
WA04-105-6-CT	105	Ceiling tile, homogeneous, brown, layered, compressed, fibrous material	Friable	Fair	C (exposed)	None	ND	-
WA04-106-8-FT	106	Vinyl floor tile, white with grey flecks, 12"x12"	Non-friable	Good	A	None	ND	-
WA04-106-9-CT	106	Ceiling tile, homogeneous, brown, compressed, fibrous material	Friable	Good	C (exposed)	None	ND	-
WA04-108-11-PR	108	Pipe run, homogeneous, off-white, layered, corrugated paper	Friable	Fair	A	5/6	(C) 50-75%	2.4 m
WA04-108-12-PE	108	Pipe elbow, homogeneous, grey, soft, cementitious material	Friable	Fair	A	5/6	(C) 50-75%	4 2-inch diameter elbows
-	115	Vinyl floor tile, white coloured with grey streaks, 9"x9", inferred to be the same as room 105	Non-friable	Good	A	7	(C) 10-20%	2 m ²
WA04-117-FT1	117	Vinyl floor tile, green coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WA04-117-CT1	117	Ceiling tile, homogeneous, grey, soft, cementitious material	Friable	Good	C (exposed)	7	(C) 50-75%	104 m ²
<i>Mezzanine Level</i>								
WA04-M01-13-FT	M01	Vinyl floor tile, green coloured, 12"x12"	Non-friable	Good	A	None	ND	-

Table 4.1 Summary of Asbestos Survey, Building WA04

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WA04-M03-14-PE	M03	Pipe elbow, homogeneous, grey, soft, cementitious material	Friable	Good	B	7	(C) 50-75%	6 2-inch and 12 4-inch diameter elbows

Notes:

- 1 Friability is assessed as friable or non-friable
2 Condition is rated as good, fair or poor
3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
ND None detected (<0.5%)

4.2.2 Lead-Containing Materials

Eight samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 4.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 4 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that one sample collected contained lead concentrations above the lead-paint classification of 5,000 ppm. A bright yellow paint sample from the garage door leading to Room 101 was found to contain 9,044 ppm of lead. The paint appeared to be in good condition. It is painted on both sides and covered an area of approximately 40 m². The laboratory conducted a duplicate analysis of paint sample WA04-116-WP1 for quality assurance/quality control (QA/QC) purposes. The results of both the original and duplicate samples were the same (<20 ppm).

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

4.2.3 Mercury

The only potential sources of mercury that were identified during the 2005 DSHMS were the fluorescent lamps throughout this building and the thermostat switches throughout the building. There were two switches on the east and west walls of Room 117 (Exercise Area), and one on the south wall of each of Room 119 (Female Change/Shower Room) and Room 121 (Male Change/Shower Room). The lamps are expected to contain small quantities of mercury vapour. There are five high intensity discharge (HID) lamps on the ceiling of Room 112 (Composting Room). There may potentially be mercury vapours in the HID lamps.

4.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

4.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 4.2 Summary of Lead Paint Survey, Building WA04

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WA04-101-1-P	101	Paint from the interior north wall	Cream	Fair	1	1,348	-
WA04-101-2-P	101	Paint from the garage door to the room	Bright yellow	Good	1	9,044	40
WA04-105-3-P	105	Paint from the interior south wall	Dark green	Good	1	2,689	-
WA04-105-4-P	105	Paint from the interior west wall	Light green	Good	1	56	-
WA04-106-7-P	106	Paint from the interior south wall	Medium green	Good	1	58	-
WA04-108-10-P	108	Paint from the door to the room	Yellow	Good	1	359	-
WA04-116-WP1	116	Paint from the interior north wall	White	Good	1	<20	-
WA04-116-WP1 Duplicate	116	Paint from the interior north wall	White	Good	1	<20	-
WA04-117-WP1	117	Paint from the interior north wall	Green	Good	1	29.4	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WA04-116-WP1 Duplicate is a laboratory duplicate of WA04-116-WP1

4.2.6 **Polychlorinated Biphenyls (PCBs)**

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 102 fluorescent light ballasts are located throughout the first floor of the building, except in Rooms 108, 109 and 112. There are 17 additional ballasts in the mezzanine level of the building. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

There was a pad-mounted transformer west of the building exterior. Due to weather conditions at the time of the site visit, the transformer could not be examined closely to determine if there is any staining on the ground surface, which may indicate past leakage. The site contact stated that there have been no past leaks of the transformer, and it is tested regularly. He also believes the transformer does contain PCBs.

4.2.7 **Ozone-Depleting Substances (ODSs)**

During the 2005 DSHMS, two water coolers, a walk-in freezer and walk-in cooler, a small bar fridge, an ice maker, a soda pop vending machine and nine wall mounted air-conditioner units were identified in this building. Most of this equipment is not listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representative. There is an additional air conditioning unit on the exterior of the building mentioned in the inventory. The walk-in cooler, bar fridge and water coolers contain R-12 refrigerant. Most of the air conditioners contain R-22 and the pop machine contains R-134a. All these refrigerants are considered to be an ODS. Information regarding all other pieces of equipment could not be found, however they could potentially contain an ODS. The specification information on the equipment that contained it is summarized as follows:

- Room 101 (General Stores) – W.I.C. (walk-in cooler), Model No. SN B7709, Serial No. unknown, 11.1 ounces of R-12;
- Room 101 (General Stores) – Tecumseh (walk-in freezer), Model No. AH2445AM, Serial No. 9E1801757, unknown amount of R-22;
- Room 105 (Office) – Oasis (water cooler), Model No. BLFIA-S, Serial No. 9139 265659, 1.0 ounce of R-12;
- Room 107 (General Office) – Goldstar (bar fridge), Model No. GR-141CGP, Serial No. 10327018, 2.82 ounces of R-12;
- Room 107 (General Office) – Electrohome (air conditioner), Model No. A1802B2, Serial No. J941000204, 39.5 ounces of R-22;
- Room 116 (Vestibule) – Royal Vendors (pop machine), Model No. RVCC-660-9, Serial No. 200023BA00473, 5.25 ounces of R-134a;
- Room 117 (Exercise Area) – EMCO Manufacturing Company (water cooler), Model No. EBA1K-002-S, Serial No. 8824 316050, 1.1 ounces of R-12;

- Room M02 (Storage) – Fedders (air conditioner), Model No. A2Q10F2B6, Serial No. GL 719672 1909, unknown refrigerant;
- Room M02 (Storage) – Electrohome (air conditioner), Model No. A504A00, Serial No. 0011916962, 9.5 ounces R-22;
- Room M02 (Storage) – Electrohome (air conditioner), Model No. A601A00, Serial No. 8431973680, 9.25 ounces R-22;
- Room M02 (Storage) – Electrohome (air conditioner), Model No. A504, Serial No. 4031906752, 9.5 ounces R-22;
- Room M02 (Storage) – Electrohome (air conditioner), Model No. A504A01, Serial No. 1091927883, 9.5 ounces R-22;
- Room M02 (Storage) – Kenmore (air conditioner), Model No. 253-357351, Serial No. JK02658676, 17.00 ounces R-22;

4.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

4.2.9 Fuel, Oil, and/or Waste Oil Storage

Two aboveground storage tanks are located on the exterior west side of the building. Tank No. 460-01 is 15,400 litres in size and contains gasoline. Tank No. 460-04 is 7,700 litres in size and contains diesel. Both tanks were manufactured and installed in the year 2004, and appear to be in good condition. They supply fuel to the fleet vehicles of the Institution. Further information on them can be found in XCG's Audit Report.

4.2.10 Chemical Storage

No chemical storage areas were identified in this building during the current survey.

4.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

4.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

5. WA05 – CENTRAL HEATING PLANT

5.1 Building Description

This building was constructed in 1965 and contains one floor and a mezzanine level. The annotated floor plan (Figures WA05-1) showing the approximate building layout, dimensions, sampling locations and areas of ACM and lead paint is contained in Appendix 5. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

5.2 Survey Findings

On March 2, 2005, XCG conducted a DSHMS on Building WA05. The results of the DSHMS are presented in the subsections of Section 5.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analyses for ACMs and lead paint testing are included in Appendix 5. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 5).

XCG was not provided with access to Rooms 102 and M01 since the escort did not have the key to these rooms.

5.2.1 Asbestos-Containing Materials (ACMs)

A total of two samples were collected from the building for bulk asbestos analysis using the PLM method and three floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 5.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plan in Appendix 5 shows the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- In Room 101 (Boiler Room), approximately 15-20 various diameter pipe elbows were found to contain between 50 and 75% chrysotile. Most elbows were beyond the reach of the field team, near the ceiling. All appeared to be in good condition; and
- In Room 107 (Engineer Office), two different floor tiles were found to contain 10 to 20% chrysotile each. Both tiles were white, with one containing brown streaks and the other one having red and brown streaks. Each floor tile covered approximately 8 m² of the floor (for a total of 16 m²) and both were found to be in good condition.

Table 5.1 Summary of Asbestos Survey, Building WA05

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibilty ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WA05-101-3-PE	101	Pipe elbow, homogeneous, grey, soft, cementitious material	Non-friable	Good	C (exposed)	7	(C) 50-75%	15-20 various diameter elbows
WA05-106-5-FT	106	Vinyl floor tile, white coloured with grey flecks, 12"x12"	Non-friable	Good	A	None	ND	-
WA05-106-6-CT	106	Ceiling tile, homogeneous, compressed, fibrous material	Friable	Fair	C (exposed)	None	ND	-
WA05-107-8-FT	107	Vinyl floor tile, white coloured with brown streaks, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	8 m ²
WA05-107-9-FT	107	Vinyl floor tile, white coloured with red and brown streaks, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	8 m ²

Notes:

- 1 Friability is assessed as friable or non-friable
2 Condition is rated as good, fair or poor
3 Accessability is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
ND None detected (<0.5%)

5.2.2 Lead-Containing Materials

Eight samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 5.1 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 5 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that two samples collected contained lead concentrations above the lead-paint classification of 5,000 ppm. A red paint chip was collected from the door leading to Room 109 (Janitor) and was found to contain 15,792 ppm of lead. The paint was in good condition and covered an area of approximately 3 m². A grey-brown paint sample was collected from Room 111 (Pit) and found to contain 10,951 ppm of lead. The paint was in poor condition and covered an area of approximately 61 m².

The laboratory conducted a duplicate analysis of paint sample WA05-M02-13-P for QA/QC purposes. There was a difference of approximately 33% in the results, which is considered reasonably close. This provides support that the results are representative.

In addition to the paint, XCG observed approximately 18 automobile batteries in the north end of Room 101 (Boiler Room). These batteries may potentially contain lead. The site contact indicated that the batteries are no longer in use and are awaiting disposal.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

5.2.3 Mercury

The only potential sources of mercury that were identified during the 2005 DSHMS were the fluorescent lamps throughout this building and four thermostat switches. The switches were found on the east wall of Room 101A (Boiler Room), two on the south wall of Room 112 (Engine Room), and one on the east wall of Room 113 (Control Room). The lamps are expected to contain small quantities of mercury vapour. No high intensity discharge mercury-vapour lamps were found in use at this building.

5.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

Table 5.2 Summary of Lead Paint Survey, Building WA05

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WA05-101-1-P	101	Paint from the interior south wall	Cream	Fair	1	2,210	-
WA05-101-2-P	101	Paint from the door to the south entrance	Bright yellow	Fair	1	31.3	-
WA05-106-4-P	106	Paint from the interior north wall	Light yellow	Good	1	1,650	-
WA05-107-7-P	107	Paint from the interior south wall	Light grey	Good	1	64	-
WA05-108-10-P	108	Paint from the interior west wall	Dark blue	Good	1	1,757	-
WA05-109-11-P	109	Paint from the door to the room	Red	Good	1	15,792	3
WA05-111-12-P	111	Paint from the interior south wall	Grey brown	Poor	1	10,951	61
<i>Mezzanine Level</i>							
WA05-M02-13-P	M02	Paint from the interior south wall	Blue green	Poor	1	3,620	-
WA05-M02-13-P Duplicate	M02	Paint from the interior south wall	Blue green	Poor	1	2,429	-

Notes:¹ Condition is rated as good, fair or poor with peeling and/or flaking² Layers of paint are noted visually and can only be observed if the layers are different colours**Bold** Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WA05-M02-13-P Duplicate is a laboratory duplicate of WA05-M02-13-P

5.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

5.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 47 fluorescent light ballasts are located throughout the first floor of the building, except in Room 109. There were 5 ballasts observed on the mezzanine level. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

5.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, one water fountain and one domestic refrigerator were identified in this building. The refrigerator is not listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representative. The water fountain contains R-12, which is considered to be an ODS. Information regarding the refrigerator could not be found; however, it could potentially contain an ODS. The specification information on the water fountain is summarized as follows:

- Room 101 (Boiler Room) – Unknown manufacturer (water fountain), Model No. WTA6, Serial No. 810668251, 0.230 kilograms of R-12.

5.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

5.2.9 Fuel, Oil, and/or Waste Oil Storage

An aboveground storage tank was noted on the exterior west side of the building. Tank No. 460-05 is 7,700 litres in size and contains diesel and supplies fuel to the generator of the building. The tank was manufactured and installed in the year 2004. It appears to be in good condition. Further information on the tank can be found in XCG's Audit Report.

5.2.10 Chemical Storage

Chemical storage in the form of paints and solvents were noted in Room 103 (Storage Room). Cleaning supplies were noted in Room 109 (Janitor). Neither of these areas had MSDS information, nor was there an inventory detailing the chemicals stored there.

5.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

5.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

6. WA06 – MAINTENANCE STORAGE BUILDING

6.1 Building Description

This building was constructed in 1965 and contains one floor and a basement level. The annotated floor plans (Figures WA06-B and WA06-1) showing the approximate building layout, dimensions and sampling locations are contained in Appendix 6. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

6.2 Survey Findings

On March 1, 2005, XCG conducted a DSHMS on Building WA06. The results of the DSHMS are presented in the subsections of Section 6.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for lead paint testing are included in Appendix 6. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 6).

XCG was not provided with access to Room B01 since the escort did not have the key to this room.

6.2.1 Asbestos-Containing Materials (ACMs)

No samples were taken as no potential ACMs were identified.

6.2.2 Lead-Containing Materials

Six samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 6.1 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plans in Appendix 6 show the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that no samples collected contained lead concentrations above the lead-paint classification of 5,000 ppm. The laboratory conducted a duplicate analysis of paint sample WA6-B02-WP1 for quality assurance/quality control (QA/QC) purposes. There was a difference of approximately 20% in the results, which is considered reasonably close. This provides support that the results are representative.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

6.2.3 Mercury

The only potential sources of mercury that were identified during the 2005 DSHMS were the fluorescent lamps throughout this building which are expected to contain

small quantities of mercury vapour. No high intensity mercury-vapour lamps were found in use at this building.

6.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

6.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

6.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 11 fluorescent light ballasts are located throughout the first floor of the building, in Rooms 101 and 102. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

6.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, one refrigeration unit was identified in this building. The 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representative, does not list this refrigeration unit. Information about this unit was not readily available, but it is assumed that it contains an ODS.

6.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

6.2.9 Fuel, Oil, and/or Waste Oil Storage

A 13,500-litre underground storage tank containing fuel oil was listed in the tank inventory provided by the site contact to exist on the south side of the building. The site contact indicated that the tank is approximately 12 years old, and has no history of leaking.

6.2.10 Chemical Storage

The only chemicals present in this building were cleaning compounds, which were stored in Room 103. There were approximately seven bottles of various types of cleaning compounds stored in different size containers, such as Lemon Glo, Glass Plus, and Vanguard 25. MSDS information for the chemicals was not found in the building.

6.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

6.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

Table 6.1 Summary of Lead Paint Survey, Building WA06

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>Basement</i>							
WA6-B02-WP1	B02	Wall paint from the east wall at the foot of the stairs	Cream	Poor	1	434	-
WA6-B02-WP1 Duplicate	B02	Wall paint from the east wall at the foot of the stairs	Cream	Poor	1	522	-
<i>First Floor</i>							
WA6-102-FP1	102	Floor paint from west side of building	Grey	Good	1	<20	-
WA6-102-WP1	102	Wall paint from west wall	White	Good	1	159	-
WA6-102-TR1	102	Door trim paint from main entrance	Yellow	Good	1	1,512	-
WA6-ST01-WP1	102	Paint from stairwell	Green	Good	1	131	-
WA6-103-TR1	103	Paint from bathroom stall	Blue	Good	1	2,440	-

Notes:¹ Condition is rated as good, fair or poor with peeling and/or flaking² Layers of paint are noted visually and can only be observed if the layers are different colours**Bold** Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WA6-B02-WP1 Duplicate is a laboratory duplicate of WA6-B02-WP1

7. WA07 – INFLAMMABLE STORES BUILDING

7.1 Building Description

This building was constructed in 1968 and contains one floor. The annotated floor plan (Figure WA07-1) showing the approximate building layout, dimensions, sampling locations and areas of lead-based paint is contained in Appendix 7. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

7.2 Survey Findings

On March 2, 2005, XCG conducted a DSHMS on Building WA07. The results of the DSHMS are presented in the subsections of Section 7.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for lead paint testing are included in Appendix 7. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 7).

7.2.1 Asbestos-Containing Materials (ACMs)

No samples were taken as no potential ACMs were identified.

7.2.2 Lead-Containing Materials

Three samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 7.1 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 7 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that one sample contained lead concentrations above the lead-paint classification of 5,000 ppm. A yellow paint sample collected from the main entrance door (WA07-101-2-P) was found to have a lead concentration of 6,258 ppm. The condition of the paint was fair and there is approximately 8 m² of paint covering both doors, on both sides. No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

7.2.3 Mercury

No potential sources of mercury were identified during the current survey.

7.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

7.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

7.2.6 Polychlorinated Biphenyls (PCBs)

No fluorescent light ballasts were identified in the building during the current survey. No other potential sources of PCBs, such as transformers, were observed in this building.

7.2.7 Ozone-Depleting Substances (ODSs)

No equipment potentially containing ODSs was identified in the building during the current survey.

7.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

7.2.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil and/or waste oil storage was identified in this building during the current survey.

7.2.10 Chemical Storage

The primary purpose of this single-room building (101) is for the storage of chemicals, including paint and cleaners. At the time of the survey, the XCG field team observed approximately thirty 205-litre drums, thirty 25-litre pails and fifty 1-litre cans of paint, cleaning substances and other chemicals. All materials appeared to be stored properly. There was no evidence of leaking from any of the containers, and all appeared to be appropriately labelled. The building was provided with appropriate ventilation, and a sign indicating that the ventilation system should be turned on 5 minutes before entering the building was clearly mounted on the front door. Many of the metal 205-litre drums were electrically grounded to avoid build-up of static electricity. MSDS information for the chemicals was not found in the building.

7.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

7.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

Table 7.1 Summary of Lead Paint Survey, Building WA07

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WA07-101-1-P	101	Paint from interior west wall	Cream	Poor	1	2,200	-
WA07-101-2-P	101	Paint from door trim	Yellow	Fair	1	6,258	8
WA07-EXT-3-P	Exterior	Paint from trim on the exterior south wall	Red	Poor	1	55	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

8. WA08 – FIRE HALL

8.1 Building Description

This building was constructed in 1968 and contains one floor. The annotated floor plan (Figure WA08-1) showing the approximate building layout, dimensions, sampling locations and area of lead-based paint is contained in Appendix 8. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

8.2 Survey Findings

On March 2, 2005, XCG conducted a DSHMS on Building WA08. The results of the DSHMS are presented in the subsections of Section 8.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for lead paint testing are included in Appendix 8. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 8).

8.2.1 Asbestos-Containing Materials (ACMs)

No samples were taken as no potential ACMs were identified.

8.2.2 Lead-Containing Materials

Three samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 8.1 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 8 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that one sample contained lead concentrations above the lead-paint classification of 5,000 ppm. A blue coloured paint sample collected from the mock cell doors (WA8-101-DP1) was found to have a lead concentration of 10,926 ppm. The condition of the paint was good, and there is approximately 6 m² of paint covering both doors on both sides. The laboratory conducted a duplicate analysis of paint sample WA8-101-TR1 for QA/QC purposes. There was a difference of approximately 17% in the results, which is considered reasonably close. This provides support that the results are representative.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

8.2.3 Mercury

No potential sources of mercury were identified in the building during the current survey.

8.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey. There was one 205-litre drum inside the building that was hand-labelled “Hard Chem Silica”. XCG did not open this drum to verify if there was silica inside, as there was a large steel box on top of the drum.

8.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

8.2.6 Polychlorinated Biphenyls (PCBs)

No fluorescent light ballasts were identified in the building during the current survey. No other potential sources of PCBs, such as transformers, were observed in this building.

8.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, two air conditioning units were identified in this building. The 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representative, does not list these two air conditioning units. Both units contain the refrigerant R-22, a CFC, which is a known ODS. The specification information on the two air conditioners is summarized as follows:

- Room 101 (storage) – Intertherm (air conditioner), Model No. AOS024TBTTA, 2 pounds of R-22; and,
- Room 101 (storage) - Lennox Industries (Canada) Ltd. (air conditioner), Model No. HS18-211-C10P, Serial No. 6390C18669, 4 pounds of R-22.

8.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

8.2.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil and/or waste oil storage were identified in this building during the current survey.

8.2.10 Chemical Storage

There were minor amounts of chemicals stored in Room 101 (garage), including a few 3.78 litre containers of smoke simulation fluid, one 205-litre drum of diesel engine antifreeze/coolant, and one 205-litre drum that was hand-labelled “Hard Chem Silica”. These chemicals were properly labelled, and there were no signs of leaking from any of the containers. MSDS information for the chemicals was not found in the building.

8.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

8.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

Table 8.1 Summary of Lead Paint Survey, Building WA08

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WA8-101-WP1	101	Wall paint on the east interior wall	Cream	Good	1	1,115	-
WA8-101-DP1	101	Door paint from the mock cells in the building	Blue	Good	1	10,926	6
WA8-101-TR1	101	Door trim paint from the mock cells area	Brown	Good	1	59.8	-
WA8-101-TR1 Duplicate	101	Door trim paint from the mock cells area	Brown	Good	1	70	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WA8-101-TR1 Duplicate is a laboratory duplicate of WA8-101-TR1.

9. WA09 – SEWAGE DISPOSAL BUILDING

9.1 Building Description

This building was constructed in 1992 and contains one floor and a partial basement. The annotated floor plan (Figure WA09-1) showing the approximate building layout, dimensions and sampling locations is contained in Appendix 9. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

9.2 Survey Findings

On March 1, 2005, XCG conducted a DSHMS on Building WA09. The results of the DSHMS are presented in the subsections of Section 9.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for ACM and lead paint testing are included in Appendix 9. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 9).

9.2.1 Asbestos-Containing Materials (ACMs)

One floor tile was tested for asbestos using the TEM method. The result is summarized in Table 9.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plan in Appendix 9 shows the approximate sampling location and areal or linear extent of asbestos (if present).

There were no ACMs identified in this building during the current survey.

Table 9.1 Summary of Asbestos Survey, Building WA09

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WA09-104-FT1	104	Vinyl floor tile, marble pattern, 12"x12"	Non-friable	Good	A	None	ND	-

Notes:

- 1 Friability is assessed as friable or non-friable
2 Condition is rated as good, fair or poor
3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
ND None detected (<0.5%)

9.2.2 Lead-Containing Materials

Three samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 9.1 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 9 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that no samples contained lead concentrations above the lead-paint classification of 5,000 ppm. No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

9.2.3 Mercury

The only potential sources of mercury that were identified during the 2005 DSHMS were the fluorescent lamps throughout this building and the thermostat switch on the south wall of Room 103. The lamps are expected to contain small quantities of mercury vapour. No high intensity discharge mercury-vapour lamps were found in use at this building.

9.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

9.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 9.2 **Summary of Lead Paint Survey, Building WA09**

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WA09-101-FP1	101	Paint from the floor of the room	Grey	Fair	1	<20	-
WA09-102-WP1	102	Paint from the interior north wall	Cream	Good	1	1,005	-
WA09-102-TR1	102	Paint from the door trim	Dark blue	Good	1	1,573	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

9.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 11 fluorescent light ballasts are located throughout the first floor of the building. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

9.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, one domestic refrigerator and one wall-mounted air-conditioner unit were identified in this building. This equipment is not listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representative. Information regarding these pieces of equipment could not be found; however, they could potentially contain an ODS.

9.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

9.2.9 Fuel, Oil, and/or Waste Oil Storage

Two jerry cans were found stored in Room 101 (Tool Storage Room). These cans did not have a label on them, nor was there secondary containment around them to contain potential leaks.

9.2.10 Chemical Storage

Chemicals in the form of cleaning compounds and laboratory chemicals were found stored in Room 103 (Laboratory). There was no MSDS information in the room, nor was there an inventory of hazardous materials.

9.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

9.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

10. WA16 – CLARIFICATION BUILDING

10.1 Building Description

This building was constructed in 1992 and contains one floor. The annotated floor plan (Figure WA16-1) showing the approximate building layout, dimensions, and sampling locations are contained in Appendix 10. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

10.2 Survey Findings

On March 1, 2005, XCG conducted a DSHMS on Building WA16. The results of the DSHMS are presented in the subsections of Section 10.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for lead paint testing are included in Appendix 10. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 10).

10.2.1 Asbestos-Containing Materials (ACMs)

No samples were taken as no potential ACMs were identified.

10.2.2 Lead-Containing Materials

One sample of paint was collected from the building and submitted for laboratory analysis of lead. Table 10.1 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 10 shows the approximate sample location and areal extent of lead-containing paint (if present).

The analytical results indicated that the sample did not contain lead concentrations above the lead-paint classification of 5,000 ppm. The laboratory conducted a duplicate analysis of paint sample WA16-101-WP1 for QA/QC purposes. Both results were less than the detection limit of 20 ppm. This provides support that the results are representative.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey.

10.2.3 Mercury

There were no potential sources of mercury identified in the building during the current survey.

10.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

Table 10.1 Summary of Lead Paint Survey, Building WA16

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WA16-101-WP1	101	Wall paint from the interior north wall	White	Good	1	<20	-
WA16-101-WP1 Duplicate	101	Wall paint from the interior north wall	White	Good	1	<20	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WA16-101-WP1 Duplicate is a laboratory duplicate of WA16-101-WP1

10.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

10.2.6 Polychlorinated Biphenyls (PCBs)

There were no fluorescent lights ballasts identified in the building during the current survey. No other potential sources of PCBs, such as transformers, were observed in this building.

10.2.7 Ozone-Depleting Substances (ODSs)

There was no equipment potentially containing ODSs identified in the building during the current survey.

10.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

10.2.9 Fuel, Oil, and/or Waste Oil Storage

There were no fuel, oil and/or waste oil storage areas identified in the building during the current survey.

10.2.10 Chemical Storage

There was no chemical storage identified in the building during the current survey.

10.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

10.2.12 Mould

According to the Sewage Plant Manager, Mr. Chris Crossman, there was a mould problem in this building less than one year ago. The mould was abated properly, and has not reappeared. Mr. Crossman's recollection of the timing was not completely accurate as the mould abatement report was finalized in September 2003, which is over one and a half years ago. In an effort to mitigate future growth, a decision was made to install windows and louvers into the walls of the building, to encourage ventilation and prevent the growth of mould in the future. The renovations are set to take place in the summer of 2005. At the time of the site visit, XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

11. WA18 – RIFLE RANGE

As discussed previously, Building WA18 (Rifle Range) was not inspected by XCG. This building, which is located at the bottom of a 10-metre slope, was not inspected because the snow accumulated on the access road had not been ploughed. The CSC escort indicated that this building is only used during the summertime.

Considering that the building was constructed in 1991, asbestos, lead, PCBs, and UFFI are not expected to exist in this building. Mercury may potentially be in thermostats in the building and silica may be present in the concrete and brick.

12. WA19 – AGGREGATE BUILDING

12.1 Building Description

This building was constructed in 1995 and contains one floor. The annotated floor plan (Figure WA19-1) showing the approximate building layout and dimensions is contained in Appendix 12. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

12.2 Survey Findings

On March 1, 2005, XCG conducted a DSHMS on Building WA19. The results of the DSHMS are presented in the subsections of Section 12.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 12).

12.2.1 Asbestos-Containing Materials (ACMs)

No samples were taken as no potential ACMs were identified.

12.2.2 Lead-Containing Materials

No samples were taken as no areas of the building were painted. No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey.

12.2.3 Mercury

No potential sources of mercury were identified in this building during the current survey.

12.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey. Also, this building also serves as storage for sand and aggregate used in minor construction activities at the Institution. These materials are also possible sources of silica.

12.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

12.2.6 Polychlorinated Biphenyls (PCBs)

No fluorescent light ballasts were identified in the building during the current survey. No other potential sources of PCBs, such as transformers, were observed in this building.

12.2.7 Ozone-Depleting Substances (ODSs)

No equipment potentially containing ODSs was identified in the building during the current survey.

12.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

12.2.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil, and/or waste oil storage areas were identified in the building during the current survey.

12.2.10 Chemical Storage

No chemical storage areas were identified in the building during the current survey.

12.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

12.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

13. WGP12 – GUARD POST

13.1 Building Description

This building was constructed in 1977 and contains two floors and a mezzanine level. The annotated floor plan (Figure WGP12-1) showing the approximate building layout, dimensions and sampling locations is contained in Appendix 13. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

13.2 Survey Findings

On March 1, 2005, XCG conducted a DSHMS on Building WGP12. The results of the DSHMS are presented in the subsections of Section 13.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 13).

13.2.1 Asbestos-Containing Materials (ACMs)

One floor tile was tested for asbestos using the TEM method. The result is summarized in Table 13.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plan in Appendix 13 shows the approximate sampling location and areal or linear extent of asbestos (if present).

There were no ACMs identified in this building during the current survey.

Table 13.1 Summary of Asbestos Survey, Building WGP12

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>Second Floor</i>								
WGP12-201-FT1	201	Vinyl floor tile, grey coloured, 12"x12"	Non-friable	Good	A	None	ND	-

Notes:

- 1 Friability is assessed as friable or non-friable
- 2 Condition is rated as good, fair or poor
- 3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
- 4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
- 5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
- ND None detected (<0.5%)

13.2.2 Lead-Containing Materials

Five samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 13.1 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 13 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that no sample contained lead concentrations above the lead-paint classification of 5,000 ppm. No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

13.2.3 Mercury

The only potential sources of mercury that were identified during the 2005 DSHMS were the fluorescent lamps throughout this building and the thermostat switch on the north wall of Room 201. The lamps are expected to contain small quantities of mercury vapour. No high intensity discharge mercury-vapour lamps were found in use at this building.

13.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

13.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 13.2 Summary of Lead Paint Survey, Building WGP12

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WGP12-102-WP1	102	Paint from the interior north wall	Cream	Good	1	89	-
WGP12-102-DP1	102	Paint from the door to the building	Yellow	Fair	1	82	-
<i>Second Floor</i>							
WGP12-201-CP1	201	Paint from the ceiling of the room	Blue	Good	1	175	-
WGP12-201-TR1	201	Paint from the door leading to the room	Grey	Good	1	1,021	-
WGP12-201-DP1	201	Paint from the door to the balcony	Yellow	Good	1	217	-

Notes:¹ Condition is rated as good, fair or poor with peeling and/or flaking² Layers of paint are noted visually and can only be observed if the layers are different colours**Bold** Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

13.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Three fluorescent light ballasts are located throughout the first floor of the building and one is on the second floor. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

13.2.7 Ozone-Depleting Substances (ODSs)

There was no equipment that potentially contained ODSs identified in this building during the current survey.

13.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

13.2.9 Fuel, Oil, and/or Waste Oil Storage

A 4,500-litre underground storage tank (Tank 460-07) was listed in the tank inventory provided by the site contact to exist on the west side of the building. The site contact indicated that the tank is approximately 12 years old, and has no history of leaking. It supplies fuel oil to the furnace.

13.2.10 Chemical Storage

There were no chemical storage areas identified in this building during the current survey.

13.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

13.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

14. WGP13 – GUARD POST

14.1 Building Description

This building was constructed in 1977 and contains two floors and a mezzanine level. The annotated floor plan (Figure WGP13-1) showing the approximate building layout, dimensions and sampling locations is contained in Appendix 13. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

14.2 Survey Findings

On March 1, 2005, XCG conducted a DSHMS on Building WGP13. The results of the DSHMS are presented in the subsections of Section 14.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 14).

14.2.1 Asbestos-Containing Materials (ACMs)

One floor tile was tested for asbestos using the TEM method. The result is summarized in Table 14.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plan in Appendix 14 shows the approximate sampling location and areal or linear extent of asbestos (if present).

There were no ACMs identified in this building during the current survey.

Table 14.1 Summary of Asbestos Survey, Building WGP13

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibilty ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>Second Floor</i>								
WGP13-201-FT1	201	Vinyl floor tile, white coloured, 12"x12"	Non-friable	Good	A	None	ND	-

Notes:

- 1 Friability is assessed as friable or non-friable
2 Condition is rated as good, fair or poor
3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
ND None detected (<0.5%)

14.2.2 Lead-Containing Materials

Three samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 13.1 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 14 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that no sample contained lead concentrations above the lead-paint classification of 5,000 ppm. The laboratory conducted a duplicate analysis of paint sample WGP13-201-TD1 for QA/QC purposes. The results of the original and duplicate samples were within 6 %, which is very close. This provides support that the results are representative. No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

14.2.3 Mercury

The only potential sources of mercury that were identified during the 2005 DSHMS were the fluorescent lamps throughout this building and the thermostat switch on the north wall of Room 201. The lamps are expected to contain small quantities of mercury vapour. No high intensity mercury-vapour lamps were found in use at this building.

14.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

14.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 14.2 Summary of Lead Paint Survey, Building WGP13

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>Second Floor</i>							
WGP-201-DP1	201	Paint from the door leading to the balcony	Yellow	Good	1	408	-
WGP-201-TR1	201	Paint from the trim of the door leading to the balcony	Grey	Good	1	1,501	-
WGP-201-TD1	201	Paint from the door leading to the room	Red	Fair	1	714	-
WGP-201-TD1 Duplicate	201	Paint from the door leading to the room	Red	Fair	1	758	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WGP-201-TD1 Duplicate is a laboratory duplicate of WGP-201-TD1

14.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Three fluorescent light ballasts are located throughout the first floor of the building and one is on the second floor. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

14.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, one wall mounted air-conditioner unit was identified in this building. The unit is not listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representative. The air conditioner contains R-22 which is considered to be an ODS. The specification information on this unit is summarized as follows:

- Room 201 (Guard Post) – LG (air conditioner), Model No. WR-6210, Serial No. 105KA00542, 6.1 ounces of R-22.

14.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

14.2.9 Fuel, Oil, and/or Waste Oil Storage

A 4,500-litre underground storage tank (Tank 460-08) was listed in the tank inventory provided by the site contact to exist on the south side of the building. The site contact indicated that the tank is approximately 12 years old, and has no history of leaking. It supplies fuel oil to the furnace.

14.2.10 Chemical Storage

No chemical storage areas were identified in this building during the current survey.

14.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

14.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

15. WGP14 – GUARD POST

15.1 Building Description

This building was constructed in 1994 and contains one floor. The annotated floor plan (Figure WGP14-1) showing the approximate building layout, dimensions, and sampling locations are contained in Appendix 15. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

15.2 Survey Findings

On March 2, 2005, XCG conducted a DSHMS on Building WGP14. The results of the DSHMS are presented in the subsections of Section 15.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for lead paint testing are included in Appendix 15. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 15).

15.2.1 Asbestos-Containing Materials (ACMs)

No samples were taken as no potential ACMs were identified in this building during the current survey.

15.2.2 Lead-Containing Materials

Two samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 15.1 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 15 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that no samples contained lead concentrations above the lead-paint classification of 5,000 ppm. The laboratory conducted a duplicate analysis of paint sample WGP14-101-CP1 for QA/QC purposes. There was a difference of approximately 30% in the results, which is considered reasonably close. This provides support that the results are representative.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey.

15.2.3 Mercury

There were no potential sources of mercury identified in the building during the current survey.

15.2.4 Silica

Silica-containing concrete and concrete block were observed throughout the interior and exterior of this building during the current survey.

15.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

15.2.6 Polychlorinated Biphenyls (PCBs)

No fluorescent light ballasts were identified in the building during the current survey. No other potential sources of PCBs, such as transformers, were observed in this building.

15.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, a small bar fridge and a wall-mounted air conditioning unit were identified in this building. The 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representative, lists a refrigerator that is different than the one observed, and the air conditioner is not listed at all. Information regarding the bar refrigerator could not be found; however, the air conditioner contains the refrigerant R-22, a CFC, which is a known ODS. The specification information on the air conditioner is summarized as follows:

- Room 101 – LG (air conditioner), Model No. WR-5210, 8.1 ounces of R-22.

15.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

15.2.9 Fuel, Oil, and/or Waste Oil Storage

There were no fuel, oil, and/or waste oil storage areas identified in the building during the current survey.

15.2.10 Chemical Storage

There were no chemical storage areas identified in the building during the current survey.

15.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

15.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

Table 15.1 Summary of Lead Paint Survey, Building WGP14

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WGP14-TR1	101	Paint from railing	Blue	Fair	1	1,843	-
WGP14-101-CP1	101	Ceiling paint	White	Fair	1	35.0	-
WGP14-101-CP1 Duplicate	101	Ceiling paint	White	Fair	1	24.2	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WGP14-101-CP1 Duplicate is a laboratory duplicate of WGP14-101-CP1

16. WGP15 – GUARD POST

16.1 Building Description

This building was constructed in 1995 and contains one floor. The annotated floor plan (Figure WGP15-1) showing the approximate building layout, dimensions, and sampling location is contained in Appendix 16. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

16.2 Survey Findings

On March 2, 2005, XCG conducted a DSHMS on Building WGP15. The results of the DSHMS are presented in the subsections of Section 16.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for lead paint testing are included in Appendix 16. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 16).

16.2.1 Asbestos-Containing Materials (ACMs)

No samples were taken as no potential ACMs were identified

16.2.2 Lead-Containing Materials

One sample of paint was collected from the building and submitted for laboratory analysis of lead. Table 16.1 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 16 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical result indicated that the sample did not contain a lead concentration above the lead-paint classification of 5,000 ppm. No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey.

16.2.3 Mercury

No potential sources of mercury were identified in the building during the current survey.

16.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

16.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

16.2.6 Polychlorinated Biphenyls (PCBs)

No fluorescent lights ballasts were identified in the building during the current survey. No other potential sources of PCBs, such as transformers, were observed in this building.

16.2.7 Ozone-Depleting Substances (ODSs)

No equipment containing potential ODSs was found in the building during the current survey.

16.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

16.2.9 Fuel, Oil, and/or Waste Oil Storage

Two jerry cans, several 1-litre bottles and two larger bottles of motor oil were found in the building. They appeared to be in good condition with no leaking. There was no secondary containment around the jerry can. In addition, the jerry cans were not labelled. XCG did not open these containers to determine their contents, as it was beyond the scope of work. However, they likely contain petroleum products, such as gasoline.

16.2.10 Chemical Storage

There was no chemical storage identified in the building during the current survey.

16.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

16.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

Table 16.1 Summary of Lead Paint Survey, Building WGP15

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WGP15-101-1-P	101	Door paint	Grey	Fair	1	<20	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

17. WW01 – ENTRANCE GATE

17.1 Building Description

This structure was constructed in 1965 and contains one floor. The annotated floor plan (Figure WW01-1) showing the approximate structure layout and dimensions is contained in Appendix 17. The location of this structure relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

17.2 Survey Findings

On February 25, 2005, XCG conducted a DSHMS on Building WW01. The results of the DSHMS are presented in the subsections of Section 17.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 17).

17.2.1 Asbestos-Containing Materials (ACMs)

No samples were taken, as there were no potential ACMs in the building.

17.2.2 Lead-Containing Materials

No samples were taken as no areas of the structure were coated with paint.

17.2.3 Mercury

There are two high intensity discharge (HID) lamps on the underside of the roof. There may potentially be mercury vapours in the HID lamps.

17.2.4 Silica

Silica-containing concrete and interlocking brick were observed throughout the structure, as it is solely constructed of these materials.

17.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

17.2.6 Polychlorinated Biphenyls (PCBs)

No fluorescent light ballasts were identified at this structure during the current survey. However, there were two HID lamps within this structure, which may potentially contain PCBs in the ballast. XCG did not open these lamps to obtain plate information, as it was not reasonably accessible. No other potential sources of PCBs, such as transformers, were observed in this building.

17.2.7 Ozone-Depleting Substances (ODSs)

No potential ODSs were identified in this structure during the current survey.

17.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this structure during the current survey.

17.2.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil, and/or waste oil storage sites were identified in this structure during the current survey

17.2.10 Chemical Storage

No chemical storage sites were identified in this structure during the current survey.

17.2.11 Radioactive Materials

No radioactive materials were observed in this structure during the current survey.

17.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

18. WW02 – STAFF AND TRAINING BUILDING**18.1 Building Description**

This building was constructed in 1965 and contains one floor. The annotated floor plan (Figure WW02-1) showing the approximate building layout, dimensions, and sampling locations is contained in Appendix 18. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

18.2 Survey Findings

On February 23, 2005, XCG conducted a DSHMS on Building WW02. The results of the DSHMS are presented in the subsections of Section 18.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 18. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 18).

18.2.1 Asbestos-Containing Materials (ACMs)

Two samples were collected from the building for bulk asbestos analysis using the PLM method and two floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 18.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plan in Appendix 18 shows the approximate sampling locations and areal or linear extent of asbestos (if present).

No asbestos containing materials were identified in this building during the current survey.

Table 18.1 Summary of Asbestos Survey, Building WW02

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW02-102-FT1	102	Vinyl floor tile, salmon coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW02-106-DT1	106	Ceiling tile, white, 4'x2'	Friable	Good	C (exposed)	None	ND	-
WW02-107-CT1	107	Ceiling tile, white, 4'x2'	Friable	Good	C (exposed)	None	ND	-
WW02-113-FT1	113	Vinyl floor tile, pink coloured, 12"x12"	Non-friable	Good	A	None	ND	-

Notes:

1 Friability is assessed as friable or non-friable

2 Condition is rated as good, fair or poor

3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details

4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.

5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained

ND None detected (<0.5%)

18.2.2 Lead-Containing Materials

Seven samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 18.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 18 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that no samples contained lead concentrations above the lead-paint classification of 5,000 ppm. The laboratory conducted a duplicate analysis of paint sample WW02-114-FP1 for QA/QC purposes. There was a difference of approximately 14% in the results, which is considered reasonably close. This provides support that the results are representative.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

18.2.3 Mercury

The only potential sources of mercury that were identified during the current survey were the fluorescent lamps and various thermostat switches throughout this building. The switches were located on south wall of Room 101 (Vestibule), south wall of Room 106 (Staff Training), south wall of Room 113 (Security Post), and north wall of Room 133 (Kitchenette). The lamps are expected to contain small quantities of mercury vapour. There were approximately 5 mercury-containing thermometers in Room 108 (Mechanical/Electrical Room). No high intensity mercury-vapour lamps were found in use at this building.

18.2.4 Silica

Silica-containing concrete and brick were observed throughout the interior and exterior of this building during the current survey.

18.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 18.2 Summary of Lead Paint Survey, Building WW02

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW02-113-WP1	113	Wall paint from the interior south wall	Grey	Good	1	642.9	-
WW02-113-WP2	113	Wall paint from the interior east wall	Sky blue	Good	1	624	-
WW02-114-WP1	114	Wall paint from the interior east wall	White	Good	1	<20	-
WW02-114-FP1	114	Floor paint	Grey	Fair	1	493	-
WW02-114-FP1 Duplicate	114	Floor paint	Grey	Fair	1	563	-
WW02-125-WP1	125	Wall paint from the interior north wall	Grey	Good	1	<20	-
WW02-127-WP1	127	Wall paint from the interior north wall	Pink	Good	1	477	-
WW02-132-WP1	132	Wall paint from the interior east wall	White	Good	1	<20	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW02-114-FP1 Duplicate is a laboratory duplicate of WW02-114-FP1

18.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 174 fluorescent light ballasts are located throughout the first floor of the building, with the exception of Room 111. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

18.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, three domestic refrigerators, three small bar refrigerators, and three soda pop vending machines were identified in this building. The 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives, does not list this equipment. The inventory lists additional air conditioning units on the roof and in the mechanical room of the building. One soda pop vending machine contains R-134a and the other contains R-12. Both of these are considered an ODS. Information regarding the refrigerant in all other pieces of equipment could not be found, and they potentially contain ODSs. The specification information for equipment that contained them area summarized as follows:

- Room 132 (lounge) - Choice-Vend (soda pop vending machine), Model No. CVC-168, Serial No. 231924, 7 ounces of R-12; and,
- Room 132 (lounge) - Royal Vendors (soda pop vending machine), Model No. RVCCR-660-13, Serial No. 200021BA00613, 5.2 ounces of R134a.

18.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

18.2.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil and/or waste oil storage was identified in this building during the current survey.

18.2.10 Chemical Storage

Small quantities (less than 10 containers) of various chemicals were stored in Room 112 (Foyer), such as lighter fluid, Vanguard (floor soap), and Swish Sun Up. There were also various cleaning compounds, similar to the chemicals in the foyer, in Rooms 115 and 116 (janitor rooms). There was no MSDS information for these chemicals in the storage rooms.

18.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

18.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

19. WW03 – ADMINISTRATION BUILDING

19.1 Building Description

This building was constructed in 1965 and contains one floor. The annotated floor plan (Figure WW03-1) showing the approximate building layout, dimensions, sampling locations and areas of ACMs and lead-based paint are contained in Appendix 19. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

19.2 Survey Findings

On February 23, 2005, XCG conducted a DSHMS on Building WW03. The results of the DSHMS are presented in the subsections of Section 19.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 19. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 19).

19.2.1 Asbestos-Containing Materials (ACMs)

A total of four samples were collected from the building for bulk asbestos analysis using the PLM method and seven floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 19.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plan in Appendix 19 shows the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- In Room 101, approximately 6 m² of salmon coloured 12" x 12" vinyl floor tiles containing between 10 and 20% chrysotile were identified.
- In 127 (hallway), approximately 172 m² of salmon coloured 9" x 9" vinyl floor tiles containing between 10 and 20% chrysotile were identified.
- In Room 128, approximately 10 m² of pink coloured 9" x 9" vinyl floor tiles containing between 10 and 20% chrysotile were identified.
- Two 4-inch diameter pipe elbows containing between 50 and 75% chrysotile were identified in Room 130, the Mechanical Room.

Table 19.1 Summary of Asbestos Survey, Building WW03

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW03-101-FT1	101	Vinyl floor tile, salmon coloured, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	6 m²
WW03-109-CT1	109	Ceiling tile, white coloured, 12"x12"	Friable	Good	C (exposed)	None	ND	-
WW03-117-FT1	117	Vinyl floor tile, white coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW03-124-FT1	124	Vinyl floor tile, white coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW03-126-FT1	126	Vinyl floor tile, grey coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW03-127-FT1	127	Vinyl floor tile, salmon coloured, 9"x9"	Non-friable	Good	A	7	(C) 10-20%	172 m²
WW03-127-CT1	127	Ceiling tile, white coloured, 24"x24"	Friable	Good	C (exposed)	None	ND	-
WW03-128-FT1	128	Vinyl floor tile, pink coloured, 9"x9"	Non-friable	Good	A	7	(C) 10-20%	10 m²
WW03-129-FT1	129	Linoleum flooring, cream coloured	Non-friable	Good	A	None	ND	-
WW03-130-PE1	130	Pipe elbow, homogeneous, grey, soft, cementations material	Non-friable	Good	B	7	(C) 50-75%	One 4" elbow
WW03-130-PE2	130	Pipe elbow, homogeneous, grey, soft, cementations material	Non-friable	Good	B	7	(C) 50-75%	One 4" elbow

Notes:

1 Friability is assessed as friable or non-friable

2 Condition is rated as good, fair or poor

3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details

4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.

5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained

ND None detected (<0.5%)

19.2.2 Lead-Containing Materials

Six samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 19.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 19 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that two samples contained lead concentrations above the lead-paint classification of 5,000 ppm. A green paint chip collected from the door to Room 102 was found to contain 9,775 ppm. This same paint was also on the north exterior side of Room 102 (i.e. hallway side). This lead-based green paint was estimated to cover an area of approximately 10 m². An orange coloured paint sample from the door to Room 130 was found to contain 55,693 ppm of lead. This paint was estimated to cover an area of approximately 4 m². The laboratory conducted a duplicate analysis of paint sample WW03-127-WP1 for QA/QC purposes. The results of both samples were below the detection limit of 20 ppm. This provides support that the results are representative.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

19.2.3 Mercury

The only potential sources of mercury that were identified during the current survey were the fluorescent lamps throughout this building which are expected to contain small quantities of mercury vapour. No high intensity discharge mercury-vapour lamps were found in use at this building.

19.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

19.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 19.2 Summary of Lead Paint Survey, Building WW03

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW03-DP1	101	Door paint from the main entrance on the south side	Yellow	Good	1	<20	-
WW03-101-WP1	101	Wall paint from the interior east side	Beige	Good	1	196	-
WW03-102-DP1	102	Door and wall paint from the exterior north side (hallway side)	Green	Good	1	9,775	10
WW03-126-WP1	126	Wall paint from the interior north side	Salmon	Good	1	33	-
WW03-127-WP1	127	Wall paint from the interior south side	Cream	Good	1	<20	-
WW03-127-WP1 Duplicate	127	Wall paint from the interior south side	Cream	Good	1	<20	-
WW03-130-DP1	130	Door paint from the entrance to the room	Orange	Good	1	55,693	4

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW03-127-WP1 Duplicate is a laboratory duplicate of WW03-127-WP1

19.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 147 fluorescent light ballasts are located throughout the first floor of the building, with the exception of Rooms 103, 104 and 120. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

19.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, one water fountain, one water cooler, one wall-mounted air conditioning unit, one domestic refrigerator, and four small bar refrigerators were identified in this building. In the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives, most of this equipment is not listed on the inventory. The inventory lists additional air conditioning units on the roof of the building. The refrigerator and the water cooler both contain R-134a and the wall-mounted air conditioning unit contains R-22, all of which are considered to be ODSs. Information regarding the refrigerant in all other pieces of equipment could not be found, but potentially contain ODSs. The specification information for the equipment that contained them is summarized as follows:

- Room 105 (office) - Danby (air conditioner), Model No. DAC8003D, Serial No. 1101020021000105, manufacturing date 0201, 430 grams of R-22;
- Room 116 (office) - Aspen (water cooler), 1.66 ounces of R-134a; and,
- Room 128A (office) - Danby (refrigerator), Model No. DUF1656W, Serial No. 04190878DL, Date 2004/04, 5.1 ounces of R-134a.

19.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

19.2.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil, and/or waste oil storage areas were identified in this building during the current survey.

19.2.10 Chemical Storage

There were small quantities of various cleaning compounds (Speedy Strip) in different size containers, which were stored in Room 109 (janitor's closet). There was no MSDS information for the compounds in this room.

19.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

19.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

20. WW04 – PROGRAMS AND SBC BUILDING

20.1 Building Description

This building was constructed in 1965, with additions in 1997, and contains one floor. The annotated floor plan (Figure WW04-1) showing the approximate building layout, dimensions, sampling locations and areas of ACM are contained in Appendix 20. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

20.2 Survey Findings

On February 24, 2005, XCG conducted a DSHMS on Building WW04. The results of the DSHMS are presented in the subsections of Section 20.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 20. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 20).

20.2.1 Asbestos-Containing Materials (ACMs)

One sample was collected from the building for bulk asbestos analysis using the PLM method and three floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 20.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plan in Appendix 20 shows the approximate sampling locations and areal or linear extent of asbestos (if present).

No asbestos containing materials were identified in this building during the current survey.

Table 20.1 Summary of Asbestos Survey, Building WW04

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW04-117-FT1	117	Vinyl floor tile, white coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW04-132-LIN1	132	Linoleum flooring, grey coloured	Non-friable	Good	A	None	ND	-
WW04-141-CT1	141	Ceiling tile, white coloured, 24"x48"	Friable	Good	C (exposed)	None	ND	-
WW04-165-FT1	165	Vinyl floor tile, white coloured with grey flecks, 12"x12"	Non-friable	Good	A	None	ND	-

Notes:

- 1 Friability is assessed as friable or non-friable
2 Condition is rated as good, fair or poor
3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
ND None detected (<0.5%)

20.2.2 Lead-Containing Materials

Five samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 20.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 20 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that no samples contained lead concentrations above the lead-paint classification of 5,000 ppm. The laboratory conducted a duplicate analysis of paint sample WW04-160-WP1 for QA/QC purposes. The analytical results of the two samples were within 5%, which is considered very close. This provides support that the results are representative.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

20.2.3 Mercury

The only potential sources of mercury that were identified during the current survey were the fluorescent lamps, thermometers in the mechanical rooms and various thermostat switches throughout this building which are expected to contain small quantities of mercury. There were switches on the east wall of Room 115 (Mechanical Room) and on the west and south walls of Room 159 (Mechanical Room). No high intensity mercury-vapour lamps were found in use at this building.

20.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

20.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 20.2 Summary of Lead Paint Survey, Building WW04

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW04-132-WP1	132	Wall paint from the north wall of the corridor	Green	Good	1	<20	-
WW04-140-WP1	140	Wall paint from the north wall of the vestibule	Blue	Good	1	<20	-
WW04-155-WP1	155	Wall paint from the east wall of the room	White	Good	1	<20	-
WW04-157-WP1	157	Wall paint from the north wall of the room	Green	Good	1	103	-
WW04-160-WP1	160	Wall paint from the north wall of the room	Light green	Good	1	2,412	-
WW04-160-WP1 Duplicate	160	Wall paint from the north wall of the room	Light green	Good	1	2,285	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

20.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 212 fluorescent light ballasts are located throughout the first floor of the building, with the exception of Rooms 100, 101 and 140. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

20.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, two small bar refrigerators, two water fountains and six wall-mounted air conditioners were identified in this building. In the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives, most of this equipment is not listed on the inventory. The inventory lists additional air conditioning units on the roof and on the exterior of the building. The wall-mounted air conditioning units were not in storage and contain R-22, which is considered to be an ODS. Information regarding the refrigerant in all other pieces of equipment could not be found, but they potentially contain ODSs. The specification information for equipment that contained them are summarized as follows:

- Room 106A (storage room) - Danby (air conditioner), Model No. SAC5299, 430 grams of R-22.

20.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

20.2.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil, and/or waste oil storage areas were identified in this building during the current survey.

20.2.10 Chemical Storage

There were five 3.78-litre containers of cleaning compounds in Room 127 (storage room). In Room 128 (janitor room), there were eight bottles of various sizes containing cleaning compounds, such as Lemon Glo Flash Back. Cleaning compounds were also stored in Room 160 (janitor room). There were approximately 15 to 20 containers ranging in size, up to 23 litres. Examples of the cleaning compounds included Expo 2000 (Dustbane), Speed Strip, and Swish Sun Up. There was no MSDS information on these chemicals found in this room.

20.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

20.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

21. WW05 – INTENSIVE SUPPORT BUILDING

21.1 Building Description

This building was constructed in 1965 and contains one floor. The annotated floor plan (Figure WW05-1) showing the approximate building layout, dimensions, sampling locations and areas of ACM is contained in Appendix 21. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

21.2 Survey Findings

On February 25, 2005, XCG conducted a DSHMS on Building WW05. The results of the DSHMS are presented in the subsections of Section 21.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 21. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 21).

21.2.1 Asbestos-Containing Materials (ACMs)

A total of two samples were collected from the building for bulk asbestos analysis using the PLM method and two floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 21.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plan in Appendix 21 shows the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- Approximately 11 various diameter pipe elbows and T-joints containing between 50 and 75% chrysotile were identified in Room 109 (Mechanical Room).

Table 21.1 Summary of Asbestos Survey, Building WW05

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW05-101-FT1	101	Vinyl floor tile, white coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW05-106-CT1	106	Ceiling tile, white coloured, 24"x48"	Friable	Good	C (exposed)	None	ND	-
WW05-109-PE1	109	Pipe elbow, homogeneous, grey, soft, cementitious material	Non-friable	Good	B	7	(C) 50-75%	7 elbows and 4 T-joints
WW05-111-FT1	111	Vinyl floor tile, green coloured, 12"x12"	Non-friable	Good	A	None	ND	-

Notes:

1 Friability is assessed as friable or non-friable

2 Condition is rated as good, fair or poor

3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details

4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.

5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained

ND None detected (<0.5%)

21.2.2 Lead-Containing Materials

Two samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 21.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 21 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that no samples contained lead concentrations above the lead-paint classification of 5,000 ppm. The laboratory conducted a duplicate analysis of the paint sample WW05-TR1. The results of the original and duplicate were nearly identical (332 and 335 ppm, respectively).

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

21.2.3 Mercury

The only potential sources of mercury that were identified during the current survey were the fluorescent lamps throughout this building, which are expected to contain small quantities of mercury vapour. No high intensity discharge mercury-vapour lamps were found in use at this building.

21.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

21.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 21.2 Summary of Lead Paint Survey, Building WW05

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW05-TR1	101	Door trim paint from the main entrance	Yellow	Good	1	332	-
WW05-TR1 Duplicate	101	Door trim paint from the main entrance	Yellow	Good	1	335	-
WW05-109-WP1	109	Wall paint from the north wall of the room	Cream	Good	1	<20	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW05-TR1 Duplicate is a laboratory duplicate of WW05-TR1

21.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 57 fluorescent light ballasts are located throughout the first floor of the building, with the exception of Rooms 105 and 109. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

21.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, two domestic refrigerators and six wall-mounted air conditioners were identified in this building. In the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives, most of this equipment is not listed on the inventory. One of the refrigerators contains R-134a, the other contains R-12, and one of the air conditioning units contains R-22, all of which are considered ODSs. Information regarding the refrigerant in all other pieces of equipment could not be found, but potentially contain ODSs. The specification information for equipment that contained them are summarized as follows:

- Room 101 (foyer) – Frigidaire Home Products WCI Canada Inc. (refrigerator), Model No. MRT18GRGW1, Serial No. BA01609494, 5 ounces of R-134a;
- Room 102 (control and office) – Camco Inc. (refrigerator), Model No. VL15JYRW-1, Serial No. BF174945, 4.5 ounces of R-12; and,
- Room 106 (office) – Goldstar (air conditioner), Model No. GA1012LCM, Serial No. LR88048, 22.6 ounces of R-22.

21.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

21.2.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil, and/or waste oil storage areas were identified in this building during the current survey.

21.2.10 Chemical Storage

There was approximately 15 containers of cleaning compounds (e.g. Expo 2000 Dustbane) in Room 104 (janitor's closet). They were stored in various size containers, including spray bottles. Two decanted bottles, most likely containing cleaning compounds, were not labelled with the proper workplace label. In Room 106 (office), there was 20 litre pail of Reflect Dustbane (scrubbable floor finish). There was no MSDS information for these chemicals found in this room.

21.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

21.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

22. WW06 – SEGREGATION BUILDING

22.1 Building Description

This building was constructed in 1965 and contains one floor. The annotated floor plan (Figure WA06-1) showing the approximate building layout, dimensions, sampling locations and areas of ACMs and lead-based paint are contained in Appendix 22. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

22.2 Survey Findings

On February 25, 2005, XCG conducted a DSHMS on Building WW06. The results of the DSHMS are presented in the subsections of Section 22.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 22. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 22).

22.2.1 Asbestos-Containing Materials (ACMs)

One sample was collected from the building for bulk asbestos analysis using the PLM method and four floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 22.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plan in Appendix 22 shows the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- Approximately six 2-inch diameter pipe elbows and T-joints containing 25-50% chrysotile were identified in good condition in Room 114 (Mechanical Room); and
- Room 115 contains 6 m² of cream coloured 9" x 9" floor tiles containing between 10 and 20% chrysotile.

Table 22.1 Summary of Asbestos Survey, Building WW06

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW06-102-FT1	102	Vinyl floor tile, cream coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW06-104-FT1	104	Vinyl floor tile, brown coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW06-111-LIN1	110	Linoleum flooring, cream coloured	Non-friable	Good	A	None	ND	1
WW06-114-PE1	114	Pipe elbow, homogeneous, grey, soft, cementitious material	Friable	Good	B	7	(C) 25-50%	3 elbows and 3 T-joints
WW06-115-FT1	115	Vinyl floor tile, cream coloured, 9"x9"	Non-friable	Good	A	7	(C) 10-20%	6 m²

Notes:

1 Friability is assessed as friable or non-friable

2 Condition is rated as good, fair or poor

3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details

4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.

5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained

ND None detected (<0.5%)

WW06-111-LIN1 was sampled from Room 110

22.2.2 Lead-Containing Materials

Seven samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 22.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 22 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that two samples contained lead concentrations above the lead-paint classification of 5,000 ppm. A yellow door trim sample collected from the southern door was found to have a lead concentration of 7,354 ppm. This lead-based paint covered an area of approximately 4 m². A white paint sample from the main corridor (east side) was found to contain a lead concentration of 7,006 ppm. This paint covered an area of approximately 95 m². The west corridor had the same colour white paint and is inferred to also be lead-based. This paint covered an area of approximately 102 m².

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

22.2.3 Mercury

The only potential sources of mercury that were identified during the current survey were the fluorescent lamps throughout this building, which are expected to contain small quantities of mercury vapour. No high intensity discharge mercury-vapour lamps were found in use at this building.

22.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

22.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 22.2 Summary of Lead Paint Survey, Building WW06

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW06-TR1(YEL)	116	Door trim paint at the southern entrance	Yellow	Good	1	7,354	4
WW06-101-WP1	101	Wall paint from the upper half of the corridor	White	Good	1	7,006	95
-	116	No sample was collected from the wall on the upper half of this corridor. However, it is inferred to contain the same lead concentration as WW06-101-WP1, since it is the same colour.	White	Good	1	*7,006	102
WW06-102-WP1	102	Wall paint from the interior east wall	Sky blue	Good	1	1,659	-
WW06-107-WP1	107	Wall paint from the interior west wall	Blue	Good	1	<20	-
WW06-107-WP2	107	Wall paint from the interior west wall	Green	Good	1	867	-
WW06-109-WP1	109	Wall paint from the interior west wall	Pink over dark green over light green	Good	3	688	-
WW06-114-WP1	114	Wall paint from the interior east wall	Cream	Good	1	32.0	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

* inferred lead concentration

22.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 48 fluorescent light ballasts are located throughout the first floor of the building, with the exception of Rooms 105 and 114. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

22.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, one domestic refrigerator, one small bar fridge and one wall-mounted air conditioner were identified in this building. In the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives, most of this equipment is not listed on the inventory. The refrigerator is listed in the inventory as containing R-12, which is considered an ODS. Information regarding the refrigerant in the other pieces of equipment could not be found, but they may potentially contain ODSs.

- Hallway – General Electric (refrigerator), Model No. and Serial No. not available, 0.15 kilograms of R-12; and,
- Room 111 (court) – Friedrich Air Conditioning Co., Model No. MW12Y1E, Serial No. LBHCO 0083, refrigerant not indicated.

22.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

22.2.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil, and/or waste oil storage areas were identified in this building during the current survey.

22.2.10 Chemical Storage

In Room 109 (laundry room), there were three 5-litre containers of cleaning compounds, such as Vanguard (floor cleaner) and Nu-Life (scum remover). There was no MSDS information found in this room.

22.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

22.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

23. WW07 – HOSPITAL BUILDING

23.1 Building Description

This building was constructed in 1965 and contains one floor. The annotated floor plan (Figures WW07-1) showing the approximate building layout, dimensions, sampling locations and areas of ACMs is contained in Appendix 23. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

23.2 Survey Findings

On February 24, 2005, XCG conducted a DSHMS on Building WW07. The results of the DSHMS are presented in the subsections of Section 23.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 23. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 23).

23.2.1 Asbestos-Containing Materials (ACMs)

A total of three samples were collected from the building for bulk asbestos analysis using the PLM method and nine floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 23.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plan in Appendix 23 shows the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- Approximately fifteen 6-inch diameter pipe elbows containing between 25 and 50% chrysotile were identified in good condition in room 139 (Mechanical Room);
- Approximately eighteen 4-inch diameter pipe elbows containing between 50 and 75% chrysotile were identified in good condition in room 139 (Mechanical Room);
- In room 120 (Optometrist), approximately 32 m² of cream floor tiles, 12"x12" in size, containing between 10 and 20% chrysotile were identified in good condition;
- In room 121 (Supply Room), approximately 6 m² of cream coloured floor tiles with black flecks, 9"x9" in size, containing between 10 and 20% chrysotile were identified in good condition;
- In room 126 (Dentist Office), approximately 20 m² of grey floor tiles, 9"x9" in size, containing between 10 and 20% chrysotile were identified in good condition;

Table 23.1 Summary of Asbestos Survey, Building WW07

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW07-101-FT1	101	Vinyl floor tile, grey coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW07-116-FT1	116	Vinyl floor tile, grey coloured with white flecks, 12"x12"	Non-friable	Good	A	None	ND	-
WW07-120-FT1	120	Vinyl floor tile, cream coloured, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	32 m ²
WW07-121-FT1	121	Vinyl floor tile, cream coloured with black flecks, 9" x 9"	Non-friable	Good	A	7	(C) 10-20%	6 m ²
WW07-126-FT1	126	Vinyl floor tile, grey coloured, 9"x9"	Non-friable	Good	A	7	(C) 10-20%	20 m ²
-	125	Although not sampled, the floor tiles in this room appear to be the same as in room 126, and are inferred to contain the same amount of ACMs	Non-friable	Good	A	7	(C) 10-20%	12 m ²
WW07-126-FT2	126	Vinyl floor tile, medium grey coloured, 9"x9"	Non-friable	Good	A	7	(C) 10-20%	1 m ²
WW07-135-FT1	135	Vinyl floor tile, blue coloured with white flecks, 9"x9"	Non-friable	Good	A	7	(C) 10-20%	16 m ²
WW07-139-PE1	139	Pipe elbow, homogeneous, grey, soft, cementitious material	Friable	Poor	B	3	(C) 25-50%	15 6-inch elbows
WW07-139-PE2	139	Pipe elbow, homogeneous, grey, soft, cementitious material	Friable	Poor	B	3	(C) 50-75%	18 4-inch elbows
WW07-149-CT1	149	Ceiling tile, beige, layered, compressed, fibrous material, 24"x48"	Friable	Good	C (exposed)	None	ND	-
WW07-149-FT1	149	Vinyl floor tile, grey coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW07-149-FT2	149	Vinyl floor tile, dark grey coloured, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	1 m ²

Notes:

- 1 Friability is assessed as friable or non-friable
- 2 Condition is rated as good, fair or poor
- 3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
- 4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.

5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
ND None detected (<0.5%)

- In room 125 (Dentist), approximately 12 m² of grey floor tiles, 9"x9" in size, containing between 10 and 20% chrysotile were identified in good condition. Although not sampled, these tiles appeared to be the same as those in room 126 and are thus, inferred to contain the same amount of asbestos;
- In room 126 (Dentist Office), approximately 1 m² of medium grey floor tiles, 9"x9" in size, containing between 10 and 20% chrysotile were identified in good condition;
- In room 135 (Storage), approximately 16 m² of black floor tiles, 9"x9" in size, containing between 10 and 20% chrysotile were identified in good condition; and,
- In room 149 (Office), approximately 1 m² of dark grey floor tiles, 12"x12" in size, containing between 10 and 20% chrysotile were identified in good condition.

23.2.2 Lead-Containing Materials

Ten samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 23.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 23 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that no samples contained lead concentrations above the lead-paint classification of 5,000 ppm. No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

23.2.3 Mercury

The only potential sources of mercury that were identified during the current DSHMS were the fluorescent lamps and various thermostat switches throughout this building. There were fifteen mercury-containing thermostat switches located in Rooms 102, 103, 104, 105, 106, 120, 123, 125, 126, 127, 131 (two switches), 145, 146 and 149. The fluorescent lamps are expected to contain small quantities of mercury vapour. No high intensity discharge (HID) mercury-vapour lamps were found in use at this building.

23.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

23.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 23.2 Summary of Lead Paint Survey, Building WW07

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW07-TR1	149	Paint from the door frame to room 116	White	Good	1	655	-
WW07-117-WP1	117	Paint from the interior south wall	Grey	Good	1	83.3	-
WW07-120-TR1	120	Paint from the door frame	Turquoise	Good	1	41.0	-
WW07-120-WP1	120	Paint from the interior north wall	Green	Good	1	4,710	-
WW07-121-WP1	121	Paint from the interior north wall	Yellow	Good	1	<20	-
WW07-123-TR1	123	Paint from the door frame	Purple	Good	1	1,581	-
WW07-126-WP1	126	Paint from the interior north wall	Pink	Good	1	2,417	-
WW07-139-WP1	139	Paint from the interior west wall	Cream	Good	1	26.1	-
WW07-143-TR1	143	Paint from the door to the room	White	Good	1	1,152	-
WW07-149-TR1	149	Paint from the door to the corridor	Grey	Fair	1	39.3	-

Notes:¹ Condition is rated as good, fair or poor with peeling and/or flaking² Layers of paint are noted visually and can only be observed if the layers are different colours**Bold** Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

23.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 135 fluorescent light ballasts are located throughout the first floor of the building, with the exception of Rooms 113A, 122, 139 and 141. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

23.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, two domestic refrigerators, seven small bar fridges and one water cooler were identified in this building. With the exception of one small bar refridge, none of this equipment is listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives, or it is listed differently. The inventory also listed additional air conditioning units on the roof of the building. One of the small bar fridges contains R-12 refrigerant, while the water cooler and one of the fridges contain R-134a refrigerant, both of which are considered and ODS. Information regarding the refrigerant in the other pieces of equipment could not be found, but they may potentially contain ODSs. The specification information on the equipment that contained them is summarized as follows:

- Room 105 (office) – Sunbeam (water cooler), Model No. YLR2-5-90CH3, Serial No. 2001 1200157, 1.66 ounces of R-134a;
- 148 (corridor) – LG (refrigerator), Model No. GR-T542, Serial No. 006KR00113, 135 grams of R-134a; and,
- Room (131) – Wood's (bar fridge), Model No. CWR05ZA, Serial No. 02861376BY9302, 0.12 kilograms of R-12.

23.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

23.2.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil, and/or waste oil storage areas were identified in this building during the current survey.

23.2.10 Chemical Storage

Cleaning compounds installed in six dispensing units were identified in Room 140 (Janitor's Closet). A hazardous materials inventory and/or MSDS information was not present in this room, where the chemicals were stored.

23.2.11 Radioactive Materials

Radioactive sources were identified in this building in two locations. Rooms 106 (X-Ray) and 126 (Dentist Office) contained X-Ray equipment for the diagnosis of patients. Both sources are assumed to be in compliance with applicable regulations; however, XCG did not test the building for ambient levels of radiation as this was beyond the scope of the terms of reference.

23.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

24. WW08 – ACCOMMODATION BUILDING (UNIT 4)

24.1 Building Description

This building was constructed in 1965 and contains two floors, and a partial basement. There is also a mechanical room on the roof level. This building is one of five used to house the inmates. The annotated floor plans (Figures WW08-B, WW08-1, and WW08-2) showing the approximate building layout, dimensions, sampling locations and areas of ACMs and lead-based paint are contained in Appendix 24. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

24.2 Survey Findings

On February 16, 2005, XCG conducted a DSHMS on Building WW08. The common areas (e.g. offices, T.V. room, etc.) were generally all inspected. However, only two cells were inspected and the remaining ones are understood to be similar. In addition, only one janitor's room was inspected from one of the wings, as the CSC escort indicated that the janitor's room in all six wings are the same. The CSC escort indicated to XCG that the cells are generally all the same. The results of the DSHMS are presented in the subsections of Section 24.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos testing are also included in Appendix 24. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 24).

24.2.1 Asbestos-Containing Materials (ACMs)

A total of three samples were collected from the building for bulk asbestos analysis using the PLM method and three floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 24.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plans in Appendix 24 show the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- The vinyl floor tiles in the cells contain 10 to 20 % chrysotile. There were two types of 9" x 9" tiles laid in a checker pattern. The CSC escort indicated that all cells are generally the same. As such, XCG only inspected one cell and it is inferred that the asbestos content is the same in all cells. The total area of the asbestos-containing vinyl floor tiles for all cells on both floors was estimated to be approximately 400 m².

Table 24.1 Summary of Asbestos Survey, Building WW08

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW08-101-FT1	101	Vinyl floor tile, white with grey flecks, 12"x12"	Non-friable	Good	A	None	ND	-
WW08-A8-FT1	Cell A08	Vinyl floor tile, creamy pink with flecks, 9"x9", the cell had two types of tiles (WW08-A8-FT2), both contained asbestos, estimated quantity is total for all cells on both floors	Non-friable	Good	A	7	(C) 10-20%	400 m ²
WW08-A8-FT2	Cell A08	Vinyl floor tile, white with grey flecks, 9"x9", estimated quantity included in above	Non-friable	Good	A	7	(C) 10-20%	See above
WW08-G101-CT1	G101	Ceiling tile, white, 4'x2'	Friable	Good	B	None	ND	-
WW08-G103-CT1	G103	Ceiling tile, white, 4'x2'	Friable	Good	B	None	ND	-
WW08-G105-CT1	G105	Ceiling tile, white with circle pattern, 4'x2'	Friable	Good	B	None	ND	-

Notes:

- 1 Friability is assessed as friable or non-friable
2 Condition is rated as good, fair or poor
3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
ND None detected (<0.5%)

24.2.2 Lead-Containing Materials

Nine samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 24.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plans in Appendix 24 show the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that one type of paint contained lead concentrations above the lead-paint classification of 5,000 ppm. The mocha coloured wall paint in Room A19 (Janitor's Closet) contained a lead concentration of 13,362 ppm. This paint covers an area of approximately 7.5 m². The laboratory conducted a duplicate analysis of paint sample WW08-B01-WP1 for QA/QC purposes. There was a considerable difference in the results of the original and duplicate samples (60 %). However, this may have been a result of the concentrations being so low that a moderate variance can result in a large percentage.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

24.2.3 Mercury

The only potential sources of mercury that were identified during current survey were the fluorescent lamps and the thermostat switches, one on the east wall of Room H106 (Case Prep. Office) and one on the north wall of Room H109 (Corridor), which are expected to contain small quantities of mercury. No high intensity discharge mercury-vapour lamps were found in use at this building.

24.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

24.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 24.2 Summary of Lead Paint Survey, Building WW08

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW08-WP1	Hallway	Wall paint from the central open area/hallway	White	Good	1	964	-
WW08-102-WP1	102	Wall paint from the interior north wall	Green	Good	1	298	-
WW08-A18-WP1	A18	Wall paint from the interior north wall	Sky blue	Good	1	629	-
WW08-A19-WP1	A19	Wall paint from the interior north wall	Mocha	Good	1	13,362	7.5
WW08-G101-CP1	G101	Ceiling paint from interior northeast area	White	Good	1	<20	-
WW08-G101-WP1	G101	Wall paint from interior north wall, top portion	Sky blue	Good	1	<20	-
WW08-G101-WP2	G101	Wall paint from interior north wall, bottom portion	Dark blue	Good	1	752	-
<i>Second Floor</i>							
WW08-B01-WP1	B01	Wall paint from typical cell	Cream	Good	1	37.9	-
WW08-B01-WP1 Duplicate	B01	Wall paint from typical cell	Cream	Good	1	60.7	-
WW08-H103-WP1	H103	Wall paint from the interior west wall	Mocha	Fair	1	253	-

Notes:¹ Condition is rated as good, fair or poor with peeling and/or flaking² Layers of paint are noted visually and can only be observed if the layers are different colours**Bold** Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW08-B01-WP1 Duplicate is a laboratory duplicate of WW08-B01-WP1

24.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 208 fluorescent light ballasts are located throughout the entire building. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

24.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, three wall-mounted air conditioners, four domestic refrigerators, one water cooler, three chest freezers, one water fountain, one ice maker, one small bar fridge and one soda pop vending machine were identified in this building. In the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives, most of this equipment is not listed on the inventory. The inventory lists additional air conditioning units on the roof and on the exterior of the building. One of the wall mounted air conditioning units contains R-22, one of the refrigerators contains R-12 while the others contain R-134a. The water fountain contains R-12, the ice maker contains R-404a and the soda pop vending machine contains R-12. All of these refrigerants are considered ODSs. Information regarding the refrigerant in all other pieces of equipment could not be found, but they may potentially contain ODSs. The wall-mounted air conditioning unit in the basement of the building appears to be abandoned and should be disposed of appropriately, in accordance with applicable regulations.

- Room 102 (coffee room) – Admiral, made by Inglis Ltd. (refrigerator), Model No. AAT-46502, Serial No. 6DM10630, 4.25 ounces of R-12;
- Room 105 (TV room) – Inglis (refrigerator), Model No. 1KT141300, Serial No. VSL3625799, manufacturing date 09/01, 3.75 ounces of R-134a;
- Room 105 (TV room) – Frigidaire Home Products, WCI Canada Inc (refrigerator), Model No. MRT18GRGW1, Serial No. BA01609480, 5 ounces of R-134a;
- Room 105 (TV room) – Hoshizaki Electric Co. Ltd. (icemaker), Model No. AM-150BAF, Serial No. P11058A, 9.5 ounces of R404a;
- Room 106 (control & core area) – Mitsubishi Electric Corporation (air conditioner), Model No. MS09EW, Serial No. 45001970 C, 25 pounds of R22;
- Room G102 (activities) – W.C. Woods Co. Ltd. (refrigerator), Model No. R12WRRCC-1, Serial No. 09543595CK, 3 ounces of R-134a; and,
- H109 (corridor) – Dixie Narco Inc. (soda pop vending machine), Model No. DNTP 232-8, Serial No. not legible, 8.5 ounces of R-12.

24.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

24.2.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil, and/or waste oil storage areas were identified in this building during the current survey.

24.2.10 Chemical Storage

No chemical storage areas were observed in this building during the current survey.

24.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

24.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

25. WW09 – ACCOMMODATION BUILDING (UNIT 1)

25.1 Building Description

This building was constructed in 1965 and contains two floors, and a partial basement. There is also a mechanical room on the roof level. This building is one of five used to house the inmates. The annotated floor plans (Figures WW09-B, WW09-1, WW09-2, and WW09-R) showing the approximate building layout, dimensions, sampling locations and areas of ACMs and lead-based paint are contained in Appendix 25. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

25.2 Survey Findings

On February 16, 2005, XCG conducted a DSHMS on Building WW09. The common areas (e.g. offices, T.V. room, etc.) were all inspected. However, only one cell was inspected and the remaining ones are understood to be similar. In addition, only one janitor's room was inspected from one of the wings, as the CSC escort indicated that the janitor's room in all six wings are the same. The CSC escort indicated to XCG that the cells are generally all the same. The results of the DSHMS are presented in the subsections of Section 25.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as whole, are presented in Section 50. The certificates of analysis for asbestos testing are also included in Appendix 25. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 25).

25.2.1 Asbestos-Containing Materials (ACMs)

A total of six samples were collected from the building for bulk asbestos analysis using the PLM method and three floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 25.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plans in Appendix 25 show the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- There were approximately 5 to 10 4-inch diameter pipe elbows containing >75% chrysotile in Room 102 (Coffee Room). The pipe elbows were in good fair condition. Because of the criss-cross alignment of the pipe network and obstructions from the mechanical equipment, the exact number of elbows could not be counted properly; and,

Table 25.1 Summary of Asbestos Survey, Building WW09

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW09-101-FT1	101	Vinyl floor tile, grey coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW09-102-PE1	102	Pipe elbow insulation, homogeneous, grey, soft, cementitious material	Friable	Fair	C (exposed)	6	(C) >75%	5-10 4-inch elbows
WW09-104-CT1	104	Ceiling tile, homogeneous, beige, compressed fibrous material	Friable	Fair	C (exposed)	None	ND	-
WW09-105-STU1	105	Ceiling stucco, homogeneous, white, soft, cementitious material	Non-friable	Good	C (exposed)	None	ND	-
WW09-C21-FT1	C21	Vinyl floor tile, cream coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW09-G101-FT1	G101	Vinyl floor tile, cream coloured, 12"x12"	Non-friable	Fair	A	None	ND	-
<i>Second Floor</i>								
WW09-H103-CT1	H103	Ceiling tile, homogeneous, beige, compressed fibrous material	Non-friable	Good	C (exposed)	None	ND	-
WW09-H103-CT2	H103	Ceiling tile, homogeneous, beige, compressed fibrous material	Non-friable	Good	C (exposed)	None	ND	-
WW09-H109-STU	H109	Ceiling stucco, homogeneous, white, soft, cementitious material	Non-friable	Good	C (exposed)	None	ND	-

Notes:

- 1 Friability is assessed as friable or non-friable
2 Condition is rated as good, fair or poor
3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
ND None detected (<0.5%)

- The scope of work required that each building be treated and sampled separately. However, in the case of WW09, no samples of the floor tiles in the cells were collected for analyses, as it appeared to be the same as the cells in WW08. The vinyl floor tiles in the cells in WW08, WW09, and WW11 all contained asbestos. As such, the cells in WW09 were inferred to contain 10-20% chrysotile. The estimated area is approximately 400 m².

25.2.2 Lead-Containing Materials

Eight samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 25.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plans in Appendix 25 show the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that one paint sample contained a lead concentration above the lead-paint classification of 5,000 ppm. The purple wall paint in H109 contained a lead concentration of 5,128 ppm. H109 is the hallway located at the north end of the second floor, in the area of the office. This paint covers an area of approximately 67 m². The laboratory conducted a duplicate analysis of paint sample WW09-G106-WP1. The results of the original and duplicate samples were the same (<20 ppm). This provides support that the results are representative.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

25.2.3 Mercury

The only potential sources of mercury that were identified during current survey were the fluorescent lamps and various thermostat switches throughout this building. There were thermostat switches observed on the west walls of rooms H106 (Case Prep. Office), H107 (Case Prep. Office) and H109 (Corridor). The fluorescent lamps are expected to contain small quantities of mercury vapour. No high intensity discharge (HID) mercury-vapour lamps were found in use at this building.

25.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

25.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 25.2 Summary of Lead Paint Survey, Building WW09

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW09-101-WP1	101	Paint from the interior south wall	Mocha	Good	1	<20	-
WW09-105-WP1	105	Paint from the interior west wall	Sky blue	Good	1	<20	-
WW09-A18-FP1	A18	Paint from the floor of the room	Grey	Good	1	779	-
WW09-G101-WP1	G101	Paint from the interior north wall	Black	Good	1	225	-
WW09-G106-WP1	G106	Paint from the lower half of the interior south wall	Purple blue	Poor	1	<20	-
WW09-G106-WP1 Duplicate	G106	Paint from the lower half of the interior south wall	Purple blue	Poor	1	<20	-
<i>Second Floor</i>							
*WW19-B19-FR1	B19	Paint on door frame	Sky blue	Good	1	40.1	-
*WW19-C18-WP1	C18	Paint from the interior south wall	Sky blue	Good	1	<20	-
WW09-H109-WP1	H109	Paint on the interior south wall	Purple	Good	1	5,128	67

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

* WW19-B19-FR1 and WW19-C18-WP1 The prefix “WW19” was mistakenly used and should have been WW09

WW09-G106-WP1 Duplicate is a laboratory duplicate of WW09-G106-WP1

25.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 208 fluorescent light ballasts are located throughout the entire building. XCG could not open up most of the plate covers to record the ballast information because the ceilings were too high. One ballast located in Room 101 was accessed and the label information is summarized as follows:

- Room 101 (office) – Advance Transformer Co., Class P, Catalogue No. REL-2P32-RH-TP, No PCBs.

No other potential sources of PCBs, such as transformers, were observed in this building.

25.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, two wall-mounted air conditioners, four domestic refrigerators, one water cooler, three chest freezers, one water fountain, one ice maker, one small bar fridge and one soda pop vending machine were identified in this building. Most of this equipment is not listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives. The inventory lists additional air conditioning units on the roof and on the exterior of the building. The wall-mounted air conditioning units contain R-22 refrigerant. The water cooler, three of the four domestic refrigerators, and the soda pop vending machine contain R-134a. The other domestic refrigerator, one of the chest freezers and the water fountain contain R-12. The ice maker contains R-404a. All of these refrigerants are considered to be an ODS. Information regarding the refrigerant in all other pieces of equipment could not be found, but they may potentially contain ODSs. The specification information on equipment that contained them are summarized as follows:

- Room 101 (office) – Mitsubishi Electric Corporation (air conditioner), Model No. MS09EW, Serial No. 45003135, 25 pounds of R-22;
- Room 102 (coffee room) – Chicago (water cooler), Model No. 205C, Serial No. 28350293, 1.35 ounces of R-134a;
- Room 102 (coffee room) – White Westinghouse (refrigerator), Model No. WP172TRW1, Serial No. 880824953, 142 grams of R-12;
- Room 105 (T.V. room) – Frigidaire Home Products (refrigerator), Model No. MRT18GRGW1, Serial No. BA01703778, manufactured 04-00, 5 ounces of R-134a;
- Room 105 (T.V. room) – Inglis (refrigerator), Model No. IKT141300, Serial No. VSL 3625462, manufactured 08-01, 3.75 ounces of R-134a;
- Room 105 (T.V. room) – Hoshizaki Electric Co. Ltd. (ice maker), Model No. AM-150BAF, Serial No. P11202B, 9.5 ounces of R-404a;

- Room 106 (control & core area) - Mitsubishi Electric Corporation (air conditioner), Model No. MS09EW, Catalogue No. 45003469 D, 25 pounds of R-22;
- Room G102 (activities) – LG (refrigerator), Model No. GR-T542, Serial No. 102KR00004, 135 grams of R-134a; and,
- H109 (corridor) – Dixie Narco (soda pop vending machine), Model No. and Serial No. not legible, 7.5 ounces of R-134a.

25.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

25.2.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil, and/or waste oil storage areas were identified in this building during the current survey.

25.2.10 Chemical Storage

There were approximately 10 containers of various cleaning compounds (e.g. floor soap, floor finisher) in Room H103 (washroom). There was no MSDS information for these chemicals located in the building.

25.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

25.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

26. WW10 – ACCOMMODATION BUILDING (UNIT 2)

26.1 Building Description

This building was constructed in 1965 and contains two floors, and a partial basement. There is also a mechanical room on the roof level. This building is one of five used to house the inmates. The annotated floor plans (Figures WW10-B, WW10-1, and WW10-2) showing the approximate building layout, dimensions, sampling locations and areas of ACMs and lead-based paint are contained in Appendix 26. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

26.2 Survey Findings

On February 17, 2005, XCG conducted a DSHMS on Building WW10. The common areas (e.g. offices, T.V. room, etc.) were all inspected. However, only two cells were inspected and the remaining ones are understood to be similar. The CSC escort indicated to XCG that the cells are generally all the same. The results of the DSHMS are presented in the subsections of Section 26.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos testing are also included in Appendix 26. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 26).

26.2.1 Asbestos-Containing Materials (ACMs)

A total of seven samples were collected from the building for bulk asbestos analysis using the PLM method and five floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 26.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plans in Appendix 26 show the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- One pipe elbow that was 2 inches in diameter containing 50-75% chrysotile was identified in good condition in Room 102 (Coffee Room).
- The vinyl floor tiles in the cells contain 10 to 20 % chrysotile. The CSC escort indicated that all cells are generally the same. As such, XCG only inspected one cell and it is inferred that the asbestos content is the same in all cells. The total area of the asbestos-containing vinyl floor tiles for all cells on both floors was estimated to be approximately 400 m².

Table 26.1 Summary of Asbestos Survey, Building WW10

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW10-101-CT1	101	Ceiling tile, white coloured, 24"x24"	Friable	Fair	C (exposed)	None	ND	-
WW10-102-PE1	102	Pipe elbow, 2" diameter, homogeneous, grey, soft, cementitious material	Friable	Good	A	5/7	(C) 50-75%	1 elbow
WW10-105-STU1	105	Ceiling stucco, white coloured	Non-friable	Fair	C (exposed)	None	ND	-
WW10-G101-CT1	G101	Ceiling tile, white coloured, 9"x9"	Friable	Good	C (exposed)	None	ND	-
WW10-G102-CT1	G102	Ceiling tile, white coloured, 9"x9"	Friable	Good	C (exposed)	None	ND	-
<i>Second Floor</i>								
WW10-B08-FT1	B08	Vinyl floor tile, white coloured with grey flecks, 9"x9"	Non-friable	Good	A	7	(C) 10-20%	400 m²
WW10-B21-FT1	B21	Vinyl floor tile, white coloured, 9"x9"	Non-friable	Good	A	None	ND	-
WW10-B21-FT2	B21	Vinyl floor tile, pink coloured with grey and punk flecks, 9"x9", this tile was a small patch repair work	Non-friable	Good	A	7	(C) 10-20%	0.2 m²
WW10-B21-FT3	B21	Vinyl floor tile, cream coloured, 9"x9"	Non-friable	Good	A	None	ND	-
WW10-B21-FT4	B21	Vinyl floor tile, white coloured, 9"x9"	Non-friable	Good	A	None	ND	-
WW10-H103-CT1	H103	Ceiling tile, white coloured, 24"x48"	Friable	Good	C (exposed)	None	ND	-
WW10-H108-CT1	H106	Ceiling tile, white coloured with fleck pattern, 24"x48"	Friable	Good	C (exposed)	None	ND	-

Notes:

1 Friability is assessed as friable or non-friable

2 Condition is rated as good, fair or poor

3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details

4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.

5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained

ND None detected (<0.5%)

WW10-H108-CT1 was sampled from room H106

- A small patchwork of pink coloured vinyl floor tile in the second floor hallway (B21) was found to contain 10 to 20% chrysotile. There were four different types of tile sampled in B21, and only one of them was found to contain asbestos. The area covered by this tile was estimated to be approximately 0.2 m². The main tile in all hallways was the cream-coloured one that did not contain asbestos.

26.2.2 Lead-Containing Materials

Eleven samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 26.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plans in Appendix 26 show the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that one sample contained lead concentrations above the lead-paint classification of 5,000 ppm. A brown door trim paint sample taken from the H109 corridor (covering all doors in this corridor) was found to have a lead concentration of 6,787 ppm. A laboratory duplicate of the same sample was found to contain 6,758 ppm. This paint covers the 8 doors in the corridor, for an estimated surface area of approximately 16 m². The laboratory conducted duplicate analyses of two paint samples (WW10-B08-WP2 and WW10-H109-TR1). The results of the original and duplicate sample of WW10-B08-WP2 were within 33%, which is relatively close. For WW10-H109-TR1, the results of the original and duplicate were nearly identical. These findings provide support that the results are representative.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

26.2.3 Mercury

The only potential sources of mercury that were identified during current survey were the fluorescent lamps and the thermostat switches, one on the east wall of Room H106 (Case Prep. Office) and one on the north wall of Room H109 (Corridor), which are expected to contain small quantities of mercury. No high intensity discharge mercury-vapour lamps were found in use at this building.

26.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

26.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 26.2 Summary of Lead Paint Survey, Building WW10

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>Basement</i>							
WW10-B01-WP1	B01	Paint from the interior east wall	Cream	Good	1	26.3	-
<i>First Floor</i>							
WW10-103-WP1	103	Paint from the interior west wall	Green	Good	1	89.0	-
WW10-B08-DP1	B08	Paint from the door	Dark blue	Good	1	3,884	-
WW10-B08-WP1	B08	Paint from the interior east wall	Sky blue	Good	1	<20	-
WW10-B08-WP2	B08	Paint from the interior east wall	Mocha	Good	1	<20	-
WW10-B08-WP2 Duplicate	B08	Paint from the interior east wall	Mocha	Good	1	26.7	-
WW10-G101-CP1	G101	Paint from the interior south wall	White	Good	1	<20	-
WW10-G102-WP1	G102	Paint from the interior south wall	Pink	Good	1	574	-
WW10-G104-WP1	G104	Paint from the interior south wall	Green	Good	1	154	-
WW10-G106-DP1	G106	Door paint from the main entrance	Sky blue	Good	1	25.8	-
<i>Second Floor</i>							
WW10-H109-WP1	H109	Paint from the interior east wall	Cream	Good	1	25.8	-
WW10-H109-TR1	H109	Paint from the door trim	Brown	Good	1	6,787	16
WW10-H109-TR1 Duplicate	H109	Paint from the door trim	Brown	Good	1	6,758	16

Notes:¹ Condition is rated as good, fair or poor with peeling and/or flaking² Layers of paint are noted visually and can only be observed if the layers are different colours**Bold** Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW10-B08-WP2 Duplicate is a laboratory duplicated of WW10-B08-WP2

WW10-H109-TR1 Duplicate is a laboratory duplicate of WW10-H109-TR1

26.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 205 fluorescent light ballasts are located throughout the entire building. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

26.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, three wall-mounted air conditioners, three domestic refrigerators, one water cooler, one chest freezer, one water fountain, one ice maker, one small bar fridge and one soda pop vending machine were identified in this building. In the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives, most of this equipment is not listed on the inventory. The inventory lists additional air conditioning units on the roof and on the exterior of the building. The wall-mounted air conditioners contain R-22, one of the refrigerators contains R-12, the others refrigerators contain R-134a, the chest freezer and the soda pop vending machine contain R-134a, the ice maker contains R-404a and the water fountain and water cooler both contain R-12. All of these refrigerants are considered ODSs. Information regarding the refrigerant in the small bar fridge could not be found, but it potentially contains an ODS. The specification information on the equipment that contained them is summarized as follows:

- Room 101 (office) – Mitsubishi Electric Corporation (air conditioner), Model No. MS09EW, Serial No. 45003475 D, 25 pounds of R-22;
- Room 102 (coffee room), - Coldspot, manufactured for Simpsons-Sears Ltd. (refrigerator), Model No. C106 559470, Serial No. 479828, 18 ounces of R-12;
- Room 103 (T.V. room) – Inglis (refrigerator), Model No. IKT141300, Serial No. VSL3625311, manufacturing date 08-01, 3.75 ounces of R-134a;
- Room 105 (T.V. room) – Frigidaire Home Products (refrigerator), Model No. FRT180RHW0, Serial No. BA00322519, manufactured 01-00, 5 ounces of R-134a;
- Room 105 (T.V. room) – Frigidaire Home Products (freezer), Model No. CFC13M4HW0, Serial No. WB94009343, manufactured 10-99, 9 ounces of R-134a;
- Room 105 (T.V. room) – Hoshizaki Electric Company (ice maker), Model No. AM-150BAF, Serial No. P11174B, 9.5 ounces of R-404a;
- Room 106 (control and core area) – Mitsubishi Electric Corporation (air conditioner), Model No. MS09EW, Serial No. 45003538 D, 25 pounds of R-22;

- Room G104 (office) - Danby Products (air conditioner), Model No. SAC5254DE-1, Serial No. 02040309025058, manufactured 03/04, 340 grams of R-22;
- Room H102 (storage) – Crystal Mountain Water Cooler Corp. (water cooler), Model No. and Serial No. not indicated, 12 ounces of R-12;
- Room H102 (storage) – Camco (small bar fridge), Model No. TAC4SNYAN, Serial No. FR149563, manufactured 03/98, refrigerant not indicated; and,
- H109 (corridor) – Royal Vendors (soda pop vending machine), Model No. RVCC-804-9, Serial No. 200014AA011066, 5.25 ounces of R-134a.

26.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

26.2.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil, and/or waste oil storage areas were identified in this building during the current survey.

26.2.10 Chemical Storage

There were approximately 8 various sized containers of different cleaning compounds in Room E18 (storage). There was no MSDS information for the compounds in this storage room.

26.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

26.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

27. WW11 – ACCOMMODATION BUILDING (UNIT 3)

27.1 Building Description

This building was constructed in 1965 and contains two floors, and a partial basement. There is also a mechanical room on the roof level. This building is one of five used to house the inmates. The annotated floor plans (Figures WW11-B, WW11-1, and WW11-2) showing the approximate building layout, dimensions, sampling locations and areas of ACMs and lead-based paint are contained in Appendix 27. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

27.2 Survey Findings

On February 18, 2005, XCG conducted a DSHMS on Building WW11. The common areas (e.g. offices, T.V. room, etc.) were all inspected. However, only one cell was inspected and the remaining ones are understood to be similar. The CSC escort indicated to XCG that the cells are generally all the same. The results of the DSHMS are presented in the subsections of Section 27.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos testing are also included in Appendix 27. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 27).

27.2.1 Asbestos-Containing Materials (ACMs)

A total of five samples were collected from the building for bulk asbestos analysis using the PLM method and six floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 27.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plans in Appendix 27 show the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- The cream coloured vinyl floor tiles in the cells contain 10 to 20 % chrysotile and appear to be in good condition. The CSC escort indicated that all cells are generally the same. As such, XCG only inspected one cell and it is inferred that the asbestos content is the same in all cells. The total area of the asbestos-containing vinyl floor tiles for all cells on both floors is estimated to be approximately 400 m².

Table 27.1 Summary of Asbestos Survey, Building WW11

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibilty ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW11-101-FT1	101	Vinyl floor tile, white coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW11-101-CT1	101	Ceiling tile, homogeneous, white, soft, cementitious material	Friable	Fair	C (exposed)	None	ND	-
WW11-105-CT1	105	Ceiling stucco, homogeneous, white, soft, cementitious material	Non-friable	Good	C (exposed)	None	ND	-
WW11-G102-CT1	G102	Ceiling tile, homogeneous, beige, layered, compressed fibrous material	Friable	Good	C (exposed)	None	ND	-
WW11-G104-CT1	G104	Ceiling tile, homogeneous, beige, layered, compressed fibrous material	Friable	Good	C (exposed)	None	ND	-
WW11-G104-FT1	G104	Vinyl floor tile, grey with light beige flecks, 12"x12"	Non-friable	Good	A	None	ND	-
<i>Second Floor</i>								
WW11-B08-FT1	B08	Vinyl floor tile, cream coloured, 9"x9"	Non-friable	Good	A	7	(C) 10-20%	400 m ²
WW11-B18-FT1	B18	Vinyl floor tile, cream coloured, 9"x9"	Non-friable	Good	A	7	(C) 10-20%	24 m ²
WW11-D21-FT1	D21	Vinyl floor tile, cream coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW11-D21-FT2	D21	Vinyl floor tile, pinkish cream coloured, 9"x9"	Non-friable	Good	A	7	(C) 10-20%	95 m ²
WW11-H103-CT1	H103	Ceiling tile, homogeneous, beige, layered, compressed fibrous material	Friable	Good	C (exposed)	None	ND	-

Notes:

1 Friability is assessed as friable or non-friable

2 Condition is rated as good, fair or poor

3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details

4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.

5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained

ND None detected (<0.5%)

- In room B18 (Storage), approximately 4 m² of cream vinyl floor tiles in good condition were found to contain 10 to 20 % chrysotile. The CSC escort indicated that the storage rooms (i.e. A18, C18, D18, E18 and F18) are generally the same. As such, XCG only inspected one storage room, and it is inferred that the asbestos content in the same in all storage rooms. The total area of the asbestos containing vinyl floor tile for all storage rooms on both floors is estimated to be approximately 24 m².
- A pinkish cream coloured vinyl floor tile exists in the hallways of this unit. The tiles were found to contain 10 to 20% chrysotile, and appeared to be in good condition. Some white tile patchwork was observed in some of the hallways, but the majority of the tiles are this pinkish cream one. There is approximately 95 m² of this tile estimated to be present.

27.2.2 Lead-Containing Materials

Ten samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 27.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plans in Appendix 27 show the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that two samples contained lead concentrations above the lead-paint classification of 5,000 ppm. A white wall paint was observed in the following rooms: the ceiling of 104 (21 m²), the ceiling of 105 (23 m²), the ceiling and walls of 106 (45 m²), the second floor corridors (B range, D range and F range, walls and ceiling, 80 m² each), all the doors in H wing (9 doors at 6 m² each) and the walls of H103 (20 m²). The lead concentration in this paint was 5,055 ppm, slightly over the classification value of 5,000 ppm. The total amount of paint with this concentration was approximately 403 m² and it was in generally good condition.

A dark blue paint was also noted to contain 5,254 ppm of lead concentration. There was approximately 63 m² of the paint was found in G106 (Corridor) and it appeared to be in good condition.

The laboratory conducted duplicate analysis of the paint sample WW11-B01-TR2 for QA/QC purposes. The results of the original and duplicate samples varied by approximately 14%, which is considered reasonable. This provides support that the results are representative.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

Table 27.2 Summary of Lead Paint Survey, Building WW11

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>Basement Floor</i>							
WW11-B01-WP1	B01	Paint from the interior west wall	Cream	Good	1	<20	-
WW11-B01-TR1	B01	Paint from the door trim interior leading to the basement	Mocha	Good	1	45.9	-
WW11-B01-TR2	B01	Paint from the door trim exterior leading to the basement	Sky blue	Good	1	2,017	-
WW11-B01-TR2 Duplicate	B01	Paint from the door trim exterior leading to the basement	Sky blue	Good	1	2,294	-
<i>First Floor</i>							
WW11-WP1	106	Ceiling and wall paint from the room	White	Good	1	5,055	45 m²
-	104	Ceiling paint inferred to be the same as room 106	White	Good	1	*5,055	21 m²
-	105	Ceiling paint inferred to be the same as room 106	White	Good	1	*5,055	22 m²
-	B range	Ceiling and wall paint inferred to be the same as room 106	White	Good	1	*5,055	80 m²
-	D range	Ceiling and wall paint inferred to be the same as room 106	White	Good	1	*5,055	80 m²
-	F range	Ceiling and wall paint inferred to be the same as room 106	White	Good	1	*5,055	80 m²
-	H range doors	Door paint from all doors on this level, inferred to be the same as room 106	White	Good	1	*5,055	54 m²
-	H103	Wall paint inferred to be the same as room 106	White	Good	1	*5,055	20 m²
WW11-103-TR1	103	Paint from the door trim leading to the room	Grey	Good	1	43.9	-
WW11-G104-DP1	G104	Paint from the interior west wall	Mocha	Good	1	2,193	-

Table 27.2 Summary of Lead Paint Survey, Building WW11

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
WW11-G106-WP1	G106	Paint from the interior east wall	Dark blue	Good	1	5,254	63 m ²
<i>Second Floor</i>							
WW11-H103-WP1	H103	Paint from the interior east wall	Cream	Good	1	184	-
WW11-H105-WP1	H105	Paint from the interior south wall	Green	Good	1	<20	-
WW11-M01-TR1	M01	Paint from the door leading to the mechanical room	Red	Good	1	1,072	-

Notes:¹ Condition is rated as good, fair or poor with peeling and/or flaking² Layers of paint are noted visually and can only be observed if the layers are different colours**Bold** Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW11-B01-TR2 Duplicate is a laboratory duplicate of WW11-B01-TR2

* Inferred lead concentration based on same colour paint

27.2.3 Mercury

The only potential sources of mercury that were identified during the current survey were the fluorescent lamps and various thermostat switches throughout this building. Three thermostat switches were observed, two on the north walls of H107 (Case Prep. Office) and H109 (Corridor), and one on the east wall of H106 (Case Prep. Office). The fluorescent lamps are expected to contain small quantities of mercury vapour. No high intensity discharge mercury-vapour lamps were found in use at this building.

27.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

27.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

27.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 205 fluorescent light ballasts are located throughout the entire building. XCG could not open up most of the plate covers to record the ballast information because the ceilings were too high. One ballast located in Room 101 was accessed and the label information is summarized as follows:

- Room 101 (office) – Electronic Ballast Technology Inc., Class P, Catalogue No. SSB2-120-2/32IS LH, No PCBs.

No other potential sources of PCBs, such as transformers, were observed in this building.

27.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, three wall-mounted air conditioners, four domestic refrigerators, one water cooler, two chest freezers, one water fountain, one ice maker, and two soda pop vending machines were identified in this building. Most of this equipment was not listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives. The inventory lists additional air conditioning units on the roof and on the exterior of the building. The wall mounted air conditioners contain R-22 refrigerant. All refrigerators, one soda pop vending machine and the water cooler contain R-134a. The other pop machine and water fountain contains R-12. The ice maker contains R-404a. All these refrigerants are considered ODSs. Information regarding the refrigerant in the chest

freezers could not be found, but they potentially contain an ODS. The specification information on the equipment that contained them is summarized as follows:

- Room 101 (office) – Mitsubishi Electric Corporation (air conditioner), Model No. MS09EW, Serial No. 45002805 C, 25 pounds of R-22;
- Room 102 (coffee room) – Frigidaire (refrigerator), Model No. FRT18G5AW7, Serial No. LA23310203, 4.25 ounces of R-134a;
- Room 102 (coffee room) – Milano (water cooler), Model No. 405, Serial No. 48290250, 1.35 ounces of R-134a;
- Room 104 (T.V. room) – Frigidaire Home Products (refrigerator), Model No. FRT18DRHW0, Serial No. BA00322503, 5 ounces of R-134a;
- Room 104 (T.V. room) – Inglis, Model IKT141300 (refrigerator), Serial No. VSL3625316, 3.75 ounces of R-134a;
- Room 105 (T.V. room) – Hoshizaki Electric Co. Ltd. (ice maker), Model No. AM-150BAF, Serial No. P11191B, 9.5 ounces of R-404a;
- Room 105 (T.V. room) – Mitsubishi Electric Corporation (air conditioner), Model No. MS09EW, Serial No. 45003487 D, 25 pounds of R-22;
- Room 106 (control & core area) – Stuart (water fountain), Model No. and Serial No. are not listed, 0.24 kilograms of R-12;
- Room G102 (activities) – Kelvinator (refrigerator), Model No. KAR512-RW, Serial No. BP0000209 (note that numbers inferred as the label is partially damaged), 5 ounces of R-12;
- Room G104 (office) – Danby Products (air conditioner), Model No. SAC5254DE-1, Serial No. 0204030902154, 340 grams of R-22;
- Room H102 (storage) – Coin Acceptors Inc. (soda pop vending machine), Model No. CT48D04A105A, Serial No. C 4880068, 5.7 ounces of R-12; and,
- H109 (corridor) – The Vendo Co. (soda pop vending machine), Model No. and Serial No. not obtainable, 10.7 ounces of R-134a.

27.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

27.2.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil, and/or waste oil storage sites were identified in this building during the current survey.

27.2.10 Chemical Storage

One 4.5-litre can of paint was observed in Room B18 (storage) and it appeared to be no longer used. Five bottles of cleaning compounds were present in Room H103 during the site inspection. There was no MSDS information for these compounds located in the building.

27.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

27.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

28. WW12 – INMATE CANTEEN/HOBBY CRAFT BUILDING

28.1 Building Description

This building was constructed in 1965 and contains two floors. The annotated floor plans (Figures WW12-1 and WW12-2) showing the approximate building layout, dimensions, sampling locations and areas of ACMs and lead-based paint are contained in Appendix 28. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

28.2 Survey Findings

On February 22, 2005, XCG conducted a DSHMS on Building WW12. The results of the DSHMS are presented in the subsections of Section 28.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 28. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 28).

28.2.1 Asbestos-Containing Materials (ACMs)

A total of four samples were collected from the building for bulk asbestos analysis using the PLM method and six floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 28.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plans in Appendix 28 show the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- Approximately 10 to 15 4-inch diameter pipe elbows containing 50-75% chrysotile were identified in poor condition in Room 209 (Mechanical Room). Because of the criss-cross alignment of the pipe network and obstructions from the mechanical equipment, the exact number of elbows could not be counted properly;
- Approximately 10 to 15 6-inch diameter pipe elbows containing 25-50% chrysotile were identified in poor condition in Room 209 (Mechanical Room). Because of the criss-cross alignment of the pipe network and obstructions from the mechanical equipment, the exact number of elbows could not be counted properly;
- In room 113 (Office), approximately 25 m² of cream floor tiles containing between 10 and 20% chrysotile were identified in good condition. The tiles are 12"x12" in size;

Table 28.1 Summary of Asbestos Survey, Building WW12

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW12-113-CT1	113	Ceiling tile, homogeneous, beige, layered, compressed, fibrous material	Friable	Fair	C (exposed)	None	ND	-
WW12-113-FT1	113	Vinyl floor tile, cream coloured, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	25 m²
WW12-124-FT1*	124	Vinyl floor tile, cream coloured, 12"x12"	Non-friable	Good	A	-	-	-
WW12-125-FT1	125	Vinyl floor tile, pink coloured, 9"x9"	Non-friable	Good	A	7	(C) 10-20%	160 m²
WW12-131-FT2	131	Vinyl floor tile, salmon coloured, 9"x9"	Non-friable	Good	A	7	(C) 10-20%	20 m²
WW12-133-FT1	133	Vinyl floor tile, pink coloured, 9"x9"	Non-friable	Good	A	None	ND	-
<i>Second Floor</i>								
WW12-202-FT1*	202	Vinyl floor tile, grey coloured, 12"x12"	Non-friable	Good	A	-	-	-
WW12-209-PR1	209	Pipe run, homogeneous, brown, layered paper	Friable	Poor	B	None	ND	-
WW12-209-PE1	209	Pipe elbow, homogeneous, beige layered compressed, fibrous material	Friable	Poor	B	3	(C) 50-75%	10-15 4-inch elbows
WW12-209-PE2	209	Pipe elbow, homogeneous, beige layered compressed, fibrous material	Friable	Poor	B	3	(C) 25-50%	10-15 6-inch elbows

Notes:

- 1 Friability is assessed as friable or non-friable
- 2 Condition is rated as good, fair or poor
- 3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
- 4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
- 5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained

ND None detected (<0.5%)

* WW12-124-FT1 and WW12-202-FT1 were mistakenly analysed for lead instead of ACM.

- In room 125 (Auditorium), approximately 160 m² of pink floor tiles containing between 10 and 20% chrysotile were identified in good condition. The tiles are 9"x9" in size; and
- In room 131 (West Corridor), approximately 20 m² of salmon coloured floor tiles containing between 10 and 20% chrysotile were identified in good condition. The tiles are 9"x9" in size.

28.2.2 Lead-Containing Materials

Thirteen samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 28.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plans in Appendix 28 show the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that one sample contained lead concentrations above the lead-paint classification of 5,000 ppm. A green paint chip was collected from the door to Room 115 (Hobby Craft) and it contained a lead concentration of 18,087 ppm. Most doors in the building were coated with the same colour paint, and are inferred to be the same, for a total surface area of approximately 240 m². The paint was in fair condition.

The laboratory conducted a duplicate analysis of paint sample WW12-133-WP1 for QA/QC purposes. The results of the original and duplicate samples were the same (< 20 ppm). This provides support that the results are considered representative.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

28.2.3 Mercury

The only potential sources of mercury that were identified during the current survey were the fluorescent lamps and the one thermostat switch on the east wall of room 202. The fluorescent lamps are expected to contain small quantities of mercury vapour. No high intensity discharge mercury-vapour lamps were found in use at this building.

28.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

28.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 28.2 Summary of Lead Paint Survey, Building WW12

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW12-DT1	132	Paint from the northeast door entrance trim	Yellow	Good	1	97	-
WW12-115-DT1	115	Paint from the door to the room, also found on most doors of the building	Green	Fair	1	18,087	240 m²
WW12-117-WT1	117	Paint from the interior west wall, trim	Turquoise	Fair	1	*	-
WW12-124-DT1	124	Paint from the door trim	White	Fair	1	25.2	-
WW12-124-FT1	124	Floor tile, mistakenly analysed for lead, instead of ACM	Grey	Good	1	<20	-
WW12-125-FP1	125	Paint from the floor	Grey	Fair	1	<20	-
WW12-130-CP1	130	Paint from the overhang along the northern wall	Turquoise	Good	1	170.4	-
WW12-130-CP2	130	Paint from the ceiling of the room	Salmon	Good	1	*	-
WW12-133-WP1	133	Paint from the interior east wall	Cream	Good	1	<20	-
WW12-133-WP1 Duplicate	133	Paint from the interior east wall	Cream	Good	1	<20	-
WW12-133-WP2	133	Paint from the interior east wall	Dark green over cream	Fair	2	874	-
WW12-133-WP3	133	Paint from the interior east wall	Light green over cream	Faor	2	60.5	-
<i>Second Floor</i>							
WW12-202-FT1	202	Floor tile, mistakenly analysed for lead, instead of ACM	Grey	Good	1	<20	-
WW12-203-WP1	202	Paint from the interior south wall	Sky blue	Good	1	<20	-

Table 28.2 Summary of Lead Paint Survey, Building WW12

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
WW12-205-WP1	205	Paint from the interior north wall	Turquoise	Good	1	<20	-
WW12-209-WP1	209	Paint from the interior west wall	Cream	Fair	1	25.5	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW12-133-WP1 Duplicate is a laboratory duplicate of WW12-133-WP1

* WW12-117-WT1 and WW12-130-CP2 were mistakenly analysed for ACM instead of lead

28.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 76 fluorescent light ballasts are located throughout the first floor of the building, excluding rooms 105, 106, 107, 111, 120 and 121. The second floor contained approximately 20 ballasts. XCG could not open up most of the plate covers to record the ballast information because the ceilings were too high. The plate cover on a fluorescent ballast located in Room 128 was accessed and the label information is summarized as follows:

- Room 128 (office) – Electronic Ballast Technology Inc., Class P, Catalogue No. SSB2-120-2/32IS LH, No PCBs.

No other potential sources of PCBs, such as transformers, were observed in this building.

28.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, three wall-mounted air conditioners, two domestic refrigerators, two small bar refrigerators, two beverage coolers, five chest freezers, one water fountain, one ice maker, and one water cooler were identified in this building. Most of this equipment was not listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives. The inventory lists an additional air conditioning unit on the roof of the building. The water cooler contains R-134a refrigerant. One of the fridges contains R-12. The ice maker and both beverage coolers contain R-22. All of these refrigerants are considered ODSs. Information regarding the refrigerant in all other pieces of equipment could not be found, but they potentially contain an ODS. The specification information from the equipment that contained them is summarized as follows:

- Room 104A (Storage Room) – Crystal Springs (water cooler), Model No. 705, Serial No. 070500005 0024, 1.35 ounces of R-134a;
- Room 110 (office) – Friedrich Air Conditioning Co., Model No. MM09C1E, Serial No. LAMJ01495, type of refrigerant not stated;
- Room 113 (office) - Friedrich Air Conditioning Co., Model No. MM09C1E, Serial No. LAMJ01503, type of refrigerant not stated;
- Room 117 (hobby craft) – Camco (refrigerator), Model No. FYC11DRW-2 AO, Serial No. 119316, 6.7 ounces of R-12;
- Room 120 (storage room) – IMI Cornelius Inc. (ice maker), Model No. AC-300-SS-MM, Serial No. MC506, 16 ounces of R-22; and,
- Room 130 (canteen) – Coldmatic Refrigeration of Canada Ltd. (beverage cooler), Model No. C6S 40 W, Serial No. EGS-1543, 10 ounces of R-22.

28.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

28.2.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil, and/or waste oil storage areas were identified in this building during the current survey.

28.2.10 Chemical Storage

Ten 5-litre containers of cleaning compounds were stored in Room 111 (janitor's closet). Chemical storage was noted in room 117 (Hobby Craft), where cleaning compounds were stored (e.g. Windex). In Room 125 (auditorium), there were approximately 25 to 30 containers of various chemicals, such as motor oil, paint, wood stain, and urethane. There was no MSDS information or hazardous materials inventory in these rooms.

28.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

28.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

29. WW13 – CAFETERIA BUILDING

29.1 Building Description

This building was constructed in 1965 and contains one floor, a mezzanine level and a partial basement. The annotated floor plans (Figure WW13-B and WW13-1) showing the approximate building layout, dimensions, sampling locations and areas of ACMs and lead-based paint are contained in Appendix 29. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

29.2 Survey Findings

On February 22, 2005, XCG conducted a DSHMS on Building WW13. The results of the DSHMS are presented in the subsections of Section 29.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 29. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 29).

29.2.1 Asbestos-Containing Materials (ACMs)

One sample was collected from the building for bulk asbestos analysis using the PLM method and six floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 29.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plans in Appendix 29 show the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACM was identified:

- In Room 144 (Locker room), approximately 28 m² of cream coloured vinyl floor tiles, 12" x 12" in size, containing between 10 and 20% chrysotile were identified to be in good condition.

Table 29.1 Summary of Asbestos Survey, Building WW13

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW13-104-FT1	104	Vinyl floor tile, white coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW13-104-FT2	104	Vinyl floor tile, grey/white coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW13-107-FT1	107	Vinyl floor tile, cream coloured with grey flecks, 12"x12"	Non-friable	Good	A	None	ND	-
WW13-108-FT1	108	Vinyl floor tile, grey coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW13-119-CT1	119	Ceiling tile, homogeneous, beige, layered, compressed, fibrous material	Friable	Good	C (exposed)	None	ND	-
WW13-119-FT1	119	Vinyl floor tile, grey with white specks, 12"x12"	Non-friable	Good	A	None	ND	-
WW13-144-FT1	144	Vinyl floor tile, cream coloured with brown flecks, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	28 m²

Notes:

- 1 Friability is assessed as friable or non-friable
2 Condition is rated as good, fair or poor
3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
ND None detected (<0.5%)

29.2.2 Lead-Containing Materials

Ten samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 29.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 29 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that two samples contained lead concentrations above the lead-paint classification of 5,000 ppm. A sky blue paint sample was collected from Room 118 (Vestibule) and found to contain a lead concentration of 17,800 ppm. There was approximately 16 m² of the paint noted and was found to be in good condition. Additionally, this paint was also found in Room 101B (Corridor; 7 m²), Rooms 119 (Office; 10 m²), Room 109 (Storage; 2 m²), and Room 121 (Loading Area; 30 m²). Therefore, the total amount of sky blue paint found to contain lead is approximately 65 m².

A grey paint sample was collected from the floor of Room 141 (Mechanical Room) and was found to contain a lead concentration of 68,583 ppm. There was approximately 28 m² of the paint found to be in poor condition.

29.2.3 Mercury

The only potential sources of mercury that were identified during the current survey were the fluorescent lamps and the one thermostat switch on the south wall of room 142. The fluorescent lamps are expected to contain small quantities of mercury vapour. No high intensity discharge mercury-vapour lamps were found in use at this building.

29.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

29.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 29.2 Summary of Lead Paint Survey, Building WW13

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW13-104-WP1	104	Paint from the interior west wall	Turquoise	Fair	1	<2	-
WW13-104-CP1	104	Paint from the ceiling of the room	White	Fair	1	21.4	-
WW13-107-WP1	107	Paint from the exterior west wall	Green	Fair	1	<20	-
WW13-118-WP1	118	Paint from the interior east wall	Sky blue	Good	1	17,800	16
-	101B	Paint inferred to be the same as in room 118	Sky blue	Good	1	*17,800	7
-	109	Paint inferred to be the same as in room 118	Sky blue	Good	1	*17,800	2
-	119	Paint inferred to be the same as in room 118	Sky blue	Good	1	*17,800	10
-	121	Paint inferred to be the same as in room 118	Sky blue	Good	1	*17,800	30
WW13-130-WP1	130	Paint from the interior west wall	Green	Fair	1	36	-
WW13-131-WP1	131	Paint from the interior west wall	Brown with blue pattern	Good	1	<20	-
WW13-141-WP1	141	Paint from the interior north wall	Cream	Fair	1	<20	-
WW13-141-TR1	141	Paint from the trim on the interior west wall	Yellow	Fair	1	<20	-
WW13-141-TR2	141	Paint from the door trim	Blue	Fair	1	626	-
WW13-141-FP1	141	Paint from the floor of the room	Grey	Poor	1	68,583	28

Notes:¹ Condition is rated as good, fair or poor with peeling and/or flaking² Layers of paint are noted visually and can only be observed if the layers are different colours**Bold** Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

* lead paint concentration inferred from results of WW13-118-WP1, based on same colour

29.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 185 fluorescent light ballasts are located throughout the first floor of the building, 11 ballasts on the mezzanine level, and 8 ballasts in the partial basement. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

29.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, one wall-mounted air conditioner, two chest freezers, one water fountain, two water fountains, two vegetable coolers, four milk dispensers and nine walk-in coolers or freezers were identified in this building. Most of this equipment was not listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives. The water fountains and vegetable coolers all contain R-12 refrigerant, the wall mounted air conditioner contains R-22, while the walk-in coolers contain one or the other. Both these refrigerants are considered an ODS. Information regarding the refrigerant in all other pieces of equipment could not be found, but they potentially contain an ODS. The ODS inventory does not list the rooms where each piece of equipment is found. Also, information about each cooler could not be found at the time of the survey. As such, it was not possible to correlate the walk-in coolers found in by XCG to the ones listed on the inventory. The specification information from the equipment that contained them is summarized as follows:

- Room 119 (Office) – United Technologies Carrier (wall-mounted air conditioner), Model No. 40QNB024, Serial No. 1501Y51928, unknown amount of R-22;
- Room 104 (B Mess) – Keeprite (vegetable cooler), Model No. TW 126, Serial No. unknown, unknown amount of R-12;
- Room 104 (B Mess) – Temprite (water fountain), Model No. unknown, Serial No. 20308281, 8.5 ounces of R-12;
- Room 106 (A Mess) – Keeprite (vegetable cooler), Model No. TW 126, Serial No. unknown, unknown amount of R-12; and
- Room 114 (Officers' Mess) – Elkay Manufacturing Co. (water fountain), Model No. WHA-6, Serial No. 830591488, 8.0 ounces of R-12;

29.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

29.2.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil and/or waste oil storage areas were identified in this building during the current survey.

29.2.10 Chemical Storage

Chemical storage was observed in several rooms of this building. Cleaning compounds were observed in Room 103 (Washing Room) and Room 140 (Washroom). There was no MSDS information or inventory of hazardous chemicals located in this building.

29.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

29.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

30. WW14 – CATHOLIC CHAPEL

30.1 Building Description

This building was constructed in 1967 and contains two floors. The annotated floor plans (Figures WW14-1 and WW14-2) showing the approximate building layout, dimensions, sampling locations and areas of ACMs are contained in Appendix 30. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

30.2 Survey Findings

On February 10 and 11, 2005, XCG conducted a DSHMS on Building WW14. The results of the DSHMS are presented in the subsections of Section 30.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos testing are included in Appendix 30. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 30).

30.2.1 Asbestos-Containing Materials (ACMs)

One sample was collected from the building for bulk asbestos analysis using the PLM method and one floor tile was tested for asbestos using the TEM method. The results are summarized in Table 30.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plans in Appendix 30 show the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- In room 101, approximately 15 m² of dark grey 12" x 12" vinyl floor tiles containing between 10 to 20% of chrysotile were identified in good condition; and
- The same floor tiles in room 101 were identified in room 107. Therefore, it is inferred that the floor tiles in room 107 contain the same asbestos content. The area of vinyl floor tiles in this room is approximately 110 m² and they appear to be in good condition.

Table 30.1 Summary of Asbestos Survey, Building WW14

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW14-101-FT1	101	Vinyl floor tile, dark grey coloured, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	15 m ²
-	107	No samples were collected from this room, but the vinyl floor tiles are the same dark grey coloured, 12"x12" tiles present in room 101. Therefore, it is inferred that the asbestos content is the same as room 101.	Non-friable	Good	A	7	*(C) 10-20%	110 m ²
WW14-104-CT1	104	Ceiling tile, white coloured with small circles, 9"x9"	Friable	Fair	C (exposed)	None	ND	-

Notes:

1 Friability is assessed as friable or non-friable

2 Condition is rated as good, fair or poor

3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details

4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.

5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained

ND None detected (<0.5%)

* inferred asbestos content

30.2.2 Lead-Containing Materials

No paint samples were collected from the Building WW16 since the building was constructed of concrete blocks. The paint has soaked into the concrete and thus, a sample could not be retrieved without conducting destructive sampling. As requested in the TOR, destructive sampling was not conducted.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

30.2.3 Mercury

The only potential sources of mercury that were identified during the current survey were the fluorescent lamps in room 104 of this building which are expected to contain small quantities of mercury vapour. No high intensity mercury-vapour lamps or thermostats were found in use at this building.

30.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

30.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

30.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Only one fluorescent light ballast was found in this building, in Room 104.

No other potential sources of PCBs, such as transformers, were observed in this building.

30.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, one refrigerator and three wall-mounted air conditioning units were identified in room 106 of this building. In the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives, none of this equipment is listed on the inventory. The refrigerator contains R-12, while the air conditioning units contain R-22, both of which are considered ODSs. The specification information for this equipment is summarized as follows:

- Room 106 (storage) – Danby Products (air conditioner), Model No. DAC 6097, Serial No. 1197050021002973, 450 grams of R-22;

- Room 106 (storage) - GSW Appliances Ltd. (refrigerator), Model No. MRF 1543W-1, Serial No. 066827-8, 6 ounces of R-12.

30.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

30.2.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil, and/or waste oil storage areas were identified in this building during the current survey.

30.2.10 Chemical Storage

In Room 105 (janitor's room), there were 35 to 40 bottles of cleaning compounds of various sizes (spray bottles, 1-litre bottles, 5-litre jugs, and 20-litre pails). These cleaners included Hi-Genic (Dustbane), Vanguard (Dustbane), Nu-Life 2000 (Dustbane), Sceptre, Swish Sun Up (spray buff solution), and Speedy Strip (wax stripper). There was no MSDS information for these chemicals in the room.

In Room 106 (storage room), there were three 5-litre bottles of cleaning compounds, such as Hi-Genic (Dustbane, bowl and bathroom cleaner and sanitizer). There was no MSDS information for these chemicals in the room.

30.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

30.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

31. WW15 – S.I.S. BUILDING

31.1 Building Description

This building was constructed in 1965 and contains one floor. The annotated floor plan (Figure WW15-1) showing the approximate building layout, dimensions, sampling locations and areas of ACMs are contained in Appendix 31. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

31.2 Survey Findings

On February 11, 2005, XCG conducted a DSHMS on Building WW15. The results of the DSHMS are presented in the subsections of Section 31.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 31. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 31).

31.2.1 Asbestos-Containing Materials (ACMs)

A total of four samples were collected from the building for bulk asbestos analysis using the PLM method and seven floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 31.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plan in Appendix 31 shows the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- Approximately four 4-inch diameter pipe elbows containing 50 to 75% chrysotile were identified in fair condition in room 102 (Mechanical Room) of the building;
- Approximately four 3-inch diameter pipe elbows containing 50 to 75% chrysotile were identified in fair condition in room 102 (Mechanical Room) of the building;
- Approximately 40 metres of 4-inch diameter pipe run covered with mixed fibre and air cell insulation containing over 75% chrysotile was identified in fair condition in room 114 (Storage) of the building;
- In room 101 (Foyer), approximately 4 m² of cream coloured 9" x 9" vinyl floor tile containing between 10 and 20% chrysotile were identified; and
- In room 103 (Laundry Room), approximately 3 m² of olive coloured 12" x 12" vinyl floor tile containing between 10 and 20% chrysotile were identified.

Table 31.1 Summary of Asbestos Survey, Building WW15

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW15-101-FT1	101	Vinyl floor tile, cream coloured with brown flecks, 9"x9"	Non-friable	Good	A	None	ND	-
WW15-101-FT2	101	Vinyl floor tile, cream coloured with black flecks, 9"x9"	Non-friable	Good	A	7	(C) 10-20%	4 m²
WW15-101-FT3	101	Vinyl floor tile, beige coloured with grey flecks, 12"x12"	Non-friable	Good	A	None	ND	-
WW15-102-PE1	102	Pipe elbow, 4" diameter, homogeneous, grey, soft, cementitious material	Friable	Fair	B	6	(C) 50-75%	4 elbows
WW15-102-PE2	102	Pipe elbow, 3" diameter, homogeneous, grey, soft, cementitious material	Friable	Fair	B	6	(C) 50-75%	4 elbows
WW15-103-FT1	103	Vinyl floor tile, olive coloured with black flecks, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	3 m²
WW15-103-FT2	103	Vinyl floor tile, white coloured with grey flecks, 12"x12"	Non-friable	Good	A	None	ND	-
WW15-113-DU1	113	Duct, homogeneous, yellow, fibrous material	Non-friable	Good	B	None	ND	-
WW15-113-FT1	113	Vinyl floor tile, white coloured with grey flecks, 12"x12"	Non-friable	Good	A	None	ND	-
WW15-114-PR1	114	Pipe run, mixed fibre and air cell insulation, homogeneous, grey, soft	Friable	Good	B	7	(C) >75%	40 m
WW15-115-FT1	115	Vinyl floor tile, dark cream coloured, 12"x12"	Non-friable	Good	A	None	ND	-

Notes:

- 1 Friability is assessed as friable or non-friable
- 2 Condition is rated as good, fair or poor
- 3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
- 4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
- 5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
- ND None detected (<0.5%)

31.2.2 Lead-Containing Materials

Four samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 31.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 31 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that no sample contained lead concentrations above the lead-paint classification of 5,000 ppm. The laboratory conducted a duplicate analysis of paint sample WW15-113-STA1. The analytical results of the two samples were within 7% of each other, which is very close. This provides support that the results are representative.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

31.2.3 Mercury

The only potential sources of mercury that were identified during the current survey were the fluorescent lamps throughout this building which are expected to contain small quantities of mercury. No high intensity mercury-vapour lamps were found in use at this building.

31.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

31.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 31.2 Summary of Lead Paint Survey, Building WW15

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW15-101-WP1	101	Paint from the interior south wall	Turquoise	Good	1	929	-
WW15-111-WP1	111	Paint from the interior south wall	Yellow	Good	1	1,382	-
WW15-111-CP1	111	Paint from the ceiling	Cream	Good	1	53	-
WW15-113-STA1	113	Paint from the stair leading to the room	Grey	Good	1	838	-
WW15-113-STA1 Duplicate	113	Paint from the stair leading to the room	Grey	Good	1	779	-

Notes:¹ Condition is rated as good, fair or poor with peeling and/or flaking² Layers of paint are noted visually and can only be observed if the layers are different colours**Bold** Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW15-113-STA1 Duplicate is a laboratory duplicate of WW15-113-STA1

31.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 80 fluorescent light ballasts are located throughout the entire building, except in rooms 102 and 119. XCG could not open up most of the plate covers to record the ballast information because the ceilings were too high. One ballast cover from Room 114 (storage) was opened and the label clearly indicated that there is “No PCB”. The information on this ballast is summarized as follows:

- Electronic Ballast Technology Inc., Class P, Catalogue No. SSB2-120-2/32IS LH

No other potential sources of PCBs, such as transformers, were observed in this building.

31.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, two wall-mounted air conditioners, one domestic refrigerator, and one water fountain were identified in this building. In the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives, most of this equipment is not listed on the inventory, or listed differently. The refrigerator and water fountain contains R-12, which is considered an ODS. Information regarding the refrigerant in the air conditioners could not be found, but they may potentially contain ODSs. The specification information from the equipment that contained them is summarized as follows:

- Room 108 (lobby) - Westinghouse Canada Ltd. (refrigerator), Model No. RT140PL, Serial No. not legible, 4.75 ounces of R-12;
- Room 114 (storage) – Eaton Corporation, Model No. WTA12, Serial No. 720308268, 6.5 ounces of R-12.

31.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

31.2.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil, and/or waste oil storage areas were identified in this building during the current survey.

31.2.10 Chemical Storage

In Room 109 (storage), there were over 400 cans of Old Dutch cleaner. In addition, there were over 40 small containers of oven cleaner and sunlight soap, in addition to five boxes of sunlight laundry detergent.

In Room 110 (storage), there were six 20-litre containers of cleaning compounds, such as Speedy Strip (wax stripper). In addition, a 205-litre plastic drum contained Sudsy (liquid dishwashing detergent). Also, there were over eighty 4 to 5-litre containers of various cleaning compounds, such as Vanguard 256 (floor soap), Expo 2000 (glass cleaner), Nu-Life (soap scum remover)

There was no MSDS information for the chemicals in either one of these storage rooms.

31.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

31.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

32. WW16 – PROTESTANT CHAPEL

32.1 Building Description

This building was constructed in 1967 and contains two floors. The annotated floor plans (Figures WW16-1 and WW16-2) showing the approximate building layout, dimensions, sampling locations and areas of ACMs are contained in Appendix 32. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

32.2 Survey Findings

On February 10, 2005, XCG conducted a DSHMS on Building WW16. The results of the DSHMS are presented in the subsections of Section 32.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos testing are included in Appendix 32. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 32).

32.2.1 Asbestos-Containing Materials (ACMs)

A total of three samples were collected from the building for bulk asbestos analysis using the PLM method and two floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 32.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plans in Appendix 32 show the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- In Room 106 (Altar), approximately 62 m² of white vinyl floor tiles containing 10-20 % chrysotile were identified; and,
- There were approximately 10 to 20 4-inch diameter pipe elbows containing >75% chrysotile in the Second Floor in Room 201 (Mechanical Room). The pipe elbows were in good condition. Because of the criss-cross alignment of the pipe network and obstructions from the mechanical equipment, the exact number of elbows could not be counted properly.

Table 32.1 Summary of Asbestos Survey, Building WW16

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW16-105-FT1	105	Vinyl floor tile, dark grey, 12" x 12"	Non-friable	Good	A	None	ND	-
WW16-106-FT1	106	Vinyl floor tile, white, 12" x 12"	Non-friable	Good	A	7	(C) 10-20%	62
WW16-107-STU1	107	Ceiling stucco	Non-friable	Good	C (exposed)	None	ND	-
WW16-108-CT1	108	Ceiling tile	Friable	Good	C (exposed)	None	ND	-
<i>Second Floor</i>								
WW16-201-PE1	201	Pipe elbow insulation, wrapped, 4 inch diameter	Friable	Good	B	7	(C) >75%	10 – 20 elbows

Notes:

- 1 Friability is assessed as friable or non-friable
2 Condition is rated as good, fair or poor
3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
ND None detected (<0.5%)

32.2.2 Lead-Containing Materials

No paint samples were collected from the Building WW16 since the building was constructed of concrete blocks. The paint has soaked into the concrete and thus, a sample could not be retrieved without conducting destructive sampling. As requested in the TOR, destructive sampling was not conducted.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

32.2.3 Mercury

A mercury thermostat switch was observed on the first floor in Room 105. It was located on the south section of the east wall, on the opposite side of Room 107. Fluorescent lamps located throughout the first floor are expected to contain small quantities of mercury vapour.

Discussions with the maintenance staff revealed that there is no equipment containing significant quantities of mercury.

32.2.4 Silica

Silica may potentially be present in the concrete block walls and concrete floors in the building.

32.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

32.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 58 fluorescent light ballasts are located throughout the first floor of the building, in Rooms 101, 105, 106, 107, 108, and 109. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

32.2.7 Ozone-Depleting Substances (ODSs)

No ODSs were identified in this building during the current survey.

32.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

32.2.9 Fuel, Oil, and/or Waste Oil Storage

There was no fuel, oil, or waste oil stored in this building.

32.2.10 Chemical Storage

There were no chemical storage areas identified in this building during the current survey.

32.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

32.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building. There was water leaking from a pipe in Room 201 but there was no evidence of mould growth on the concrete floor. The water flowed towards the floor drain.

33. WW17 – EDUCATION AND LIBRARY BUILDING

33.1 Building Description

This building was constructed in 1965 with additions built in 1997, and contains one floor. The annotated floor plan (Figure WW17-1) showing the approximate building layout, dimensions, and sampling locations is contained in Appendix 33. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

33.2 Survey Findings

On February 23, 2005, XCG conducted a DSHMS on Building WW17. The results of the DSHMS are presented in the subsections of Section 33.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 33. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 33).

33.2.1 Asbestos-Containing Materials (ACMs)

One sample was collected from the building for bulk asbestos analysis using the PLM method and four floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 33.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plans in Appendix 33 show the approximate sampling locations and areal or linear extent of asbestos (if present).

The results indicated that none of the samples contain asbestos.

Table 33.1 Summary of Asbestos Survey, Building WW17

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW17-101-FT1	101	Vinyl floor tile, cream coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW17-102-FT1	102	Vinyl floor tile, blue coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW17-103-CT1	103	Ceiling tile, homogeneous, beige, layered, compressed, fibrous material	Non-friable	Good	C (exposed)	None	ND	-
WW17-103-FT1	103	Vinyl floor tile, grey coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW17-139-FT1	139	Vinyl floor tile, green coloured, 12"x12"	Non-friable	Good	A	None	ND	-

Notes:

1 Friability is assessed as friable or non-friable

2 Condition is rated as good, fair or poor

3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details

4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.

5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained

ND None detected (<0.5%)

33.2.2 Lead-Containing Materials

Seven samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 33.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 33 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that no samples contained lead concentrations above the lead-paint classification of 5,000 ppm.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

33.2.3 Mercury

The only potential sources of mercury that were identified during the current survey were the fluorescent lamps and the one thermostat switch on the west wall of room 122. The fluorescent lamps are expected to contain small quantities of mercury vapour. No high intensity discharge mercury-vapour lamps were found in use at this building.

33.2.4 Silica

Silica may potentially be present in the concrete block walls and concrete floors in the building.

33.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 33.2 Summary of Lead Paint Survey, Building WW17

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW17-101-WP1	101	Paint from the interior north wall	Turquoise	Good	1	4,432	-
WW17-103-WP1	103	Paint from the interior south wall	Greyish green	Good	1	1,704	-
WW17-112-WP1	112	Paint from the interior south wall	Sky blue	Good	1	110	-
WW17-115-WP1	115	Paint from the interior east wall	Dark blue	Good	1	1,322	-
WW17-115-WP2	115	Paint from the interior east wall	White	Good	1	38.1	-
WW17-120-FP1	120	Paint from the floor of the room	Grey	Good	1	54.1	-
WW17-120-WP1	120	Paint from the interior north wall	White	Good	1	47.0	-

Notes:¹ Condition is rated as good, fair or poor with peeling and/or flaking² Layers of paint are noted visually and can only be observed if the layers are different colours**Bold** Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

33.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 276 fluorescent light ballasts are located throughout the first floor of the building, except for rooms 101 and 142. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

33.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, three wall-mounted air conditioners, one domestic refrigerator, and one water fountain were identified in this building. None of this equipment is listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives. The inventory lists an additional air conditioning unit on the roof of the building. The refrigerator contains R-134a, which is considered to be an ODS. Information regarding the refrigerant in all other pieces of equipment could not be found, but they may potentially contain ODSs. The specification information on equipment that contained them is summarized as follows:

- Room 117 (Teacher's Office) – Frigidair (refrigerator), Model No. FRT15G4BW2, Serial No. BA34603827, 0.128 kilograms of R-134a; and
- Room 138 (Computer Classroom) – Goldstar (air conditioner), Model No. GA-0710BC, Serial No. unknown, unknown refrigerant.

33.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

33.2.9 Fuel, Oil, and/or Waste Oil Storage

There was no fuel, oil, or waste oil stored in this building.

33.2.10 Chemical Storage

There were no chemical storage areas identified in this building during the current survey.

33.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

33.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

34. WW18 – INDUSTRIAL SHOPS BUILDING

34.1 Building Description

This building was constructed in 1970 and contains two floors. The annotated floor plans (Figures WW18-1 and WW18-2) showing the approximate building layout, dimensions, sampling locations, and areas of asbestos and lead are contained in Appendix 34. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

34.2 Survey Findings

On February 11, 12 and 14, 2005, XCG conducted a DSHMS on Building WW18. The results of the DSHMS are presented in the subsections of Section 34.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 34. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 34).

34.2.1 Asbestos-Containing Materials (ACMs)

A total of eight samples were collected from the building for bulk asbestos analysis using the PLM method and fourteen floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 32.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plans in Appendix 34 show the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- In Room 115 (instructor's office), there was approximately 4 m² of grey coloured vinyl floor tiles, 12" x 12" in size, in good condition containing 10-20% chrysotile;
- In Room 119 (tool crib), there was approximately 12 m² of cream coloured vinyl floor tiles, 9" x 9" in size, in good condition containing 5-10% chrysotile;
- In Room 134 (Storage Room), approximately 12 m² of one type of vinyl floor tile (mocha coloured), and 12 m² of another type (cream coloured) was found containing between 10 and 20 % chrysotile. The tiles were in good condition. The same tiles and pattern were found in Room 135 (Storage Room), and are inferred to be the same as in Room 134. There were 8 m² of the tiles in this room in good condition. The total area of these two types of tiles is approximately 32 m²;
- In Room 139 (Office), approximately 56 m² of white coloured vinyl floor tile was found containing between 10 and 20% of chrysotile. The tiles were in good condition;

Table 34.1 Summary of Asbestos Survey, Building WW18

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW18-101-PR1	101	Pipe run, homogeneous, brown, soft, cementitious material	Friable	Poor	B	None	ND	-
*WW18-117-FT1	115	Vinyl floor tile, grey coloured with dark grey flecks, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	4 m²
*WW18-117-FT2	115	Vinyl floor tile, cream coloured, 12"x12"	Non-friable	Good	A	None	ND	-
*WW18-117-FT3	115	Vinyl floor tile, medium cream coloured, 12"x12"	Non-friable	Good	A	None	ND	-
**WW18-118-FT1	119	Vinyl floor tile, cream coloured with grey flecks, 9"x9"	Non-friable	Fair	A	7	(C) 5-10%	12 m²
WW18-134-FT1	134	Vinyl floor tile, mocha coloured, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	12 m²
WW18-134-FT2	134	Vinyl floor tile, cream coloured, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	12 m²
-	135	Vinyl floor tile, cream and mocha coloured chequered pattern, 12"x12", inferred to be the same as room 134	Non-friable	Good	A	7	(C) 10-20%	8 m ²
WW18-137-FT1	137	Vinyl floor tile, cream coloured with grey flecks, 12"x12"	Non-friable	Good	A	None	ND	-
WW18-139-FT1	139	Vinyl floor tile, white coloured with black flecks, 9"x9"	Non-friable	Good	A	7	(C) 10-20%	56 m²
WW18-141-FT1	141	Vinyl floor tile, cream coloured with mocha flecks, 12"x12"	Non-friable	Fair	A	None	ND	-
WW18-143-FT1	143	Vinyl floor tile, cream coloured with cream flecks, 12"x12"	Non-friable	Fair	A	None	ND	-

Table 34.1 Summary of Asbestos Survey, Building WW18

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibilty ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
WW18-145-FT1	145	Vinyl floor tile, dark cream coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW18-146-PR1	146	Pipe run, vertical homogeneous, grey, soft, cementitious material	Friable	Poor	A	3	(C) >75%	At least 6.5 m, 8-inch diameter
WW18-148-FT1	148	Vinyl floor tile, light cream coloured with dark cream flecks, 12"x12"	Non-friable	Good	A	None	ND	-
WW18-153-PE1	153	Pipe elbow, multilayered with a brown paper phase, and a black tar impregnated paper phase	Friable	Poor	B	None	ND	-
<i>Second Floor</i>								
WW18-201-PE1	201	Pipe elbow, homogeneous, grey, soft, cementitious material	Friable	Fair	B	6/5	(C) >75%	5-10 elbows, 6.5-inch diameter
WW18-201-PE2	201	Pipe elbow, homogeneous, grey, soft, cementitious material	Friable	Fair	B	6/5	(C) >75%	5-10 elbows 4-inch diameter
WW18-201-PE3	201	Pipe elbow, homogeneous, grey, soft, cementitious material	Friable	Fair	B	6/5	(C) >75%	5-10 elbows, 2-inch diameter
WW18-201-JE1	201	Jacket end, homogeneous, grey, soft, cementitious material	Friable	Fair	B	6/5	(C) >75%	4-inch diameter, 1.5 metre length
WW18-207-FT1	207	Vinyl floor tile, cream coloured with mocha flecks, 12"x12"	Non-friable	Fair	A	7	(C) 5-10%	30 m²
-	211	Vinyl floor tile, cream coloured with mocha flecks, 12"x12" – inferred to be	Non-friable	Fair	A	7	(C) 5-10%	18 m ²

Table 34.1 Summary of Asbestos Survey, Building WW18

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
		the same as those in 207						
-	212	Vinyl floor tile, cream coloured with mocha flecks, 12"x12" – inferred to be the same as those in 207	Non-friable	Fair	A	7	(C) 5-10%	24 m ²
-	213	Vinyl floor tile, cream coloured with mocha flecks, 12"x12" – inferred to be the same as those in 207	Non-friable	Fair	A	7	(C) 5-10%	24 m ²
-	214	Vinyl floor tile, cream coloured with mocha flecks, 12"x12" – inferred to be the same as those in 207	Non-friable	Fair	A	7	(C) 5-10%	27 m ²
WW18-208-FT1	208	Vinyl floor tile, light cream coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW18-210-CT1	210	Ceiling tile, white, 24"x24"	Friable	Good	C (exposed)	None	ND	-

Notes:

1 Friability is assessed as friable or non-friable

2 Condition is rated as good, fair or poor

3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details

4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.

5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained

ND None detected (<0.5%)

* Samples WW18-117-FT1, FT2, and FT3 were mislabelled. These samples were collected from Room 115

** Sample WW18-118-FT1 was mislabelled. This sample was collected from Room 119

- In Room 146 (Upholstery), an 8-inch diameter pipe run running vertically to the ceiling for a length of approximately 6.5 metres was found to contain over 75% chrysotile. This pipe run was in poor condition;
- Room 201 (Mechanical Room) contained several different diameter-sized pipes that contained asbestos. There were approximately five to ten 6.5-inch diameter pipe elbows, five to ten 4-inch diameter pipe elbows and five to ten 2-inch diameter pipe elbows, all containing over 75% chrysotile. In addition, there was a 4-inch diameter, 1.5 metre long jacket end, that contained the same amount of asbestos; and
- In Room 207 (Office), approximately 30 m² of cream coloured floor tiles was found to contain between 5 and 10% chrysotile. The tiles appeared to be in fair condition. The same tiles were inferred to exist in Room 211 (Office, 18 m²), Room 212 (Storage, 24 m²), Room 213 (Storage, 24 m²), and Room 214 (Office, 27 m²). Therefore, there is a total of approximately 123 m² of this type of tile on the second floor.

34.2.2 Lead-Containing Materials

Twenty-two samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 34.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plans in Appendix 34 show the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that six samples contained lead concentrations above the lead-paint classification of 5,000 ppm.

A cream coloured paint chip was collected from the upper part of the south wall in Room 106 (Paint Shop). This sample contained a lead concentration of 8,969 ppm, but was observed to be in good condition. This cream colour covers approximately 606 m² of the room. It is prevalent in the rest of the building. However, a cream coloured paint sample collected from Room 116 (Automotive Training) indicated the lead concentration was lower than 5,000 ppm, the regulatory limit (3,203 ppm). This is potentially a result of a red paint underlying the cream coloured paint in Room 106 (i.e. the red paint may have had a high lead concentration). Because of this variance in the same colour paint, the lead content cream coloured paint in all other rooms and the ceiling of the building cannot be inferred. If demolition or renovation activities are to take place, each room should be tested separately to confirm its lead concentration.

A grey coloured paint chip was also collected from Room 106, but from the lower half of the wall. It was found to contain 12,509 ppm of lead, but was in good condition. This grey paint covers approximately 225 m² of the room. It was also found in a number of different areas of the building. However, a sample taken from Room 116, also indicated a concentration less than 5,000 ppm. Again, this could potentially be the result of the underlying red paint in Room 106. As such, inferences

to the lead concentration of grey paint in other rooms cannot be made, and separate testing should be conducted prior to demolition or renovation activities of any room.

A light brown paint chip was collected from the lower half of Room 142 (Machine Training Shop) and was found to contain 11,399 ppm of lead. The paint was found to be in fair condition and covers approximately 182 m² of the room.

A green coloured paint chip was collected from the west wall of Room 144 (Shipping Crating) and was found to contain a lead concentration of 13,060 ppm. The paint is in good condition, and covers approximately 156 m² of the room. The same paint was found in Room 145, and it is inferred to contain the same lead concentration. The green paint in this room covers an area of approximately 21 m².

A mocha coloured paint chip was collected from the garage door of Room 146 (Upholstery) and found to contain a lead concentration of 9,923 ppm. The paint was observed to be in fair condition, covering an area of approximately 40 m².

A green paint sample was collected the wood wall boards in Room 154 (Tool Crib) and found to contain 25,963 ppm of lead. The paint was observed to be in good condition, covering an area of approximately 15 m².

The laboratory conducted a duplicate analysis of paint sample WW18-116-TR1 for QA/QC purposes. The results of the original and duplicate sample were within 11%, which is very close. This provides support that the results are representative.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

34.2.3 Mercury

The only potential sources of mercury that were identified during the current survey were the fluorescent lamps and the thermostat switches throughout the building. One switch was on the west wall of Room 106 (Paint Shop), one was on the south wall of Room 139 (Office), one was on the south wall of Room 204 (Classroom), and one was on the east wall of Room 202 (Office). The fluorescent lamps are expected to contain small quantities of mercury vapour. No high intensity discharge mercury-vapour lamps were found in use at this building.

34.2.4 Silica

Silica may potentially be present in the concrete block walls and concrete floors in the building.

34.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 34.2 Summary of Lead Paint Survey, Building WW18

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW18-101-WP1	101	Paint from the interior west wall, lower part	Pink	Good	1	4,191	-
WW18-101-WP2	101	Paint from the doors, rails, floor markings	Yellow over rusty red	Good	2	3,502	-
WW18-106-WP1	106	Paint from the interior south wall, upper part	Cream over rusty red	Good	2	8,969	606
WW18-106-WP2	106	Paint from the interior south wall, lower part	Grey over rusty red	Good	2	12,509	225
WW18-108-COL1	108	Paint from a vertical column	Beige over read	Good	2	451	-
WW18-108-P1	108	Paint from a pipe	Crimson red over rusty red	Good	2	1,817	-
WW18-111-WP1	111	Paint from the interior north wall	Sky blue	Good	1	311	-
WW18-116-WP1	116	Paint from the interior east wall, lower half	Grey	Good	1	3,937	-
WW18-116-WP2	116	Paint from the interior north wall, upper half	Cream	Good	1	3,203	-
WW18-116-TR1	116	Paint from the northern wall trim	Dark brown	Good	1	1,751	-
WW18-116-TR1 Duplicate	116	Paint from the northern wall trim	Dark brown	Good	1	1,946	-
WW18-126-WP1	126	Paint from the interior south wall	White	Poor	1	500.4	-
WW18-128-WP1	128	Paint from the interior north wall	Greyish white	Poor	1	378	-
WW18-134-WP1	134	Paint from the interior north wall	Cream	Good	1	475	-
WW18-135-WP1	135	Paint from the interior east wall	Peach brown	Good	1	2,446	-

Table 34.2 Summary of Lead Paint Survey, Building WW18

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
WW18-140-WP1	140	Paint from the interior west wall, lower half	Medium blue	Good	1	2,561	-
WW18-142-WP1	142	Paint from the interior west wall, lower half	Light brown	Fair	1	11,399	182
WW18-144-WP1	144	Paint from the interior west wall	Green	Good	1	13,060	156
-	145	Paint from the interior of the room inferred to be the same as room 144	Green	Good	1	13,060	21
WW18-146-DP1	146	Paint from the garage door	Mocha over cream	Fair	2	9,923	40
WW18-146-WP1	146	Paint from the interior north wall, lower half	Mocha	Good	1	403	-
WW18-153-WP1	153	Paint from the interior west wall	Mocha over cream	Good	2	4,218	-
WW18-154-TR1	154	Paint from the trim on wood	Green	Good	1	25,963	15
<i>Second Floor</i>							
WW18-208-WP1	208	Paint from the interior west wall	Turquoise	Good	1	113	-

Notes:¹ Condition is rated as good, fair or poor with peeling and/or flaking² Layers of paint are noted visually and can only be observed if the layers are different colours**Bold** Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW18-116-TR1 Duplicate is a laboratory duplicate of WW18-116-TR1

34.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 396 fluorescent light ballasts are located throughout the first floor of the building, except for rooms 110, 122 and 128. There are approximately 84 ballasts located on the second floor. XCG could not open up most of the plate covers to record the ballast information because the ceilings were too high. One ballast located in Room 214 was accessed and the label information is summarized as follows:

- Room 214 (Office) – Electronic Ballast Technology, Inc., Class P, Catalogue No. SSB2-120-2/321S LH, No PCBs.

No other potential sources of PCBs, such as transformers, were observed in this building.

34.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, nine wall-mounted air conditioners, one domestic refrigerator, one water cooler, one small bar fridge and eight water fountains were identified in this building. Some of this equipment is not listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives. The inventory lists an additional air conditioning unit on the roof of the building. The water fountains contain R-12 refrigerant, while most air conditioners contain R-22, both of which are considered ODSs. Information regarding the refrigerant in all other pieces of equipment could not be found, but they may potentially contain ODSs. The specification information on equipment that contained them are summarized as follows:

- Room 101 (Industrial Cabinet Shop) – Temprite (water fountain), Model No. WTA-12, Serial No. unknown, 0.234 kilograms of R-12;
- Room 106 (Paint Shop) – Temprite (water fountain), Model No. WTA-12, Serial No. unknown, 0.240 kilograms of R-12;
- Room 116 (Automotive Training) – Temprite (water fountain), Model No. WTA-12, Serial No. unknown, 0.240 kilograms of R-12;
- Room 126 (Barber Shop) – Temprite (water fountain), Model No. WTA-12, Serial No. unknown, 0.240 kilograms of R-12;
- Room 142 (Machine Training Shop) – Temprite (water fountain), Model No. WTA-12, Serial No. unknown, 0.240 kilograms of R-12;
- Room 144 (Shipping Crating) – Temprite (water fountain), Model No. WTA-12, Serial No. unknown, 0.234 kilograms of R-12;
- Room 145 (Instructor's Office) – Sears Roebuck and Co. (air conditioner), Model No. 461-35371-3, Serial No. unknown, 0.560 kilograms of R-22;
- Room 149 (Lavatory) – Temprite (water fountain), Model No. WTA-12, Serial No. unknown, 0.240 kilograms of R-12;

- Room 153 (Industrial Welding Shop) – Temprite (water fountain), Model No. WTA-12, Serial No. unknown, 0.240 kilograms of R-12;
- Room 206 (Storage) – Heat Controller Inc. (air conditioner), Model No. PAC-121, Serial No. unknown, 22 ounces of R-22;
- Room 211 (Office) – Heat Controller Inc. (air conditioner), Model No. PAC-121, Serial No. unknown, 22 ounces of R-22;
- Room 213 (Storage) – Heat Controller Inc. (air conditioner), Model No. PAC-121, Serial No. unknown, 22 ounces of R-22; and
- Room 214 (Office) – Heat Controller Inc. (air conditioner), Model No. PAC-121, Serial No. unknown, 22 ounces of R-22;

34.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

34.2.9 Fuel, Oil, and/or Waste Oil Storage

Room 110 (Storage) contained varying amounts of oils and greases. Two jerry cans were found in Room 119 (Tool Crib). They did not have secondary containment. There was no MSDS information in the storage areas, nor was there a hazardous materials inventory posted.

34.2.10 Chemical Storage

A phosphate dipping tank was observed in Room 108 (Cleaning Tank Area) of the building. For more information regarding issues surrounding this tank, refer to the XCG audit report. Four 205-litre drums and four 25-litre pails of unknown substances were also found in this area. They were not properly labelled. There were paints in the spray booth, Room 109. A chemical storage room in Room 110 (Storage) contained varying amounts of solvents and paints. Barber supplies such as aftershave and hydrogen peroxide were found in Room 135 (Storage Room). Cleaning compounds were found stored in Room 152 (Washroom/Shower). None of these storage areas contained MSDS information regarding the chemicals that were stored there, nor were there any hazardous materials inventories posted.

34.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

34.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

35. WW19 – MAINTENANCE GARAGE

35.1 Building Description

This building was constructed in 1965 and contains two floors. The annotated floor plans (Figures WW19-1 and WW19-2) showing the approximate building layout, dimensions, sampling locations and areas of ACMs are contained in Appendix 35. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

35.2 Survey Findings

On February 10, 2005, XCG conducted a DSHMS on Building WW19. One room was inspected on February 18, 2005, as it was not accessible during the initial inspection. The results of the DSHMS are presented in the subsections of Section 35.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 35. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 35).

35.2.1 Asbestos-Containing Materials (ACMs)

A total of eight samples were collected from the building for bulk asbestos analysis using the PLM method and four floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 35.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plans in Appendix 35 show the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- In Room 201 (Drafting Room), approximately 26 m² of white vinyl floor tiles containing between 10 and 20% chrysotile were identified in good condition;
- In Room 202 (Office), approximately 9 m² of the same white vinyl floor tile identified in Room 201 was found. These tiles are inferred to contain between 10 and 20% chrysotile, based on similar appearance;
- There were six 4-inch diameter pipe elbows containing 50-75% chrysotile found in Room 133 (Tool Crib). The pipe elbows are in good condition; and,
- There were approximately 10 to 20 different sized diameter pipe elbows containing 25-50% chrysotile in the second floor in Room 204 (Gallery). The pipe elbows were in good condition.

Table 35.1 Summary of Asbestos Survey, Building WW19

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW19-102-CT1	102	Ceiling tile, homogeneous, beige, compressed fibrous material	Friable	Good	C (exposed)	None	ND	-
WW19-103-CT1	103	Ceiling tile, homogeneous, beige, compressed fibrous material	Friable	Good	C (exposed)	None	ND	-
WW19-104-FT1	104	Vinyl floor tile, cream coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW19-125-FT1	125	Vinyl floor tile, cream coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW19-133-FT1	133	Vinyl floor tile, cream coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW19-133-PR1	133	Pipe run, homogeneous, grey, soft, cementitious material	Friable	Good	A	None	ND	-
WW19-133-PE1	133	Pipe elbow, 4" diameter, homogeneous, grey, soft, cementitious material	Friable	Good	A	5/7	(C) 50-75%	6 elbows
<i>Second Floor</i>								
WW19-001-FT1	201	Vinyl floor tile, white coloured with dark flecks, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	26 m²
	202	Vinyl floor tile, white coloured with dark flecks, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	9 m²
WW19-203-CT1	203	Ceiling tile, homogeneous, beige, compressed fibrous material	Non-friable	Good	C (exposed)	None	ND	-
WW19-203-PE1	203	Pipe elbow, homogeneous, grey, hard, cementitious material	Non-friable	Good	A	None	ND	-
WW19-204-PE1	204	Pipe elbow, homogeneous, grey, soft, cementitious material	Non-friable	Good	A	5/7	(C) 25-50%	5 – 10 elbows
WW19-204-PE2	204	Pipe elbow, homogeneous, grey, soft, cementitious material	Non-friable	Good	A	5/7	(C) 25-50%	5 – 10 elbows

Notes:

1 Friability is assessed as friable or non-friable

2 Condition is rated as good, fair or poor

3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details

4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.

5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained

ND None detected (<0.5%)

35.2.2 Lead-Containing Materials

Fifteen samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 35.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plans in Appendix 35 show the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that the concentrations of lead in all fifteen samples were below the lead-paint classification of 5,000 ppm. The laboratory conducted duplicate analysis of two paint samples (WW19-110-PP1 and WW19-131-WP1). The difference between the results of the original and duplicate samples ranged between 13 and 23 %, which is within reasonable limits. This provides support that the results are representative.

In addition to the paint, XCG observed approximately 3 automobile batteries in Room 126 (Garage). These batteries may potentially contain lead. The site contact indicated that the batteries are no longer in use and are awaiting disposal.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

35.2.3 Mercury

A total of 8 mercury thermostat switches were observed on the first floor. The locations are summarized as follows: Room 102 (west wall); Room 103 (two on east wall); Room 105 (west wall); Room 106 (west wall); Room 107 (south wall); Room 123 (south wall); and, Room 134 (south wall). Fluorescent lamps located throughout the first floor are expected to contain small quantities of mercury vapour. Six high intensity discharge (HID) lamps present in Room 126 also potentially contain small quantities of mercury vapour.

Discussions with the maintenance staff revealed that there is no equipment containing significant quantities of mercury.

35.2.4 Silica

Silica may potentially be present in the concrete block walls and concrete floors in the building.

35.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 35.2 Summary of Lead Paint Survey, Building WW19

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW19-101-WP1	101	Paint from the interior west wall	Cream	Poor (peeling)	1	536	-
WW19-102-WP1	102	Paint from the interior west wall	Cream	Good	1	<20	-
WW19-103-WP1	103	Paint from the interior east wall	Cream	Good	1	<20	-
WW19-108-DP1	108	Paint from the interior west wall	Grey	Good	1	65.5	-
WW19-110-PP1	110	Paint from a pipe running along the northern wall	Red	Good	1	937	-
WW19-110-PP1 Duplicate	110	Paint from a pipe running along the northern wall	Red	Good	1	819	-
WW19-110-FP1	110	Paint from the floor in the room	Grey	Fair	1	2,464	-
WW19-111-WP1	111	Paint from the interior east wall	Turquoise	Good	1	1,014	-
WW19-113-WP1	113	Paint from the interior west wall	Light green	Good	1	60.5	-
WW19-126-DP1	126	Paint from the door leading to the room	Yellow	Poor	1	1,850	-
WW19-131-WP1	131	Paint from the interior west wall	White	Poor	1	944	-
WW19-131-WP1 Duplicate	131	Paint from the interior west wall	White	Poor	1	728	-
WW19-131-WP2	131	Paint from the interior west wall	White	Poor	1	1,375	-
WW19-133-WP1	133	Paint from the interior north wall	Lime green	Good	1	840	-
<i>Second Floor</i>							
WW19-201-WP1	201	Paint from the interior west wall	Cream	Good	1	<20	-
WW19-202-WP1	202	Paint from the interior north wall	Light blue	Good	1	<20	-
WW19-204-WP1	204	Paint from the interior west wall	Cream	Good	1	1,048	-

Notes:¹ Condition is rated as good, fair or poor with peeling and/or flaking² Layers of paint are noted visually and can only be observed if the layers are different colours**Bold** Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW19-131-WP1 Duplicate is a laboratory duplicate of WW19-131-WP1

WW19-131-WP1 Duplicate is a laboratory duplicate of WW19-131-WP1

35.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 92 fluorescent light ballasts are located throughout the first floor of the building, and 17 fluorescent light ballasts are located throughout the second floor of the building. XCG could not open up a majority of the plate covers to record the ballast information because the ceilings were too high. However, the few that were accessed contained a label that indicated the units did not contain PCBs. The information on these units is summarized as follows:

- Room 101 (sub station) – Electronic Ballast Technology Inc., Class P, Catalogue No. SSB2-120-2/32IS LH;
- Room 102 (foyer) – Quicktronic, Class P, QT-2 x 32/120 IS; and
- Room 131 (Diesel Generator Room) - Electronic Ballast Technology Inc., Class P, Catalogue No. SSB2-120-2/32IS LH, No PCBs.

No other potential sources of PCBs, such as transformers, were observed in this building.

35.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, four wall-mounted air conditioners, two domestic refrigerators, one small bar fridge, one water cooler, two ice makers, and three water fountain were identified in this building. In the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives, most of this equipment is not listed on the inventory. All but one of the air conditioning units contains R-22. One of the water fountains and one of the refrigerators contain R-12 and the water cooler and ice makers contain R-134a. All of these refrigerants are considered ODSs. Information regarding the refrigerant in all other pieces of equipment could not be found, but they may potentially contain ODSs. The specification information on equipment that contained them is summarized as follows:

- Room 103 (office) – General Electric Company (small bar fridge), Model No. GMR04BANACW-1, Serial No. GF 690383, 1.8 ounces of R-134a;
- Room 116 (lunch room) – Water cooler, Model No. 405, Serial No. 48290247, 1.35 ounces of R-134a;
- Room 116 (lunch room) – Inglis (refrigerator), Model No. INA-66280, Serial No. 6DJ05223, 7.5 ounces of R-12;
- Room 116 (lunch room) – Carrier Corp. (air conditioner), Model No. 38TG018300, Serial No. 3189E09715, 2.94 pounds of R-22;
- Room 116 (lunch room) – Whirlpool (ice maker), Model No. and Serial No. not legible, 6.5 ounces of R-134a;

- Room 123 (orn. Grounds) – Elkay Manufacturing Co. (water fountain), Model No. WHA 6, Serial No. 800253187, 8 ounces of R-12; and,
- Room 201 (drafting room) – Danby Products (air conditioner), Model No. SAC5254DE-1, Serial No. 0204030902020, 340 grams of R-22.

35.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

35.2.9 Fuel, Oil, and/or Waste Oil Storage

There was one bottle of motor oil observed in Room 122 (office). It was stored with the cleaning compounds in that room. Various sized containers of petroleum products, such as oil, were present throughout Room 126 (garage). In Room 130 (storage), there were a few small containers, three 205-litre drums, and seven 23-litre containers of petroleum products, such as oil and hydraulic fluid. In Room 131 (diesel generator room), a 25-litre pail of waste oil (half full) with no lid, and four other 23-litre pails of petroleum product, were observed. Some staining was observed on the concrete floor beneath these containers. However, it is not expected to have impacted the subsurface as the concrete was in good condition. Room 205 (storage) stored a number of containers of petroleum products.

An aboveground storage tank was noted on the exterior southwest side of the building. Tank No. 460-06 is 7,700 litres in size and contains diesel and supplies fuel to the generator in the building. The tank was manufactured and installed in the year 2004. It appears to be in good condition. Further information on the tank can be found in XCG's Audit Report.

An additional 4,500-litre waste oil tank was listed in the tank inventory provided by the site contact to exist southeast of the building. The site contact indicated the tank is approximately 12 years old, and has no history of leaking.

35.2.10 Chemical Storage

There were five 20-litre pails of cleaning compounds (e.g. Speedy Strip) stored in Room 102 (foyer). In 107 (stair), there were five spray bottles, seven 5-litre containers, and one 20-litre pail of cleaning solvents stored under the stairs, which is enclosed with a door to act as a storage area. Example compounds included Swish Powershine (furniture polish) and Speedy Strip. There were five bottles of various cleaning compounds in Room 110 (general labour). In addition, this room contained an eye wash station with two 1-litre chemical bottles. In Room 112 (washroom), there were three 5-litre bottles of cleaning compounds (e.g. Lime-A-Way and Dustbane-Ultra Orange). In Room 122 (office), there were 10 to 15 small bottles of cleaning compounds (Master Plumber, deliming solution).

A re-circulating solvent bath, provided by Cansol Services Inc., was observed in Room 126 (garage). No spills were observed on the concrete floor beneath the bath. In Room 132 (tool crib), there were six various sized bottles of different cleaning compounds. On the exterior southwest side of the building, XCG observed two 205-litre drums labelled "Toxic Waste" and "Hazardous Waste". In this same area, there was a yellow flammable storage cabinet. XCG could not inspect the inside of this

cabinet, as it was locked and the CSC escort did not have a key. There was also one 205-litre unidentified drum and five 23-litre pails containing unknown contents.

There was no MSDS information in any of the rooms containing chemical storage.

35.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

35.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

36. WW21 – FIELD HOUSE

36.1 Building Description

This building was constructed in 1968 and contains one floor. The annotated floor plan (Figure WW21-1) showing the approximate building layout, dimensions, and sampling locations is contained in Appendix 36. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

36.2 Survey Findings

On March 1, 2005, XCG conducted a DSHMS on Building WW21. The results of the DSHMS are presented in the subsections of Section 36.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 36. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 36).

No access was granted to Rooms 104, 105 and 106 since the site escort did not have keys for these rooms.

36.2.1 Asbestos-Containing Materials (ACMs)

Three floor tile samples were tested for asbestos using the TEM method. The result is summarized in Table 36.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plan in Appendix 36 shows the approximate sampling locations and areal or linear extent of asbestos (if present).

No ACMs were identified in this building during the current survey.

Table 36.1 Summary of Asbestos Survey, Building WW21

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibilty ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW21-102-FT1	102	Vinyl floor tile, creamy white coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW21-103-FT1	103	Vinyl floor tile, white coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW21-108-FT1	108	Vinyl floor tile, cream coloured, 12"x12"	Non-friable	Good	A	None	ND	-

Notes:

- 1 Friability is assessed as friable or non-friable
2 Condition is rated as good, fair or poor
3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
ND None detected (<0.5%)

36.2.2 Lead-Containing Materials

Six samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 36.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 36 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that the concentrations of lead in all six samples were below the lead-paint classification of 5,000 ppm. The laboratory conducted a duplicate analysis of paint sample WW21-110-FP1. The results of the original and duplicate samples were within 5%, which is very close. This provides support that the results are representative.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

36.2.3 Mercury

The only potential sources of mercury that were identified during the DSHMS were the fluorescent lamps throughout the building and one thermostat switch on the north wall of Room 101. The lamps are expected to contain small quantities of mercury vapour. No high intensity discharge mercury-vapour lamps were found in use at this building.

36.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

36.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 36.2 Summary of Lead Paint Survey, Building WW21

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW21-TR1	101	Paint from the exterior doors to the building	Blue	Fair	1	171	-
WW21-103-WP1	103	Paint from the interior west wall	Purple	Good	1	<20	-
WW21-108-WP1	108	Paint from the interior east wall	Blue	Fair	1	<20	-
WW21-108-WP2	108	Paint from the interior east wall	White	Fair	1	<20	-
WW21-110-FP1	110	Paint from the floor of the room	Grey	Good	1	159	-
WW21-110-FP1 duplicate	110	Paint from the floor of the room	Grey	Good	1	151	-
WW21-110-WP1	110	Paint from the interior west wall	Sky blue	Good	1	1,839	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW21-110-FP1 Duplicate is a laboratory duplicate of WW21-110-FP1

36.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 8 fluorescent light ballasts are located throughout the building, except in Rooms 103, 107 and 110. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

36.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, one wall-mounted air conditioner unit was identified in this building. This piece of equipment was not listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives. Information on the refrigerant in this unit could not be found, but it potentially contains an ODS.

36.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

36.2.9 Fuel, Oil, and/or Waste Oil Storage

There was no fuel, oil, or waste oil stored in this building.

36.2.10 Chemical Storage

No chemical storage areas were identified in this building during the current survey.

36.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

36.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

37. WW22 – WORKS EQUIPMENT STORAGE BUILDING

37.1 Building Description

This building was constructed in 1965 and contains one floor. The annotated floor plan (Figure WW22-1) showing the approximate building layout, dimensions, sampling locations and areas of ACM is contained in Appendix 37. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

37.2 Survey Findings

On February 10, 2005, XCG conducted a DSHMS on Building WW22. The results of the DSHMS are presented in the subsections of Section 37.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 37. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 37).

37.2.1 Asbestos-Containing Materials (ACMs)

One floor tile sample was tested for asbestos using the TEM method. The result is summarized in Table 37.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plan in Appendix 37 shows the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- In Room 105 (Office), approximately 7.6 m² of white vinyl floor tiles containing 10-20% chrysotile were identified. The tiles were in good condition.

Table 37.1 Summary of Asbestos Survey, Building WW22

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibilty ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW22-105-FT1	105	Vinyl floor tile, white coloured, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	7.5 m ²

Notes:

- 1 Friability is assessed as friable or non-friable
2 Condition is rated as good, fair or poor
3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
ND None detected (<0.5%)

37.2.2 Lead-Containing Materials

Five samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 37.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 37 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that the concentrations of lead in all five samples were below the lead-paint classification of 5,000 ppm. The laboratory conducted a duplicate analysis of paint sample WW22-104-FP1. The analytical results of the original and duplicate sample differed by only 3%. This provides support that the results are representative.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

37.2.3 Mercury

The only potential sources of mercury that were identified during the DSHMS were the fluorescent lamps throughout the building which are expected to contain small quantities of mercury vapour. No high intensity mercury-vapour lamps were found in use at this building.

37.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

37.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 37.2 Summary of Lead Paint Survey, Building WW22

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW22-103-WP1	103	Wall paint from the interior west wall	Cream	Fair	1	1,028	-
WW22-103-DR1	103	Door paint from a paint storage cabinet	Yellow	Fair	1	494	-
WW22-104-WP1	104	Wall paint from the interior north wall	Turquoise	Good	1	1,441	-
WW22-104-DR1	104	Door paint from the main entrance	Dark blue	Good	1	423	-
WW22-104-FP1	104	Paint from the floor of the room	Grey	Poor	1	1,508	-
WW22-104-FP1 duplicate	104	Paint from the floor of the room	Grey	Poor	1	1,561	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW22-104-FP1 Duplicate is a laboratory duplicate of WW22-104-FP1

37.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 33 fluorescent light ballasts are located throughout the building. Thirteen of them are operational, while the rest were being stored there. XCG could not open up any of the operational plate covers to record the ballast information because the ceilings were too high. However, the ones on the floor were accessed, and all contained a label indicating they did not contain PCBs, except for one. Information on the inspected ballasts is summarized as follows:

- Stanpro Gold Label Ballast, Class P, Catalogue No. 8G1141W, No PCBs;
- Philips, RS-2S110-TPC, Non-PCBs;
- General Electric Gold Label, Catalogue No. 17A24OE. The Environment Canada document entitled “Environmental Protection Series, Identification of Lamp Ballasts Containing PCBs,” dated August 1991, states that Canadian General Electric ballasts with a catalogue number ending with an “E” does not contain PCBs.

No other potential sources of PCBs, such as transformers, were observed in this building.

37.2.7 Ozone-Depleting Substances (ODSs)

No equipment potentially contained ODSs was identified in this building during the current survey.

37.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

37.2.9 Fuel, Oil, and/or Waste Oil Storage

In Room 103 (storage bay), there were two 205-litre drums containing Naptha petroleum. No spillage or stains were observed on the concrete floor around the Naptha drums.

37.2.10 Chemical Storage

In Room 103 (storage bay), there were approximately 15 to 20 3.7-litre cans of paint. There was also a re-circulating solvent bath provided by Cansol Services Inc. Room 104 (work shop) contained three 55-pound containers of a chemical identified as CSW 311. On the southwest exterior side of the building, there were over 50 3.7-litre cans of paint, which appeared to be empty.

37.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

37.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

38. WW23 – SPORTS PAVILION

38.1 Building Description

This building was constructed in 1969 and contains an outdoor area and two wooden sheds. The annotated floor plan (Figure WW23-1) showing the approximate building layout, dimensions and sampling locations is contained in Appendix 38. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

38.2 Survey Findings

On March 1 2005, XCG conducted a DSHMS on Building WW23. The results of the DSHMS are presented in the subsections of Section 38.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificate of analysis for lead paint testing is included in Appendix 38. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 38).

38.2.1 Asbestos-Containing Materials (ACMs)

No samples were taken as no potential ACMs were identified.

38.2.2 Lead-Containing Materials

Three samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 38.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 38 shows the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that the concentrations of lead in all three samples were below the lead-paint classification of 5,000 ppm. The laboratory conducted a duplicate analysis of paint sample WW23-TR3. The results of both the original and duplicate were less than the detection limit of 20 ppm.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

38.2.3 Mercury

There were no potential sources of mercury identified in this building during the current survey.

Table 38.1 Summary of Lead Paint Survey, Building WW23

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW23-TR1	Exterior	Paint from the door trim of the northern shed	Red	Good	1	<20	-
WW23-TR2	Exterior	Wall paint from the northern shed	White	Good	1	<20	-
WW23-TR3	Exterior	Paint from the roof trim	Sky blue	Good	1	<20	-
WW23-TR3 Duplicate	Exterior	Paint from the roof trim	Sky blue	Good	1	<20	-

Notes:¹ Condition is rated as good, fair or poor with peeling and/or flaking² Layers of paint are noted visually and can only be observed if the layers are different colours**Bold** Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW23-TR3 Duplicate is a laboratory duplicate of WW23-TR3

38.2.4 Silica

Silica-containing concrete and mortar were observed throughout the structure during the current survey.

38.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

38.2.6 Polychlorinated Biphenyls (PCBs)

There were no potential sources of PCBs identified in this building during the current survey.

38.2.7 Ozone-Depleting Substances (ODSs)

There was no equipment potentially contains ODSs identified in this building during the current survey.

38.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

38.2.9 Fuel, Oil, and/or Waste Oil Storage

There was no fuel, oil, or waste oil stored in this building.

38.2.10 Chemical Storage

There were no chemical storage areas identified in this building during the current survey.

38.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

38.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

39. WW24 – MAINTENANCE GARAGE ANNEX

39.1 Building Description

This building was constructed in 1978 and contains one floor. The annotated floor plan (Figure WW24-1) showing the approximate building layout, dimensions, sampling locations and areas of ACM is contained in Appendix 39. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

39.2 Survey Findings

On February 10, 2005, XCG conducted a DSHMS on Building WW24. The results of the DSHMS are presented in the subsections of Section 39.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificate of analysis for ACM testing is included in Appendix 39. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 39).

39.2.1 Asbestos-Containing Materials (ACMs)

Two samples were collected from the building for bulk asbestos analysis using the PLM method and four floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 39.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plan in Appendix 39 shows the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- In Room 101 (Office), approximately 4 m² of red vinyl floor tiles containing between 10 and 20% chrysotile were identified in good condition; and
- In Room 101 (Office), approximately 4 m² of creamy white vinyl floor tiles containing between 10 and 20% chrysotile were identified in good condition.

Table 39.1 Summary of Asbestos Survey, Building WW24

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW24-101-FT1	101	Vinyl floor tile, red coloured, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	4 m ²
WW24-101-FT2	101	Vinyl floor tile, cream coloured, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	4 m ²
WW24-101-FT3	101	Vinyl floor tile, white coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW24-102-FT1	102	Vinyl floor tile, light cream coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW24-103-PE1	103	Pipe elbow, homogeneous, beige, soft, cementitious material	Non-friable	Good	A	None	ND	-
WW24-103-PE2	103	Pipe elbow, homogeneous, beige, soft, cementitious material	Non-friable	Good	A	None	ND	-

Notes:

1 Friability is assessed as friable or non-friable

2 Condition is rated as good, fair or poor

3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details

4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.

5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained

ND None detected (<0.5%)

39.2.2 Lead-Containing Materials

No paint samples were collected from the Building WW24 since the building was constructed of concrete blocks. The paint has soaked into the concrete and thus, a sample could not be retrieved without conducting destructive sampling. As requested in the TOR, destructive sampling was not conducted.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

39.2.3 Mercury

The only potential sources of mercury that were identified during the 2005 DSHMS were the fluorescent lamps and two thermostat switches throughout this building, which are expected to contain small quantities of mercury and mercury vapour. A thermostat switch was identified on the east wall of room 102, and another on the east wall of room 106. No high intensity discharge mercury-vapour lamps were found in use at this building.

39.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

39.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

39.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Approximately 33 fluorescent light ballasts are located throughout the building. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

39.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, one water fountain was identified in this building. This piece of equipment was not listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives. It contained R-12 which is considered an ODS. The specification information on this piece of equipment is summarized as follows:

- Room 103 (electricians) – King Seeley Thermos Co., Halsey Taylor Division (water fountain), Model No. S-5-C, Serial No. 1115651, 10 ounces of R-12.

39.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

39.2.9 Fuel, Oil, and/or Waste Oil Storage

There was no fuel, oil, or waste oil stored in this building.

39.2.10 Chemical Storage

No chemical storage areas were identified in this building during the current survey.

39.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

39.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

40. WW25 – SALLYPORT BUILDING

40.1 Building Description

This building was constructed in 1979 and contains one floor. The annotated floor plan (Figure WW25-1) showing the approximate building layout, dimensions and sampling locations is contained in Appendix 40. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

40.2 Survey Findings

On March 1, 2005, XCG conducted a DSHMS on Building WW25. The results of the DSHMS are presented in the subsections of Section 40.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificate of analysis for asbestos and lead paint testing are included in Appendix 40. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 40).

40.2.1 Asbestos-Containing Materials (ACMs)

One sample was collected from the building for bulk asbestos analysis using the PLM method. The result is summarized in Table 40.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plan in Appendix 40 shows the approximate sampling locations and areal or linear extent of asbestos (if present).

There were no ACMs identified in this building during the current survey.

Table 40.1 Summary of Asbestos Survey, Building WW25

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW25-101-STU1	101	Ceiling stucco, homogeneous, white, granular, cementitious material	Friable	Good	C (exposed)	None	ND	-

Notes:

- 1 Friability is assessed as friable or non-friable
2 Condition is rated as good, fair or poor
3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
ND None detected (<0.5%)

40.2.2 Lead-Containing Materials

One sample of paint was collected from the building and submitted for laboratory analysis of lead. Table 40.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plan in Appendix 40 shows the approximate sample location and areal extent of lead-containing paint (if present).

The analytical results indicated that the concentration of lead in the sample was below the lead-paint classification of 5,000 ppm. The laboratory conducted a duplicate of this sample for QA/QC purposes. The results of the original and duplicate samples were within approximately 35%, which is considered reasonable.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

40.2.3 Mercury

The only potential sources of mercury that were identified during the DSHMS were the fluorescent lamps throughout the building which are expected to contain small quantities of mercury vapour. No high intensity discharge mercury-vapour lamps were found in use at this building.

40.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

40.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 40.2 Summary of Lead Paint Survey, Building WW25

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW26-101-WP1	101	Paint from the interior east wall	Green	Good	1	<20	-
WW26-101-WP1 Duplicate	101	Paint from the interior east wall	Green	Good	1	27.1	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW26-101-WP1 Duplicate is a laboratory duplicate of WW26-101-WP1

40.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Seven fluorescent light ballasts are located throughout the building. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

40.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, one wall-mounted air conditioner, one domestic refrigerator and one floor air conditioning unit were identified in this building. These wall-mounted air conditioner and refrigerator differed from those listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives. The floor air conditioner was not listed in the inventory. Information regarding the refrigerant in these pieces of equipment could not be found, but they may potentially contain ODSs.

40.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

40.2.9 Fuel, Oil, and/or Waste Oil Storage

There was no fuel, oil, or waste oil stored in this building.

40.2.10 Chemical Storage

Approximately 8 containers of cleaning compounds, stored in spray bottles and 5-litre containers, were identified in Room 102. There was no hazardous materials listing or MSDS information for the cleaning compounds stored there.

40.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

40.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

41. WW26 – SPORTS COMPLEX

41.1 Building Description

This building was constructed in 1979 and contains two floors. The annotated floor plans (Figures WW26-1 and WW26-2) showing the approximate building layout, dimensions, sampling locations and areas of ACM are contained in Appendix 41. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

41.2 Survey Findings

On February 24, 2005, XCG conducted a DSHMS on Building WW26. The results of the DSHMS are presented in the subsections of Section 41.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 41. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 41).

All areas of the building were accessible during the current survey with the exception of Room 107 (Storage Room). There was no key available at the time of the survey to enter the room. The site escort indicated that the room is used for storage of sports equipment, and is very similar to the rest of the building.

41.2.1 Asbestos-Containing Materials (ACMs)

Three samples were collected from the building for bulk asbestos analysis using the PLM method and seven floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 41.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plans in Appendix 41 show the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- In 206 (Corridor), approximately 42 m² of brown coloured vinyl floor tile was found to contain between 10 and 20% chrysotile. The tile was observed to be in good condition. The same floor tile was also observed in the following rooms, and thus inferred to contain the same amount of asbestos: Room 201 (Supervisor), 13 m²; Room 202 (Staff Room), 23 m²; Room 203 (Games Room), 85 m²; and, Room 204 (Fitness Testing), 36 m².

Table 41.1 Summary of Asbestos Survey, Building WW26

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibilty ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW26-CT1	108	Ceiling tile, homogeneous, fibrous, beige material	Non-friable	Good	C (exposed)	None	ND	-
WW26-101-FT1	101	Vinyl floor tile, white coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW26-101-FT2	101	Vinyl floor tile, cream coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW26-101-FT3	101	Vinyl floor tile, grey coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW26-101-FT4	101	Vinyl floor tile, white coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW26-101-FT5	101	Vinyl floor tile, pink coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW26-119-PE1	119	Pipe elbow, homogeneous, grey, soft, cementitious material	Non-friable	Good	A	None	ND	-
WW26-119-PE2	119	Pipe elbow, homogeneous, grey, soft, cementitious material	Non-friable	Good	A	None	ND	-
<i>Second Floor</i>								
WW26-204-FT1	204	Vinyl floor tile, grey mocha coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW26-206-FT1	206	Vinyl floor tile, brown coloured, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	42 m²
-	201	Vinyl floor tile, brown coloured, 12"x12", inferred to be the same as in room 206	Non-friable	Good	A	7	(C) 10-20%	13 m²
-	202	Vinyl floor tile, brown coloured, 12"x12", inferred to be the same as in room 206	Non-friable	Good	A	7	(C) 10-20%	23 m²
-	203	Vinyl floor tile, brown coloured, 12"x12", inferred to be the same as in room 206	Non-friable	Good	A	7	(C) 10-20%	85 m²
-	204	Vinyl floor tile, brown coloured, 12"x12", inferred to be the same as in room 206	Non-friable	Good	A	7	(C) 10-20%	36 m²

Notes:

- 1 Friability is assessed as friable or non-friable
- 2 Condition is rated as good, fair or poor
- 3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
- 4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
- 5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
- ND None detected (<0.5%)

41.2.2 Lead-Containing Materials

Nine samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 41.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plans in Appendix 41 show the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that the concentrations of lead in all nine samples were below the lead-paint classification of 5,000 ppm. The laboratory conducted a duplicate analysis of paint sample WW26-204-WP1 for QA/QC purposes. The results of both the original and duplicate were the same (<20 ppm). This provides support that the results are representative.

In addition to the paint tested, the field team observed several different colours of paint in the main gymnasium. They were pictograms of various sports. They were in good condition, and could not be sampled as this would have required destructive testing.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

41.2.3 Mercury

The only potential sources of mercury that were identified during the DSHMS were the fluorescent lamps throughout the building and the thermostat switch on the east wall of Room 122. The lamps are expected to contain small quantities of mercury vapour. There are approximately fifty high intensity discharge (HID) lamps on the ceiling of the main gymnasium. There may potentially be mercury vapours in the HID lamps as well.

41.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

41.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 41.2 Summary of Lead Paint Survey, Building WW26

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW26-101-WP1	101	Paint from the interior west wall	White	Good	1	<20	-
WW26-102-WP1	102	Paint from the interior north wall	Cream	Good	1	<20	-
WW26-111-WP1	111	Paint from the interior north wall	Green	Good	1	32.4	-
WW26-119-DT1	119	Paint from the door to the room	Grey	Good	1	330	-
WW26-TR1(GRY)	108	Paint from the door to the room	Grey	Good	1	637	-
WW26-TR2(RED)	106	Paint from the door to the room	Red	Good	1	469	-
<i>Second Floor</i>							
WW26-204-WP1	204	Paint from the interior west wall	Sky blue	Good	1	<20	-
WW26-204-WP1 Duplicate	204	Paint from the interior west wall	Sky blue	Good	1	<20	-
WW26-205-WP1	205	Paint from the interior south wall	Greyish blue	Good	1	153	-
WW26-218-TR1	218	Paint from the railing trim	Blue	Good	1	354	-

Notes:¹ Condition is rated as good, fair or poor with peeling and/or flaking² Layers of paint are noted visually and can only be observed if the layers are different colours**Bold** Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW26-204-WP1 Duplicate is a laboratory duplicate of WW26-204-WP1

41.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

There are approximately 86 fluorescent lights ballasts throughout the first floor of the building, with the exception of rooms 101, 109 and 122. There were approximately 32 ballasts throughout the second floor of the building. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high. The HID lamp ballasts potentially contain PCBs.

No other potential sources of PCBs, such as transformers, were observed in this building.

41.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, two wall-mounted air conditioners, one small bar fridge, one ice maker, one chest freezer and one water fountain were identified in this building. None of these pieces of equipment were listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives. One of the air conditioning units contains R-22, which is considered an ODSs. Information regarding the refrigerant in all other pieces of equipment could not be found, but they may potentially contain ODSs. The specification information on equipment that contained them is summarized as follows:

- Room 204 (Fitness Testing) – Goldstar (air conditioner), Model No. unknown, Serial No. unknown, 14 ounces of R-22.

41.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

41.2.9 Fuel, Oil, and/or Waste Oil Storage

There was no fuel, oil, or waste oil stored in this building.

41.2.10 Chemical Storage

Chemicals in the form of cleaning compounds were found stored in Room 110 (Staff Locker Room). There was no MSDS information in the room, nor was there an inventory of the hazardous chemicals stored there.

41.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

41.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

42. WW27 – VISITOR, CORRESPONDENCE & CONTROL CENTRE

42.1 Building Description

This building was constructed in 1981 and contains one floor and a partial basement. The annotated floor plans (Figures WW27-B and WW27-1) showing the approximate building layout, dimensions, sampling locations and areas of ACM are contained in Appendix 42. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

42.2 Survey Findings

On February 25, 2005, XCG conducted a DSHMS on Building WW27. The results of the DSHMS are presented in the subsections of Section 42.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 42. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 42).

42.2.1 Asbestos-Containing Materials (ACMs)

A total of four samples were collected from the building for bulk asbestos analysis using the PLM method, and five floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 42.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plans in Appendix 42 show the approximate sampling locations and areal or linear extent of asbestos (if present).

The following ACMs were identified:

- In Room 108 (Visitor Reception) approximately 4 m² of light brown coloured vinyl floor tiles were found to contain between 10 and 20% of chrysotile. These tiles appeared to be a patchwork, replacing the original cream tiles. The tiles appeared to be in good condition.

Table 42.1 Summary of Asbestos Survey, Building WW27

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW27-108-FT1	108	Vinyl floor tile, light brown coloured, 12"x12"	Non-friable	Good	A	7	(C) 10-20%	4 m ²
WW27-108-FT2	108	Vinyl floor tile, cream coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW27-119-STU1	119	Ceiling stucco, homogeneous, beige, soft, cementitious material	Non-friable	Good	C (exposed)	None	ND	-
WW27-119-FT1	119	Vinyl floor tile, white coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW27-120-CT1	120	Ceiling tile, homogeneous, beige, compressed fibrous material	Friable	Good	C (exposed)	None	ND	-
WW27-120-CT2	120	Ceiling tile, homogeneous, beige, compressed fibrous material	Friable	Good	C (exposed)	None	ND	-
WW27-120-FT1	120	Vinyl floor tile, grey marble pattern, 12"x12"	Non-friable	Good	A	None	ND	-
WW27-122-CT1	122	Ceiling tile, homogeneous, beige, layered, compressed, fibrous material	Friable	Good	C (exposed)	None	ND	-
WW27-151-FT1	151	Vinyl floor tile, white coloured with grey flecks, 12"x12"	Non-friable	Good	A	None	ND	-

Notes:

1 Friability is assessed as friable or non-friable

2 Condition is rated as good, fair or poor

3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details

4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.

5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained

ND None detected (<0.5%)

42.2.2 Lead-Containing Materials

Eleven samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 42.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plans in Appendix 42 show the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that the concentrations of lead in all eleven samples were below the lead-paint classification of 5,000 ppm. No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

42.2.3 Mercury

The only potential sources of mercury that were identified during the DSHMS were the fluorescent lamps throughout the building and thermostat switches located throughout the building. There was a thermostat switch on the east wall of Room 119 (Open Contact Visit), on the east wall of Room 122 (Office & Control), on the east wall of Room 139 (Vestibule), on the west wall of Room 135 (M.C.C.P) and on the south wall of B01 (Work Area). The lamps are expected to contain small quantities of mercury vapour. No high intensity discharge mercury-vapour lamps were found in use at this building.

42.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

42.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 42.2 Summary of Lead Paint Survey, Building WW27

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>Basement</i>							
WW27-B01-WP1	B01	Paint from the interior south wall	Yellow	Good	1	<20	-
WW27-B03-WP1	B03	Paint from the interior west wall	Blue	Good	1	<20	-
<i>First Floor</i>							
WW27-119-TR1	119	Paint from the north entrance door	Blue	Good	1	<20	-
WW27-119-WP1	119	Paint from the interior east wall	White	Good	1	<20	-
WW27-120-WP1	120	Paint from the interior west wall	White	Good	1	<20	-
WW27-137-WP1	137	Paint from the interior north wall	Olive green	Good	1	<20	-
WW27-139-WP1	139	Paint from the interior west wall	Sky blue	Good	1	<20	-
WW27-140-WP1	140	Paint from the interior north wall	Cream	Good	1	<20	-
WW27-162-FP1	162	Paint from the floor of the room	Grey	Good	1	<20	-
WW27-167-WP1	167	Paint from the interior north wall	Sky blue	Good	1	<20	-
WW27-167-WP2	167	Paint from the interior east wall	Medium blue	Good	1	22.6	-

Notes:¹ Condition is rated as good, fair or poor with peeling and/or flaking² Layers of paint are noted visually and can only be observed if the layers are different colours**Bold** Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

42.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

There are approximately 226 fluorescent lights ballasts throughout the first floor of the building, and 6 ballasts in the basement. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high.

No other potential sources of PCBs, such as transformers, were observed in this building.

42.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, two domestic refrigerators, one water cooler, five small bar fridges, two water fountains, four vending machines and one wall mounted air conditioner were identified in this building. Most of this equipment is not listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives. The refrigerators and one of the water fountains contain R-12 refrigerant, and one of the vending machines contains R-134a, both of which are considered to be ODSs. Information on all other pieces of equipment could not be found, but they potentially contain an ODS. The specification information for equipment that contained it is summarized as follows:

- Room 108 (Visitor Reception) – Temprite (water fountain), Model No. WFR83, Serial No. 820155042, 0.150 kilograms of R-12;
- Room 112 (Private Open Visit) – Crosley (refrigerator), Model No. CT17X4W, Serial No. 11049475HY, 5.5 ounces of R-12;
- Room 119 (Open Contact Visit) – Vendo Company (vending machine), Model No. unknown, Serial No. unknown, unknown amount of R-134a; and
- Room 133 (Vestibule) – Kenmore (refrigerator), Model No. C646-7568980, Serial No. 6EA08280, 5.25 ounces of R-12.

42.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

42.2.9 Fuel, Oil, and/or Waste Oil Storage

There was no fuel, oil, or waste oil stored in this building.

42.2.10 Chemical Storage

Chemicals in the form of cleaning compounds were found stored in Room 108 (Visitor Reception), Room 116 (Maintenance Closet), Room 118 (Storage Locker), Room 153 (Maintenance Closet), Room 161 (Maintenance Closet) and Room 177 (Janitor). None of these rooms contained MSDS information, nor was there an inventory of hazardous materials stored present.

42.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

42.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

43. WW31 – ACCOMMODATION BUILDING (80-MAN UNIT)

43.1 Building Description

This building was constructed in 1990 and contains two floors and a mezzanine level. The annotated floor plans (Figures WW31-1 and WW31-2) showing the approximate building layout, dimensions, sampling locations and areas of lead paint are contained in Appendix 43. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

43.2 Survey Findings

On February 18 and 22, 2005, XCG conducted a DSHMS on Building WW31. The results of the DSHMS are presented in the subsections of Section 43.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analysis for asbestos and lead paint testing are included in Appendix 43. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 43).

43.2.1 Asbestos-Containing Materials (ACMs)

One sample was collected from the building for bulk asbestos analysis using the PLM method, and five floor tiles were tested for asbestos using the TEM method. The results are summarized in Table 43.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plans in Appendix 43 show the approximate sampling locations and areal or linear extent of asbestos (if present).

No ACMs were identified in this building during the current survey.

Table 43.1 Summary of Asbestos Survey, Building WW31

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW31-122-FT1	122	Vinyl floor tile, pinkish salmon coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW31-124-FT1	124	Vinyl floor tile, white coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW31-176-FT1	176	Vinyl floor tile, cream coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW31-176-FT2	176	Vinyl floor tile, grey coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW31-195-STU1	195	Ceiling stucco, homogeneous, white, soft, cementitious material	Non-friable	Good	C (exposed)	None	ND	-
<i>Second Floor</i>								
WW31-218-FT1	218	Vinyl floor tile, pink coloured, 12"x12"	Non-friable	Good	A	None	ND	-

Notes:

- 1 Friability is assessed as friable or non-friable
2 Condition is rated as good, fair or poor
3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
ND None detected (<0.5%)

43.2.2 Lead-Containing Materials

Nine samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 43.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plans in Appendix 43 show the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that the concentration of lead in one sample was above the lead-paint classification of 5,000 ppm. A yellow paint sample from the rails and pipes of Room M02 (Mezzanine) was found to contain a lead concentration of 10,052 ppm. Due to the nature of the surfaces painted, it was difficult to quantify the exact amount of this paint, but it is estimated to be approximately 10 m², and it is in poor condition. Considering that the building was constructed in 1990, lead-based paint would not have been expected to exist. The lead-based paint detected on the rails and pipes may have been old paint that was kept in storage and used for this trim work.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

43.2.3 Mercury

The only potential sources of mercury that were identified during the DSHMS were the fluorescent lamps throughout the building which are expected to contain small quantities of mercury vapour. There are approximately 29 high intensity discharge (HID) lamps on the ceiling of the hallways. There may potentially be mercury vapours in the HID lamps as well.

43.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of this building during the current survey.

43.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 43.2 Summary of Lead Paint Survey, Building WW31

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW31-TR1	100	Paint from the exterior main entrance doors	Red	Fair	1	666	-
WW31-TR1 Duplicate	100	Paint from the exterior main entrance doors	Red	Fair	1	332.4	-
WW31-104-WP1	104	Paint from the interior east wall	Blue	Good	1	<20	-
WW31-122-WP1	122	Paint from the interior east wall	Purple	Good	1	<20	-
WW31-122-CP1	122	Paint from the ceiling of the room	White	Good	1	<20	-
WW31-148-TR1	148	Paint from a cabinet in the room	Yellow	Good	1	<20	-
WW31-176-WP1	176	Paint from the interior south wall	Sky blue	Good	1	21.3	-
WW31-194-WP1	194	Paint from the interior east wall	Pink	Good	1	21.1	-
<i>Second Floor</i>							
WW31-M01-FP1	M01	Paint from the floor of the room	Grey	Fair	1	<20	-
WW31-M02-TR1	M02	Paint from the doors, railings and pipes of the room	Yellow	Poor	1	10,052	10

Notes:¹ Condition is rated as good, fair or poor with peeling and/or flaking² Layers of paint are noted visually and can only be observed if the layers are different colours**Bold** Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW31-TR1 Duplicate is a laboratory duplicate of WW31-TR1

43.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

There are approximately 127 fluorescent lights ballasts throughout the first floor of the building, and 93 ballasts in the basement. XCG could not open up any of the plate covers to record the ballast information because the ceilings were too high, but based on the age of the building, PCB-containing ballasts are not expected to exist in the fluorescent light ballasts, as well as the HID lamp ballasts.

No other potential sources of PCBs, such as transformers, were observed in this building.

43.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, six domestic refrigerators, one water cooler, two small bar fridges, one soda pop vending machines, two ice makers, two chest freezers, and eight air conditioner units were identified in this building. Most of this equipment is not listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives. All the air conditioning units contain R-22 refrigerant. One of the refrigerators contains R-12. The rest of the refrigerators, the soda pop vending machine and the water cooler all contain R-134a. Finally, one of the ice makers contains R-404a. All of these refrigerants are considered to be ODSs. Information regarding the refrigerants in the other pieces of equipment could not be found, but they may potentially contain an ODS. The specification information for equipment that contained it is summarized as follows:

- Room 102 (Case Management Office) – DeLonghi (air conditioner), Model No. PAC 250U, Serial No. 511P25880A, 18 ounces of R-22;
- Room 103 (Interview Room) – DeLonghi (air conditioner), Model No. PAC 152R, Serial No. unknown, 17 ounces of R-22;
- Room 104 (Small Group Meeting Room) – DeLonghi (air conditioner), Model No. PAC 152R, Serial No. unknown, 17 ounces of R-22;
- Room 122 (Kitchen) – Inglis (refrigerator), Model No. IKT141300, Serial No. VSL3800631, unknown amount of R-134a;
- Room 141 (Multi-Purpose Room) – LG (refrigerator), Model No. GR-T542, Serial No. 006KR00056, 0.135 kilograms of R-134a;
- Room 141 (Multi-Purpose Room) – Sears Canada Inc. (refrigerator), Model No. 970-658722, Serial No. BA40820473, 0.121 kilograms of R-134a;
- Room 142 (Case Management Office) – Toyotomi (air conditioner), Model No. TID-1800, Serial No. unknown, 0.440 kilograms of R-22;
- Room 143 (Lounge) – Royal Vendors (pop machine), Model No. RVCC660-13, Serial No. 14990K03948, 5.25 ounces of R-134a;

- Room 143 (Lounge) – Electrolux Home Products (refrigerator), Model No. FRT18G4AWA, Serial No. BA32309409, 0.128 kilograms of R-134a;
- Room 143 (Lounge) – Chicago (water cooler), Model No. 305 C, Serial No. 0205100390527, 1.35 ounces of R-134a;
- Room 153 (Maintenance) – Hoshizaki Ice Maker (ice maker), Model No. AM-150BAF, Serial No. P11176B, 9.5 ounces of R-404a;
- Room 154 (Case Management Office) – DeLonghi (air conditioner), Model No. PAC 152R, Serial No. unknown, 17 ounces of R-22;
- Room 155 (Multi-Purpose Room) – Wood's (refrigerator), Model No. U350, Serial No. 192467CH, 0.238 kilograms of R-12;
- Room 155 (Multi-Purpose Room) – Frigidaire (refrigerator), Model No. MRT18GRGW1, Serial No. BA00712216, 0.142 kilograms of R-134a;
- Room 193 (Small Group Meeting Room) – DeLonghi (air conditioner), Model No. PAC 152R, Serial No. unknown, 17 ounces of R-22;
- Room 194 (Interview Room) – DeLonghi (air conditioner), Model No. PAC 250U, Serial No. unknown, 0.550 kilograms of R-22; and
- Room 195 (Case Management Office) – DeLonghi (air conditioner), Model No. PAC 152R, Serial No. unknown, 17 ounces of R-22.

43.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

43.2.9 Fuel, Oil, and/or Waste Oil Storage

There was no fuel, oil, or waste oil stored in this building.

43.2.10 Chemical Storage

Chemicals in the form of cleaning compounds were found stored in Room 146 (Change Room – Male). No MSDS information or hazardous materials inventory was found for the chemicals stored there.

43.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

43.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

44. WW32 – PRIVATE FAMILY VISIT DUPLEX (UNITS 1 & 2)

44.1 Building Description

This building was constructed in 1992 and contains one floor and a basement level. The annotated floor plans (Figure WW32-B and WW32-1) showing the approximate building layout, dimensions and sampling locations are contained in Appendix 44. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

44.2 Survey Findings

On February 17, 2005, XCG conducted a DSHMS on Building WW32. The results of the DSHMS are presented in the subsections of Section 44.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analyses for asbestos and lead paint testing are included in Appendix 44. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 44).

44.2.1 Asbestos-Containing Materials (ACMs)

One sample was collected from the building for bulk asbestos analysis using the PLM method, and two floor tiles and one linoleum flooring sample were tested for asbestos using the TEM method. The results are summarized in Table 44.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plans in Appendix 44 show the approximate sampling locations and areal or linear extent of asbestos (if present).

No ACM was identified in this building during the current survey.

Table 44.1 Summary of Asbestos Survey, Building WW32

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW32-U2(107)-STU1	107	Ceiling stucco, homogeneous, white, compressed, fibrous material	Non-friable	Good	C (exposed)	None	ND	-
WW32-U2(107)-FT1	107	Vinyl floor tile, grey coloured with grey and white flecks, 12"x12"	Non-friable	Good	A	None	ND	-
WW32-U2(107)-FT2	107	Vinyl floor tile, white coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW32-U2(109)-LIN1	109	Linoleum flooring, green coloured	Non-friable	Good	A	None	ND	-

Notes:

- 1 Friability is assessed as friable or non-friable
2 Condition is rated as good, fair or poor
3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details
4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.
5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained
ND None detected (<0.5%)

44.2.2 Lead-Containing Materials

Four samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 44.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plans in Appendix 44 show the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that the concentrations of lead in all four samples were below the lead-paint classification of 5,000 ppm. The laboratory conducted a duplicate analysis of paint sample WW32-U2(109)-WP1. The results of the original and duplicate samples were identical (<20 ppm). This provides support that the results are representative.

No other potential lead-containing materials such as lead pipe or lead wiring were identified in accessible areas during the survey. To the best of his knowledge, Mr. John Sipos of the CSC believes that all of the lead pipe and wiring that previously existed in the building has been replaced over time.

44.2.3 Mercury

A total of two mercury thermostat switches were observed in the building. One was on the south wall of Room 102, and the other was on the north wall of Room 108. Fluorescent lamps are located in the basement of the building and are expected to contain small quantities of mercury vapour.

Discussions with the maintenance staff revealed that there is no equipment containing significant quantities of mercury.

44.2.4 Silica

Silica may potentially be present in the concrete and concrete block walls in the basement of the building.

44.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 44.2 Summary of Lead Paint Survey, Building WW32

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW32-U1(103)-WP1	103	Paint from the interior west wall	Pink	Good	1	<20	-
WW32-U2(107)-WP1	107	Paint from the interior of the kitchen cupboard	Green	Good	1	<20	-
WW32-U2(108)-WP1	108	Paint from the interior north wall	White	Good	1	<20	-
WW32-U2(109)-WP1	109	Paint from the interior west wall	Blue	Good	1	<20	-
WW32-U2(109)-WP1 Duplicate	109	Paint from the interior west wall	Blue	Good	1	<20	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW32-U2(109)-WP1 Duplicate is a laboratory duplicate of WW32-U2(109)-WP1

44.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Five fluorescent light ballasts are located throughout the basement of the building. Due to the age of the building (1992), these ballasts are expected to not contain PCBs.

No other potential sources of PCBs, such as transformers, were observed in this building.

44.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, two domestic refrigerators and two exterior air conditioning units were identified in this building. In the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives, the air conditioners are listed, but the refrigerators are not. The refrigerators contain R-12 refrigerant, and the air conditioner contain R-22, both of which are considered ODSs. The specification information for these pieces of equipment is summarized as follows:

- Outside Visiting Unit#1 – Lennox (central air conditioner), Model No. HS18211C10P, Serial No. 6389J56738, 1.814 kilograms of R-22;
- Outside Visiting Unit #2 – Lennox (central air conditioner), Model No. HS18211C10P, Serial No. 6389J56748, 1.814 kilograms of R-22;
- Unit 1, Room 101 (kitchen/dining room) – Kenmore (refrigerator), Model No. C970-15200-4, Serial No. NA13903037, 149 grams of R-12; and,
- Unit 2, Room 107 (kitchen/dining room) – Kenmore (refrigerator), Model No. C970-15200-4, Serial No. NA13600297, 149 grams of R-12.

44.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

44.2.9 Fuel, Oil, and/or Waste Oil Storage

There was no fuel, oil, or waste oil stored in this building.

44.2.10 Chemical Storage

There was a small quantity (less than five) of cleaning compounds (e.g. Old Dutch) in Room 109. There was no MSDS information for the chemicals stored in this room.

44.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

44.2.12 Mould

Water damage was observed in the southeastern area of Room B01, the Furnace Room. The water staining was present on the concrete block wall and concrete floor. There was no actual mould growth observed in this area.

45. WW33 – WAREHOUSE

45.1 Building Description

This building was constructed in 1992 and contains one floor. The annotated floor plan (Figure WW33-1) showing the approximate building layout and dimensions is contained in Appendix 45. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

45.2 Survey Findings

On February 10, 2005, XCG conducted a DSHMS on Building WW33. The results of the DSHMS are presented in the subsections of Section 45.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 44).

45.2.1 Asbestos-Containing Materials (ACMs)

No samples were taken as no potential ACMs were identified.

45.2.2 Lead-Containing Materials

No samples were taken as no painted areas were found in the building during the survey. There were no other potential lead-containing materials found.

45.2.3 Mercury

One mercury thermostat switch was observed on the north wall of the building. Also, 10 high intensity discharge (HID) lamps present in the building also potentially contain small quantities of mercury vapour.

Discussions with the maintenance staff revealed that there is no equipment containing significant quantities of mercury.

45.2.4 Silica

Silica-containing concrete was present in the floor of the building during the current survey.

45.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

45.2.6 Polychlorinated Biphenyls (PCBs)

There were no potential sources of PCBs identified in the building during the current survey.

45.2.7 Ozone-Depleting Substances (ODSs)

There was no equipment containing ODSs identified in the building during the current survey.

45.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

45.2.9 Fuel, Oil, and/or Waste Oil Storage

Three 205-litre drums were observed inside the building, tied together with metal strapping. Two of the drums were labelled as containing new hydraulic oil. The third drum potentially contains a petroleum product. A fourth 205-litre drum was observed on a storage shelf, and may also contain petroleum.

45.2.10 Chemical Storage

Approximately ten 25-litre pails of various materials were found and appeared to be no longer in use. Material no longer in use should be disposed of in accordance with applicable regulations.

45.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

45.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

46. WW34 – PRIVATE FAMILY VISIT DUPLEX (UNITS 3 & 4)

46.1 Building Description

This building was constructed in 1994 and contains one floor and a basement level. The annotated floor plans (Figure WW34-B and WW34-1) showing the approximate building layout, dimensions and sampling locations are contained in Appendix 46. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

46.2 Survey Findings

On February 17, 2005, XCG conducted a DSHMS on Building WW34. The results of the DSHMS are presented in the subsections of Section 46.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analyses for ACM and lead paint testing are included in Appendix 46. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 46).

46.2.1 Asbestos-Containing Materials (ACMs)

One sample was collected from the building for bulk asbestos analysis using the PLM method, and one floor tile and one linoleum flooring sample were tested for asbestos using the TEM method. The results are summarized in Table 46.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plans in Appendix 46 show the approximate sampling locations and areal or linear extent of asbestos (if present).

No ACM was identified in this building during the current survey.

Table 46.1 Summary of Asbestos Survey, Building WW34

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW34-U3(108)-LIN1	108	Linoleum flooring, terrazzo pattern	Non-friable	Good	A	None	ND	-
WW34-U3(109)-STU1	109	Ceiling stucco, homogeneous, white, soft, cementitious material	Non-friable	Good	C (exposed)	None	ND	-
WW34-U3(110)-FT1	110	Vinyl floor tile, white coloured with grey flecks, 12"x12"	Non-friable	Good	A	None	ND	-

Notes:

1 Friability is assessed as friable or non-friable

2 Condition is rated as good, fair or poor

3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details

4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.

5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained

ND None detected (<0.5%)

46.2.2 Lead-Containing Materials

Five samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 46.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plans in Appendix 46 show the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that the concentrations of lead in all five samples were below the lead-paint classification of 5,000 ppm. The laboratory conducted a duplicate analysis of paint sample WW34-U4(106)-WP1. The results of both the original and duplicate samples were below the detection limit of 20 ppm. This provides support that the results are representative.

No other potential sources of lead were observed inside this building.

46.2.3 Mercury

A total of two mercury thermostat switches were observed in the building. One was on the south wall of Room 102, and the other was on the west wall of Room 109. Fluorescent lamps are located in the basement of the building and are expected to contain small quantities of mercury vapour.

Discussions with the maintenance staff revealed that there is no equipment containing significant quantities of mercury.

46.2.4 Silica

Silica may potentially be present in the concrete and concrete block walls in the basement of the building.

46.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 46.2 Summary of Lead Paint Survey, Building WW34

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW34-U3(109)-WP1	109	Paint from the interior north wall	Green	Good	1	<20	-
WW34-U3(110)-TR1	110	Door paint from the entrance to the room	Purple	Good	1	<20	-
WW34-U3(113)-WP1	113	Paint from the interior east wall	Medium green	Good	1	<20	-
WW34-U4(101)-WP1	101	Paint from the interior west wall	White	Good	1	<20	-
WW34-U4(106)-WP1	106	Paint from the interior north wall	Cream	Good	1	<20	-
WW34-U4(106)-WP1 Duplicate	106	Paint from the interior north wall	Cream	Good	1	<20	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm
 WW34-U4(106)-WP1 Duplicate is a laboratory duplicate of WW34-U4(106)-WP1

46.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Six fluorescent light ballasts are located throughout the basement of the building. Due to the age of the building (1994), these ballasts are expected to not contain PCBs.

No other potential sources of PCBs, such as transformers, were observed in this building.

46.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, three domestic refrigerators and two exterior air conditioning units were identified in this building. In the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives, the air conditioners and one refrigerator are listed, but the other refrigerators are not. One of the refrigerators contains R-134a refrigerant, one contains R-12 and the other is unknown. The refrigerant in the air conditioners is R-22. All these refrigerants are considered to be an ODS. The specification information on the equipment that contained them is summarized as follows:

- Outside Visiting Unit #3 – Coleman (central air conditioner), Model No. unknown, Serial No. 940702351, 1.724 kilograms of R-22;
- Outside Visiting Unit #4 – Coleman (central air conditioner), Model No. unknown, Serial No. 940708367, 1.724 kilograms of R-22;
- Unit #3, Room 108 (kitchen/dining room) – Crosley, Model No. CT17X4W, Serial No. 11049627HY, 5.5 ounces of R-12; and,
- Unit #4, Room 102 (kitchen/dining room) – Electrolux Home Products (refrigerator), Model No. FRT14B4AW0, Serial No. BA13915097, 4 ounces of R-134a.

46.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

46.2.9 Fuel, Oil, and/or Waste Oil Storage

There was no fuel, oil, or waste oil stored in this building.

46.2.10 Chemical Storage

Small quantities (five containers) of cleaning compounds (e.g. Dustbane Nu-Life, Lemon Furniture Polish 2000) were observed in Unit 4, Room 105. Similar compounds were observed in Room 107. In Unit 3, five containers of cleaning compounds (e.g. Dustbane Hi-Genic, Old Dutch, Lemon Glo) were stored in Room 110. There was no MSDS information for these compounds located in this building.

46.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

46.2.12 Mould

Water damage was observed in the western area of room B01 and in two areas of B02, the Furnace Rooms. Visual evidence of mould growth was observed on the drywall.

47. WW35 – PRIVATE FAMILY VISIT DUPLEX (UNITS 5 & 6)

47.1 Building Description

This building was constructed in 1994 and contains one floor and a basement level. The annotated floor plans (Figure WW35-B and WW35-1) showing the approximate building layout, dimensions and sampling locations are contained in Appendix 47. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

47.2 Survey Findings

On February 17, 2005, XCG conducted a DSHMS on Building WW35. The results of the DSHMS are presented in the subsections of Section 47.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analyses for asbestos, urea/formaldehyde, and lead paint testing are included in Appendix 47. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 47).

47.2.1 Asbestos-Containing Materials (ACMs)

One sample was collected from the building for bulk asbestos analysis using the PLM method, and one floor tile and one linoleum flooring sample were tested for asbestos using the TEM method. The results are summarized in Table 47.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plans in Appendix 47 show the approximate sampling locations and areal or linear extent of asbestos (if present).

No ACMs were identified in this building during the current survey.

Table 47.1 Summary of Asbestos Survey, Building WW35

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW35-U5(108)-LIN1	108	Linoleum flooring, terrazzo pattern	Non-friable	Good	A	None	ND	-
WW35-U5(109)-STU1	109	Ceiling stucco, homogeneous, white, soft, cementitious material	Non-friable	Good	C (exposed)	None	ND	-
WW35-U5(110)-FT1	110	Vinyl floor tile, white coloured with grey flecks, 12"x12"	Non-friable	Good	A	None	ND	-

Notes:

1 Friability is assessed as friable or non-friable

2 Condition is rated as good, fair or poor

3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details

4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.

5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained

ND None detected (<0.5%)

47.2.2 Lead-Containing Materials

Three samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 47.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plans in Appendix 47 show the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that the concentrations of lead in all three samples were below the lead-paint classification of 5,000 ppm. The laboratory conducted a duplicate analysis of paint sample WW35-U5(113)-TR1. The results of the original and duplicate were within 23%, which is considered reasonably close. This provides support that the results are representative.

There was no evidence of other potential sources of lead observed during the site inspection.

47.2.3 Mercury

A total of two mercury thermostat switches were observed in the building. One was on the south wall of Room 104, and the other was on the east wall of Room 111. Fluorescent lamps are located in the basement of the building and are expected to contain small quantities of mercury vapour.

Discussions with the maintenance staff revealed that there is no equipment containing significant quantities of mercury.

47.2.4 Silica

Silica may potentially be present in the concrete and concrete block walls in the basement of the building.

47.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 47.2 Summary of Lead Paint Survey, Building WW35

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW35-U5(108)-WP1	108	Paint from the interior east wall	Blue	Good	1	<20	-
WW35-U5(109)-WP1	109	Paint from the interior north wall	Light green	Good	1	<20	-
WW35-U5(113)-TR1	113	Paint from the door frame trim	Brown	Good	1	30.7	-
WW35-U5(113)-TR1 Duplicate	113	Paint from the door frame trim	Brown	Good	1	23.5	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW35-U5(113)-TR1 Duplicate is a laboratory duplicate of WW35-U5(113)-TR1

47.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Six fluorescent light ballasts are located throughout the basement of the building. Due to the age of the building (1994), these ballasts are expected to not contain PCBs.

No other potential sources of PCBs, such as transformers, were observed in this building.

47.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, two domestic refrigerators and two exterior air conditioning units were identified in this building. All these pieces of equipment are listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives. The refrigerators both contain R-12, while the air conditioners both contain R-22 refrigerant. Both refrigerants are considered to be an ODS. The specification information for this equipment is summarized as follows:

- Outside Visiting Unit #5 – Coleman (central air conditioner), Model No. unknown, Serial No. 940708375, 1.724 kilograms of R-22;
- Outside Visiting Unit #6 – Coleman (central air conditioner), Model No. unknown, Serial No. 94070372, 1.724 kilograms of R-22;
- Unit #5, Room 108 (kitchen/dining room) – Crosley (refrigerator), Model No. CT17X4W, Serial No. 11049636HY, 0.156 kilograms of R-12; and,
- Unit #6, Room 108 (kitchen/dining room) – Crosley (refrigerator), Model No. CT17X4W, Serial No. 11049602HY, 0.156 kilograms of R-12.

47.2.8 Urea Formaldehyde Foam Insulation (UFFI)

During the site inspection, the CSC escort indicated to XCG that he believed the insulating material in the basement of Unit 5 (B01) was UFFI. As such, XCG collected a sample for analysis of urea and formaldehyde. Formaldehyde was detected at 16 ppm. However, the presence of formaldehyde is not related to UFFI. Upon re-evaluating the information after the site inspection, it was realized that the building was constructed in 1994, well after the use of UFFI was banned.

47.2.9 Fuel, Oil, and/or Waste Oil Storage

There was no fuel, oil, or waste oil stored in this building.

47.2.10 Chemical Storage

In Unit 5, four small containers of cleaning compounds (e.g. glass cleaner) were observed in Room 110. There was no MSDS information for these compounds located in the building.

47.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

47.2.12 Mould

Water damage was observed in the western corner of Room B01, the Furnace Room. Visual evidence of mould growth was observed on the drywall.

48. WW36 – PRIVATE FAMILY VISIT DUPLEX (UNITS 7 & 8)

48.1 Building Description

This building was constructed in 1994 and contains one floor and a basement level. The annotated floor plans (Figure WW36-B and WW36-1) showing the approximate building layout, dimensions and sampling locations are contained in Appendix 48. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

48.2 Survey Findings

On February 17, 2005, XCG conducted a DSHMS on Building WW36. The results of the DSHMS are presented in the subsections of Section 48.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analyses for asbestos and lead paint testing are included in Appendix 48. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 48).

48.2.1 Asbestos-Containing Materials (ACMs)

One sample was collected from the building for bulk asbestos analysis using the PLM method, and one floor tile and one linoleum flooring sample were tested for asbestos using the TEM method. The results are summarized in Table 48.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plans in Appendix 48 show the approximate sampling locations and areal or linear extent of asbestos (if present).

No ACM was identified in this building during the current survey.

Table 48.1 Summary of Asbestos Survey, Building WW36

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW36-U7(108)-FT1	108	Vinyl floor tile, white coloured with grey flecks, 12"x12"	Non-friable	Good	A	None	ND	-
WW36-U7(109)-STU1	109	Ceiling stucco, homogeneous, white soft, cementitious material	Non-friable	Good	C (exposed)	None	ND	-
WW36-U7(110)-LIN1	110	Linoleum flooring, terrazzo pattern	Non-friable	Good	A	None	ND	-

Notes:

1 Friability is assessed as friable or non-friable

2 Condition is rated as good, fair or poor

3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details

4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.

5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained

ND None detected (<0.5%)

48.2.2 Lead-Containing Materials

Three samples of paint were collected from the building and submitted for laboratory analysis of lead. Table 48.2 provides a summary of the lead paint survey. The sample identification, floor number, room number, location and description, colour, condition, number of layers noted, lead content, and approximate area (for lead-based paint only) are included in the table. The annotated building floor plans in Appendix 48 show the approximate sample locations and areal extent of lead-containing paint (if present).

The analytical results indicated that the concentrations of lead in all three samples were below the lead-paint classification of 5,000 ppm. The laboratory conducted a duplicate analysis of paint sample WW36-U8(B02)-CP1 for QA/QC purposes. The results of both the original and duplicate samples were the same (<20 ppm). This provides support that the results are representative.

48.2.3 Mercury

A total of two mercury thermostat switches were observed in the building. One was on the south wall of Room 104, and the other was on the north wall of Room 109. Fluorescent lamps are located in the basement of the building and are expected to contain small quantities of mercury vapour.

Discussions with the maintenance staff revealed that there is no equipment containing significant quantities of mercury.

48.2.4 Silica

Silica may potentially be present in the concrete and concrete block walls in the basement of the building.

48.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

Table 48.2 Summary of Lead Paint Survey, Building WW36

Sample ID	Room Number	Location and Description	Paint Colour	Condition ¹	Layers Noted ²	Lead Content (ppm)	Estimated Quantity (m ²)
<i>First Floor</i>							
WW36-U7(108)-WP1	108	Paint from the ceiling of the room	White	Good	1	<20	-
WW36-U7(109)-WP1	109	Paint from the interior north wall	Purple	Good	1	<20	-
WW36-U8(B02)-CP1	B02	Paint from the ceiling of the room	White	Fair (peeling)	1	<20	-
WW36-U8(B02)-CP1 Duplicate	B02	Paint from the ceiling of the room	White	Fair (peeling)	1	<20	-

Notes:

¹ Condition is rated as good, fair or poor with peeling and/or flaking

² Layers of paint are noted visually and can only be observed if the layers are different colours

Bold Exceeds the Federal Hazardous Products Act (1976) limit of 5,000 ppm

WW36-U8(B02)-CP1 Duplicate is a laboratory duplicate of WW36-U8(B02)-CP1

48.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Six fluorescent light ballasts are located throughout the basement of the building. Due to the age of the building (1994), these ballasts are expected to not contain PCBs.

No other potential sources of PCBs, such as transformers, were observed in this building.

48.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, two domestic refrigerators and two exterior air conditioning units were identified in this building. All these pieces of equipment are listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives. The refrigerators both contain R-134a, while the air conditioners both contain R-22 refrigerant. Both refrigerants are considered to be ODSs. The specification information on the equipment is summarized as follows:

- Outside Visiting Unit #7 – Unitary Products (central air conditioner), Model No. HABAF018SA, Serial No. EAEP004127, 1.52 kilograms of R-22;
- Outside Visiting Unit #8 – Unitary Products (central air conditioner), Model No. HABAF018SA, Serial No. EAEP000194, 1.52 kilograms of R-22;
- Unit #7, Room 108 (kitchen/dining room) – Moffat, MRFW1816WT1, Serial No. ZR327164V, 0.99 kilograms of R-134a; and,
- Unit #8, Room 102 (kitchen/dining room) – Moffat, MRFW1816WT1, Serial No. ZR327170V, 0.99 kilograms of R-134a.

48.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

48.2.9 Fuel, Oil, and/or Waste Oil Storage

There was no fuel, oil, or waste oil stored in this building.

48.2.10 Chemical Storage

In Unit 7, there five bottles of cleaning compounds (e.g. Dustbane Vangard 256, Lemon Furniture Polish 2000) stored in Room 110. There was no MSDS information for these chemicals located in the building.

48.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

48.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

49. WW37 – GUARD CONTROL POST

49.1 Building Description

This building was constructed in 1997 and contains one floor. The annotated floor plan (Figure WW37-1) showing the approximate building layout, dimensions and sampling locations is contained in Appendix 49. The location of this building relative to the others in the Warkworth Institution is shown on the overall site plan included as Figure 1-2 in Section 1 of this report.

49.2 Survey Findings

On February 10, 2005, XCG conducted a DSHMS on Building WW37. The results of the DSHMS are presented in the subsections of Section 49.2. Recommendations for mitigative measures and construction and removal procedures for the identified designated substances and hazardous materials in this building, and the facility as a whole, are presented in Section 50. The certificates of analyses for asbestos testing are included in Appendix 49. Only photographs of areas requiring immediate mitigation and photographs depicting common areas of concern are provided in this report (see Appendix 49).

49.2.1 Asbestos-Containing Materials (ACMs)

One sample was collected from the building for bulk asbestos analysis using the PLM method and one floor tile was tested for asbestos using the TEM method. The results are summarized in Table 49.1. The sample identification, floor number, room number, material sampled, friability, condition, accessibility, recommended action, asbestos content and estimated quantity (only for ACMs) have been included in this table. The annotated building floor plan in Appendix 49 shows the approximate sampling locations and areal or linear extent of asbestos (if present).

No ACMs were identified in this building during the current survey.

Table 49.1 Summary of Asbestos Survey, Building WW37

Sample ID	Room Number	Materials	Friability ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content ⁵	Estimated Quantity
<i>First Floor</i>								
WW37-101-FT1	101	Vinyl floor tile, blue coloured, 12"x12"	Non-friable	Good	A	None	ND	-
WW37-101-CT1	101	Ceiling tile, homogeneous, beige, compressed fibrous material	Friable	Good	C (exposed)	None	ND	-

Notes:

1 Friability is assessed as friable or non-friable

2 Condition is rated as good, fair or poor

3 Accessibility is A, B, C (exposed), C (concealed), or D. See Section 2.4.1 for details

4 Action is 1, 2, 3, 4, 5, 6, or 7. See Section 2.4.1 for details.

5 Asbestos Content is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained

ND None detected (<0.5%)

49.2.2 Lead-Containing Materials

No paint samples were taken from the building as all painted surfaces were in good condition. Destructive testing would have been required to obtain a sample. As requested in the TOR, destructive sampling was not conducted. Due to the age of the building (1997), lead-based paint is not expected to exist in this building. No other lead-containing materials were identified in this building during the current survey.

49.2.3 Mercury

Fluorescent lamps are located throughout this building and are expected to contain small quantities of mercury vapour.

Discussions with the maintenance staff revealed that there is no equipment containing significant quantities of mercury.

49.2.4 Silica

Silica-containing concrete and concrete blocks were observed throughout the interior and exterior of the building during the current survey.

49.2.5 Other Designated Substances

None of the following designated substances were noted within the building during the time of the current survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

49.2.6 Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. Most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution.

Three fluorescent light ballasts are located in both rooms of the building. Due to the age of the building (1997), these ballasts are expected to not contain PCBs.

No other potential sources of PCBs, such as transformers, were observed in this building.

49.2.7 Ozone-Depleting Substances (ODSs)

During the 2005 DSHMS, one small bar refrigerator was identified in this building. This piece of equipment was not listed in the 1999 Halocarbon Inventory for Warkworth Institution, supplied to XCG by the on-site CSC representatives. Information regarding the refrigerant in this piece of equipment could not be found.

49.2.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this building during the current survey.

49.2.9 Fuel, Oil, and/or Waste Oil Storage

There was no fuel, oil, or waste oil stored in this building.

49.2.10 Chemical Storage

Chemicals in the form of cleaning compounds (glass cleaner) and insect killer were stored in Room 102 of this building. There was no hazardous materials inventory or MSDS information accompanying these chemicals.

49.2.11 Radioactive Materials

No radioactive materials were observed in this building during the current survey.

49.2.12 Mould

XCG did not observe any water damage, or visual or olfactory evidence of mould growth in this building.

50. CONCLUSIONS AND RECOMMENDATIONS

The designated substances and hazardous materials survey carried out at the Warkworth Institution located in Northumberland County, south of Campbellford, Ontario, identified the presence of a number of designated substances. Only a few items require corrective or mitigative action.

The designated substances and hazardous materials identified and mitigative measures required, or other recommended actions, plus Class D cost estimates (excluding GST) are briefly discussed below for each item separately.

Asbestos

Asbestos in the form of insulating pipe straights and elbows, and vinyl floor tiles were identified in several buildings. XCG based its recommendations on the Action Matrix outlined in the PWGSC document entitled *DM Directive 057- Asbestos Management* (1997), as adopted by the Treasury Board. The recommended actions are based on the condition and accessibility of the material.

In general, most of asbestos-containing materials (ACMs) were in good condition and had an access classification of “A”, which are areas of the building within reach (from floor level) of all building users. Most of the items in this category consisted of vinyl floor tiles. In accordance with DM Directive 057, the recommendation for non-friable ACMs in good condition (i.e. vinyl floor tiles) is Action 7, which is to conduct routine surveillance of the ACMs. Other ACMs in good condition with Access A consist of pipe elbow insulation, but these are minor compared to the area of asbestos-containing vinyl floor tiles. The recommendation for these ACMs is Action 5/7. Action 5 is proactive removal of ACMs. If this is not conducted, then Action 7 is required. The recommendation for ACMs in good condition with Access A is to develop and implement an asbestos management and monitoring plan that conforms to the requirements of Ontario Regulation 838 (amended to 104/04). The buildings that would be applicable to the Action 7 recommendation include:

- WA01 – Vinyl floor tiles in Rooms 110, 117, 122, 123, and 124;
- WA04 – Vinyl floor tiles in Rooms 105, 107, and 115. Ceiling tiles in Room 117 and insulation on pipe elbows in Room M03;
- WA05 – Insulation on pipe elbows in Room 101 and vinyl floor tiles in Room 107;
- WW03 – Vinyl floor tiles in Rooms 101, 127, and 128. Insulation on pipe elbows in Room 130;
- WW05 – Insulation on pipe elbows and Ts in Room 109;
- WW06 – Vinyl floor tiles in Room 115. Insulation on pipe elbows in Room 114;
- WW07 – Vinyl floor tiles in Rooms 120, 121, 126, 125, 135, and 144. Insulation on pipe elbows in Room 139;
- WW08 – Vinyl floor tiles in cells;
- WW09 – Vinyl floor tiles in cells;
- WW10 – Vinyl floor tiles in cells and small area on second floor hallway (B21);

- WW11 – Vinyl floor tiles in cells, storage rooms (#18 in each wing), and corridors (#21 in each wing);
- WW12 – Vinyl floor tiles in Rooms 113, 125, and B1;
- WW13 – Vinyl floor tiles in Room 144;
- WW14 – Vinyl floor tiles in Rooms 101 and 107;
- WW15 – Vinyl floor tiles in Rooms 101 and 103. Insulation on pipe run in Room 114;
- WW16 – Vinyl floor tiles in Room 106. Insulation on pipe elbows in Room 201;
- WW18 – Vinyl floor tiles in Rooms 115, 119, 134, 135, 139, 207, 211, 212, 213, and 214;
- WW19 – Vinyl floor tiles in Rooms 201 and 202. Insulation on pipe elbows in Rooms 133 and 204;
- WW22 – Vinyl floor tiles in Room 105;
- WW24 – Vinyl floor tiles in Room 101;
- WW26 – Vinyl floor tiles in Rooms 201, 202, 203, 204, and 206; and,
- WW27 – Vinyl floor tiles in Room 108.

The management program would include the following:

- Appoint an asbestos co-ordinator who will maintain a copy of this report on the premises as a record of the locations of friable asbestos;
- Advise workers and outside contractors who may disturb the ACMs of the presence and type of asbestos;
- Provide asbestos training to any employee who may disturb the asbestos or work in close proximity to it;
- Maintain asbestos reports on every worker who, at a minimum, must work within the ceiling space or may actively disturb any friable asbestos; and
- Monitor the condition of all friable ACM in the buildings, and take appropriate action should the condition of any of these materials deteriorate.

The cost to develop the asbestos management and monitoring plan is approximately \$8,000. The program would likely be implemented internally by a Warkworth Institution site staff member. Therefore, costs have not been included for the actual implementation of the plan.

There were also a few areas that require mitigative action based on the DM Directive 057 matrix. Average costs per unit used in deriving this cost estimate are as follows:

- Type 2 asbestos material repair — \$25/pipe elbow or metre of run
minor (tape/seal)
- Type 2 asbestos material removal \$35/elbow or metre of run
- Type 3 asbestos removal \$45/pipe elbow or metre of pipe run
- Minimum charge (for small quantity work) \$2,500 flat rate

The above unit cost estimates are based on typical unit rates for a qualified contractor to perform this work. Allowances for engineering services which include coordination, supervision, and formal reporting are not included.

As shown on Table 50.1, 7 buildings have been identified as requiring mitigative measures (Actions 3, 5, or 6) for asbestos for an estimated total cost of \$17,500.

Table 50.1 Summary of Asbestos Mitigative Measures and Class D Cost Estimates

Building No. and Name	Room	Elbows (No.)	Runs (m)	Action	Mitigation Type (1,2,3)	Unit Cost	Total Cost
WA01 – Finance and Personnel Building	104	16	20	6/5	2	\$25	\$2,500*
WA04 – General Stores Building	108	4	-	5/6	2	\$35	\$2,500*
WW15 – S.I.S. Building	102	8	-	6	2	\$25	\$2,500*
WW07 – Hospital Building	139	33	-	3	2	\$35	\$2,500*
WW09 – Accommodation Building (Unit 1)	102	5-10	-	6	2	\$25	\$2,500*
WW12 – Inmate Canteen / Hobby Craft Building	209	20-30	-	3	2	\$35	\$2,500*
WW18 – Industrial Shops Building	146	-	6.5	3	2	\$35	\$228
	201	15-30	1.5	6/5	2	\$25	788
Total for Building WW18							\$2,500*
Total Estimated Mitigation Cost							\$17,500

Notes:

* - Minimum contractor charge for small quantity work

Lead

Lead-based paint was detected in several buildings. The condition of these lead-based paints ranged from good to fair. There is no regulatory requirement to remove lead-based paint; however, renovations or demolition, and disposal of materials containing this paint should be conducted according to the applicable regulations. All lead-based paint repair work should be managed in accordance with Regulation 843 (amended to O. Reg. 109/04). Table 50.2 provides a summary of areas containing lead-based paint and Class D cost estimates in the event that renovation or demolition work is conducted.

There are various methods to address the lead-based paint if renovations are to be conducted (e.g. repainting the wall), including scraping, power washing, and sand blasting. XCG assumed that the scraping method would be used and based the estimates on a unit rate of \$65/m². It is assumed that any lead abatement work would be conducted separately for each building (i.e. as required) and a contractor would charge a minimum of \$2,000 for a small quantity project.

Table 50.2 Summary of Lead-Based Paint Mitigative Measures and Class D Cost Estimates

Building No. and Name	Room	Location and Description	Condition	Lead Content (ppm)	Estimated Quantity (m ²)	Unit Cost (/ m ²)	Total Cost
WA01 – Finance and Personnel Building	114	Lime green paint on wall	Good	8,203	36	\$65	\$2,340
WA04 – General Stores Building	101	Bright yellow paint on garage door	Good	9,044	40	\$65	\$2,600
WA05 – Central Heating Plant	109	Red door paint	Good	15,792	3	\$65	\$195
	111	Grey-brown wall paint	Poor	10,951	61	\$65	\$3,965
Total for Building WA05							\$4,160
WA07 – Inflammable Stores Building	101	Yellow door trim paint	Fair	6,258	8	\$65	\$2,000*
WA08 – Fire Hall	101	Blue door paint from mock cells	Good	10,926	6	\$65	\$2,000*
WW03 – Administrative Building	102	Green door and wall paint on hall side	Good	9,775	10	\$65	\$650
	130	Orange door paint	Good	55,693	4	\$65	\$260
Total for Building WW03							\$2,000*
WW06 – Segregation Building	101, 116	White wall paint on upper half of corridor	Good	7,006	197	\$65	\$12,805
	116	Yellow door trim	Good	7,354	4	\$65	260
Total for Building WW06							\$13,065
WW08 – Accommodation Building (Unit 4)	A19	Mocha wall paint on interior north wall	Good	13,362	7.5	\$65	\$2,000
WW09 – Accommodation Building (Unit 1)	H109	Purple wall paint	Good	5,128	67	\$65	\$4,355
WW10 – Accommodation Building (Unit 2)	H109	Brown door trim	Good	6,787	16	\$65	\$2,000
WW11 – Accommodation Building (Unit 3) (104, 105, 106, B, D, F ranges, H103)	106 actual sample	White wall and ceiling paint	Good	5,055	403	\$65	\$26,195
	G106	Dark blue	Good	5,254	63	\$65	\$4,095

Table 50.2 Summary of Lead-Based Paint Mitigative Measures and Class D Cost Estimates

Building No. and Name	Room	Location and Description	Condition	Lead Content (ppm)	Estimated Quantity (m ²)	Unit Cost (/ m ²)	Total Cost
		wall paint					
Total for Building WW11							\$30,290
WW13 – Cafeteria Building (118, 101B, 109, 119, 121)	118 actual sample	Sky blue	Good	17,800	65	\$65	\$4,225
	141	Grey	Poor	68,583	28	\$65	\$1,820
Total for Building WW13							\$6,045
WW18 – Industrial Shops Building	106	Cream over rusty red, upper part of wall	Good	8,969	606	\$65	\$39,390
	106	Grey over red, lower part of wall	Good	12,509	225	\$65	\$14,625
	142	Light brown, lower half of wall	Fair	11,399	182	\$65	\$11,830
	144	Green wall	Good	13,060	156	\$65	\$10,140
	146	Mocha over cream on garage door	Fair	9,923	40	\$65	\$2,600
	154	Green trim on wood	Good	25,963	15	\$65	\$975
Total for Building WW18							\$79,560
WW31 – Accommodations Building (80-Man Unit)	M02	Yellow paint on doors, railings, and pipes	Poor	10,052	10	\$65	\$2,000
Total Estimated Mitigation Cost							\$154,415

Notes:

* - Minimum contractor charge for small quantity work

The above unit cost estimates are based on typical unit rates for a qualified contractor to perform this work. Allowances for engineering services which include coordination, supervision, and formal reporting are not included.

Any lead abatement work needs to be conducted in accordance with Ontario Regulation 843, amended to O. Reg. 109/04 and the Ministry of Labour document entitled “Guideline, Lead on Construction Projects,” dated September 2004.

Mercury

Small quantities of mercury are present in some of the buildings and include thermostats, thermometers, fluorescent light bulbs, and high intensity discharge

(HID) lamps. There is no regulatory requirement to remove mercury. As such, there are no recommendations for mitigative measures. However, if the mercury-containing thermostats, fluorescent lights, and/or HIDs are to be removed, they must be handled and disposed of in accordance with Ontario Regulation 844/90 (amended to O. Reg. 110/04) and Ontario Regulation 347 (amended to O. Reg. 326/03).

Silica

Silica is likely present in concrete, concrete blocks, and bricks in each building. Should renovations or demolition include the cutting or breaking of this material, appropriate precautions should take place to prevent inhalation of silica-containing dust. Any silica disturbance work needs to be conducted in accordance with Ontario Regulation 845 (amended to O. Reg. 111/04) and the Ministry of Labour document entitled "Guideline, Silica on Construction Projects," dated September 2004.

Polychlorinated Biphenyls (PCBs)

CSC site staff indicated that fluorescent light fixtures, for the most part, are considered to be non-PCB containing. CSC staff reported to XCG that most fixtures throughout the facility have been replaced within the last few years, but a few have remained from earlier times when PCBs were used in their ballast. The fixtures that have been removed have been disposed of off-site, as there are no PCB waste storage sites at the Institution. Selected light ballasts that were inspected by XCG did not contain PCBs.

There were numerous fluorescent light fixtures that XCG did not access to verify the PCB content because of the height of the ceilings. If these fixtures are taken out of service in the future, they should be checked to confirm that they in fact do not contain PCBs. If they do contain PCBs, the light ballasts should be managed in accordance with the applicable regulations, including O. Reg. 347 (amended to O. Reg. 326/03), O. Reg. 362/90, SOR91-152, SOR92/502, and the Transportation of Dangerous Goods Act and Regulations.

Ozone-Depleting Substances (ODSs)

There are numerous refrigeration and air conditioning units throughout the facility that contain ODSs. Although there is no current requirement to remove ODSs from active units, any repair, maintenance or decommissioning of equipment containing halocarbons must be performed in accordance with the Federal Halocarbon Regulations and Ontario Regulation 189/04 (amended to O. Reg. 238/01).

Urea Formaldehyde Foam Insulation

No UFFI was identified in any of the buildings during the current survey.

Fuel, Oil and Waste Oil Storage

The facility has four aboveground storage tanks and four underground storage tanks containing gasoline, diesel, and fuel oil. Aboveground storage tanks 460-05 and 460-06 should be equipped with emergency spill kits and fire extinguishers should be provided nearby. This would cost approximately \$500.

Several jerry cans of fuel observed throughout the property should be affixed with a property Workplace Label indicating their contents. In addition, they should be

provided with secondary containment when they are stored to contain any potential leaks. This would cost approximately \$500.

Two waste oil containers and some small containers of oil that appeared to be no longer used should be disposed of off-site. This would cost approximately \$500.

Chemical Storage

Various chemicals are storage in numerous buildings (e.g. solvents, paints, floor strippers, etc.). An inventory of hazardous chemicals should be developed and posted at each storage area. This would cost approximately \$7,000. All decanted products should be affixed with an appropriate Workplace Hazard Label as specified by Workplace Hazardous Materials Information System (WHMIS) regulation. This would cost approximately \$500.

Material Safety Data Sheets (MSDS) information shall be placed near or in any storage areas that contain chemicals. This would cost approximately \$1,000.

Various unused chemicals, including two 205-litre drums labelled “Toxic Waste” and “Hazardous Waste” shall be disposed of off-site by a licensed hauler. This would cost approximately \$1,000.

Radioactive Materials

No radioactive materials were observed in this building during the current survey.

Mould

Water damage was observed in three of the four Private Family Duplex Units, with evidence of potential mould growth noted in two of the buildings. This water damage should be corrected and future leaks mitigated. A sampling study to determine if any and where mould growth may be occurring should be conducted. The mould investigation would cost approximately \$8,000.

APPENDIX 3
WA01 – FINANCE AND PERSONNEL BUILDING

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

AIN OF CUSTODY RECORD[QC-2(2)]

Client Name: XCG CONSULTANTS LTD
Client Address: 2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
Client Phone: 905 829 8890 Fax: 905 829 8890
Client Email: ANDREAS.KOUREMENOS@XCG.COM

Project Name: PLEASE RETURN ALL SAMPLES TO XCG
Project Address: PLEASE KEEP IN SAME ZIP CODE 8863

Project Phone: 905 829 8890 Fax: 905 829 8890

Project Email: ANDREAS.KOUREMENOS@XCG.COM

Project Address: PLEASE KEEP IN SAME ZIP CODE 8863

Project Phone: 905 829 8890 Fax: 905 829 8890

Project Email: ANDREAS.KOUREMENOS@XCG.COM

Project Address: PLEASE KEEP IN SAME ZIP CODE 8863

Project Phone: 905 829 8890 Fax: 905 829 8890

Project Email: ANDREAS.KOUREMENOS@XCG.COM

Project Address: PLEASE KEEP IN SAME ZIP CODE 8863

Project Phone: 905 829 8890 Fax: 905 829 8890

Project Email: ANDREAS.KOUREMENOS@XCG.COM

Project Address: PLEASE KEEP IN SAME ZIP CODE 8863

Project Phone: 905 829 8890 Fax: 905 829 8890

Project Email: ANDREAS.KOUREMENOS@XCG.COM

Project Address: PLEASE KEEP IN SAME ZIP CODE 8863

Project Phone: 905 829 8890 Fax: 905 829 8890

Project Email: ANDREAS.KOUREMENOS@XCG.COM

Page 1 of 2

Client P.O.#: _____
Client Project #: 3-336-126-01
Entech Quote#: AK
Sampled by: AK
Guidelines needed: _____

Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)	Preserved Yes/No	Filtered Yes/No	Specify details if SDWA Le Reg. 170/03 applies	Analysis Required (TEM)	Analysis Required (PCM)	Temp °C	Containers	Lab Number	Entech's Bottles: YES	NO
WA01-101-1-P	Mar 1/05					PAINT	✓	✓		bag			
WA01-101-2-P						PAINT	✓	✓					
WA01-101-3-P						PAINT	✓	✓					
WA01-101-4-FT						ACM	✓	✓					
WA01-101-5-CT						ACM	✓	✓					
WA01-102-6-P						PAINT	✓	✓					
WA01-102-7-FT							✓	✓					
WA01-102-8-CT							✓	✓					
WA01-105-9-P							✓	✓					
WA01-105-10-P							✓	✓					
WA01-105-11-P							✓	✓					
WA01-107-12-P							✓	✓					
<p>Signature: <u>[Signature]</u> Date: <u>Mar 3/05</u> Time: <u>9:05 AM</u> Signature: <u>[Signature]</u> Date: <u>Mar 3/05</u> Time: <u>9:05 AM</u> Signature: <u>[Signature]</u> Date: <u>Mar 3/05</u> Time: <u>9:05 AM</u></p>													

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

See Overleaf

4.0 (21 Apr. 2004)

AIN OF CUSTODY RECORD[QC-2(2)]

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quote#: AK
Sampled by: AK
Guidelines needed:

X/G CONSULTANTS LTD
2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
ANDREAS KOURBEMENOS
905 829 8880 x 254 Fax: 905 829 8890

PLEASE RETURN ALL SAMPLES TO X/G
PLEASE KEEP IN SAME ZIPLOCK BAG

plc	Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg. 170/03 applies+	Analysis Required		Entech's Bottle: YES NO	LAB USE ONLY	
				Filtered Yes/No ***	Preserved Yes/No		Asbestos (TEM)	Asbestos (PCM)			
	WA01-107-13-CT	Mar 105	CONCRETE								
	WA01-110-14-FT		FLOOR TILE								
	WA01-114-15-P		PAINT								
	WA01-114-16-P										
	WA01-115-17-P										
	WA01-115-18-P										
	WA01-116-19-P										
	WA01-117-20-FT		FLOOR TILE								
	WA01-124-21-CT		CERAMIC TILE								
	WA01-104-22-PE		PIPE								
	WA01-104-23-PJ		PIPE JOINT								
Around Time		Relinquished to Entech (Signature)		Received by Entech (Signature)		Date		Time		Method of Shipment	
Specify to RUSH 2 DAY						MAR 13/05		9:05 AM		Drop off	
act Lab						MAR 13/05		9:05 AM		OK	

Entech Apply for 43 days Turnaround Time.
3: Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)
oil/Sediment/Groundwater/Surface Water/Effluent/Drinking Water etc. - Pla. Specify.
Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03.
Please specify if water samples are to be filtered by lab before analysis.
Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.
4.0 (21 Apr. 2004)

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Floor Tile
 Date Received: Mar 03/05
 Date Analysed:
 Date Reported: Mar 21/05

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmer Rd., Unit 24
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

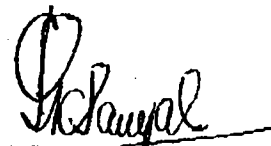
SAMPLE ID					
Entech Sample ID	48095**	48098	48105	48111	
Client Sample ID	WA01-101-4-FT	WA01-102-7-FT	WA01-110-14-FT	WA01-117-20-FT	
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted	Accepted	Accepted	Accepted	
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	Homogeneous	
Color:	Tan	White	Tan	White	
Texture:	Compact	Compact	Compact	Compact	
Description:	Tile	Tile	Tile	Tile	
ASBESTIFORM MINERALS					
% Chrysotile	Trace		>10 \leq 20	>10 \leq 20	
% Amosite					
% Crocidolite					
% Tremolite-Actinolite:	Trace				
% Anthophyllite					
% TOTAL ASBESTOS	Trace	ND	>10 \leq 20	>10 \leq 20	

** Asbestos was detected in Client Sample No. 48095 at a level <0.1%
 ND = None Detected Trace = <0.5%

Method:

Samples Analyzed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analyzed by: Pinchin Environmental Ltd.

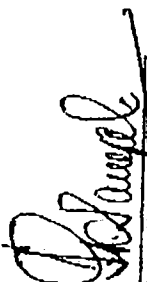


Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

ENTECH

A Division of Agri-Service Lab Inc.
8820 Kitchener Rd., Unit #4
Mississauga, ONT L5H 5M5
TEL: (905) 821-1112
FAX: (905) 821-2085

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-128-01
P.O.:
Sample Type: Tile
Date Received: Mar 03/05
Date Reported: Mar 08/05


Sam Sanyal, M. Sc. C. Chem.
Manager, Inorganic Analysis

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
48088 WA01-101-5-CT	Homogeneous, beige layered compressed, fibrous material.	None detected	Cellulose 25-50% Mineral Wool 50-75% Non-fibrous material 0.5-5%	
48089 WA01-102-8-CT	Homogeneous, beige layered compressed, fibrous material.	None detected	Cellulose 25-50% Mineral Wool 50-75% Perlite 5-10% Other non-fibrous material 0.5-5%	
48102 WA01-105-11-PJ	Homogeneous, white woven, fibrous material.	None detected	Carbon >75% fibrous material 0.5-5%	
48104 WA01-107-13-CT	Homogeneous, beige layered compressed, fibrous material.	None detected	Cellulose 50-75% Mineral Wool 20-50% Perlite 5-10% Other non-fibrous material 0.5-5%	
48112 WA01-124-21-CT	Homogeneous, beige layered compressed, fibrous material.	None detected	Cellulose 50-75% Mineral Wool 10-25% Perlite 10-25% Other non-fibrous material 0.5-5%	
48113 WA01-104-22-PE	Homogeneous, grey, soft, cementitious material.	Chrysotile 50-75%	Non-fibrous material 25-50%	
48114 WA01-104-23-PJ	Homogeneous, grey, soft, cementitious material.	Chrysotile 50-75%	Non-fibrous material 25-50%	Cotton fabric reinforcement is present on the surface of the sample.


None Detected = <0.5% (MDL)

Analyzed by: Pinchin Environmental

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 29 Aug 1995 and
USEPA Method: 8000R-93/115 dated 1 July 1993

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-120-01

Sample Type: Paint
 Date Received: March 03/06
 Date Analysed: March 03-04/06
 Date Reported: March 07/06


 Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)									
			Expected	Found	Recovery	48092	48093	48094	48097	48100	48101	48103	48108	
			Conc. (µg/g)	Conc. (µg/g)	%	WAO1-101-1- P	WAO1-101-2- P	WAO1-101-3- P	WAO1-102-8- P	WAO1-105-8- P	WAO1-105-10- P	WAO1-107-12- P	WAO1-114-12- P	
Lead in Paint Chips	20	5000	233	214	92	894	1198	88	1409	356	132	2690	8203	

Method:
 Lead in Paint Chips - ICP-AES/Digestion

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): MR, PI

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

A Division of Agri-Service Lab Inc.
 6420 Kitchener Rd., Unit #6
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-3095

Client: XCG-Oakville
 Attention: Andreas K.
 Project: J-308-126-01
 P.O.:
 Sample Type: Paint
 Date Received: March 03/05
 Date Analysed: March 03-04/05
 Date Reported: March 07/05
 Date Revised: Mar 23/05

Radhika Sanyal

Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing	CONTROL SAMPLE		SAMPLE DATA (µg/g)					
			Expected	Found	Recovery	Blank	48107	48108	48109	48110
	Detection									
	Limit (µg/g)		Conc. (µg/g)	Conc. (µg/g)	%		WA01-114-16-P	WA01-115-17-P	WA01-115-18-P	WA01-115-19-P
Lead in Paint Chips	20	5000	233	214	92	<20	1282	841	41	199

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): MR, PT

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
 Lead in Paint Chips - ICP-AES/Digestion



PHOTO 1: WA01 – Room 104 – View of the interior of the room. Note 1-litre container of oil that may no longer be in use and should be disposed of.

APPENDIX 4

WA04 – GENERAL STORES BUILDING

FLOOR PLANS

LABORATORY CERTIFICATES OF ANALYSES

SELECTED PHOTOGRAPHS

AIN OF CUSTODY RECORD[QC-2(2)]

X/C CONSULTANTS LTD
s: 2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
i: ANDREAS KOURBEMENI
905 829 8880 x 254 Fax: 905 829 8890

to (if other than the client)
PLEASE RETURN ALL SAMPLES TO XCG *
PLEASE KEEP IN SAME ZIP LOCK BAGS *

平 平 平 平 平

Client P.O.#:

Client Project #: 3-336-126-01

Entech Quote#:

Sampled by: AK

Guidelines needed:

Page (1 of 2)

Total # of Samples/ 144

Anticipated health or chemical hazard:

Work Order#:

Comments:

ILC	Client Sample I.D.	Date Sampled	Sample Matrix *	Sampling Information (W)		Specify details if SDWA Le Reg-170 /03 applies+	Analysis Required		Entech's Bottle:	YES	NO
				Filtered Yes/No ***	Preserved Yes/No		Asbestos (TEM) ✓	Lead (PbM) ✓			
	WA04-101-1-P	Mar 1/05	Paint								
	WA04-101-a-p		"								
	WA04-105-3-P		"								
	WA04-105-4-P		"								
	WA04-105-5-FI		Floor Tile								
	WA04-105-6-CT		Ceiling Tile								
	WA04-106-7-P		Paint								
	WA04-106-8-FI		f. Tile								
	WA04-106-9-CT		c. Tile								
	WA04-108-10-P		Paint								
	WA04-108-11-PR		Pile Ins.								
	WA04-108-12-PF		" "								

Signature: _____

Date: Mar 3/05 Time: 9:05 AM

Method of Shipment: Dry Pack

Condition: OK

Requisitioned to Entech (Sign): _____

Received by Entech (Sign): _____

Specify o RUSH 2 DAY

Charges Apply for <5 days Turnaround Time.

Sample Logged By:

Storage charges may then be applicable.)

E: Samples will only be retained for 30 days after reporting of results unless otherwise specified. Pls. Specify.

oil/Sediment/Groundwater/Surface Water/Effluent/Drinking Water etc. - I.D. Specifying

Please call the laboratory before analysis.

1) Please specify if water samples are to be filtered by lab before analysis.

4.0 (21 Apr. 2004)

See Overleaf

Client: XCG-Dakville
 Attention: Andreas K
 Project: 3-338-128-01
 P.O.:
 Sample Type: Floor Tile
 Date Received: Mar 03/06
 Date Analysed:
 Date Reported: Mar 22/06

ENTECH

A Division of Agri-Service Lab Inc.
 8429 Kilomet Rd., Unit #6
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID					
Entech Sample ID:	48119	48122	48127		
Client Sample ID	WA04-105-5-FT	WA04-106-8-FT	WA04-M01-13-FT		
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted	Accepted	Accepted		
Homogeneity:	Homogeneous	Homogeneous	Homogeneous		
Color:	Grey	White	Grey		
Texture:	Compact	Compact	Compact		
Description:	Tile	Tile	Tile		
ASBESTIFORM MINERALS					
% Chrysotile	>10≤20				
% Amosite					
% Crocidolite					
% Tremolite-Actinolite:		Trace	Trace		
% Anthophyllite					
% TOTAL ASBESTOS	>10≤20	Trace	Trace		

** Tremolite - Actinolite in client sample 48122 and 48127 was detected at a level <0.1%


ND = None Detected

Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
 Attention: Andreas K
 Project: J-338-128-01
 P.O.:
 Sample Type: Floor Tile
 Date Received: Mar 03/06
 Date Analysed:
 Date Reported: Mar 22/06

ENTECH

A Division of Agri-Service Lab Inc.
 8820 Kitchener Rd., Unit 26
 Mississauga, ONT L4N 6M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertains To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 kV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID					
Entech Sample ID	48145**				
Client Sample ID	WA4-117-FT1				
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted				
Homogeneity:	Homogeneous				
Color:	Grey				
Texture:	Compact				
Description:	Tile				
ASBESTIFORM MINERALS					
% Chrysotile					
% Amosite					
% Crocidolite					
% Tremolite-Actinolite	Trace				
% Anthophyllite					
% TOTAL ASBESTOS	Trace				

** Tremolite - Actinolite in client sample 48145 was detected at a level <0.1%

ND = None Detected

Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Finchin Environmental Ltd.



Sam Sanyal, M.Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-128-01
 P.O.:
 Sample Type: Ceiling Tile
 Date Received: Mar 03/05
 Date Reported: Mar 08/05

ENTECH

A Division of Agri-Service Lab Inc.
 4420 Kitchener Rd., Unit 84
 Windsor, Ont. L9M 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

Sam Santal

Sam Santal, M.Sc., C.Chem.
 Manager, Inorganic Analysis

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			COMMENTS
		ASBESTOS	OTHER		
48120 WA04-105-6-CT	Homogeneous, brown, layered, compressed, fibrous material.	None detected	Cellulose 25-50% Mineral Wool 50-75% Non-fibrous material 0.5-5%		
48123 WA04-106-9-CT	Homogeneous, brown, compressed, fibrous material.	None detected	Cellulose 25-50% Mineral Wool 25-50% Perlite 10-25% Other non-fibrous material 0.5-5%		
48125 WA04-108-11-PR	Homogeneous, off-white, layered, corrugated paper.	Chrysotile 50-75%	Cellulose 25-50% Non-fibrous material 5-10%		
48126 WA04-108-12-PE	Homogeneous, grey, soft, cementitious material.	Chrysotile 50-75%	Non-fibrous material 25-50%		Cellulose is present on the surface of this sample.
48128 WA04-103-14-PE	Homogeneous, grey, soft, cementitious material.	Chrysotile 50-75%	Non-fibrous material 25-50%		Cellulose is present on the surface of this sample.

None Detected = <0.5% (MDL)

Analysed by: *Pinchin Environmental*

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug. 1985 and
 LISBDA Method: 2000-03-15-4444-1, July 1987

A Division of Agri-Service Lab Inc.
6830 McInnes Rd., Unit #4
Mississauga, ONT L5H 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

David
Sam Sanyal, M. Sc., C. Chem.
Manager, Inorganic Analysis.

Data Pertains To Specific Sample(s) Tested


[illegible]

In compliance with codes issued by: Occupation H
 15 SEP 93 A Method: 800R-83/116 dated - July 1993.

A Division of Agri-Service Lab Inc.
 6128 Kilmat Rd., Unit #4
 Mississauga, ONT L4N 5M5
 TEL: (905) 821-1112
 FAX: (905) 821-2095

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-128-01

P.O.:
 Sample Type: Paint
 Date Received: Mar 03/05
 Date Analysed: Mar 04/05
 Date Reported: Mar 08/05


 Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)							
			Expected	Found	Recovery	Blank	48115	48116	48117	48118	48121	48124
			Conc. (µg/g)	Conc. (µg/g)	%		WA04-101-1- P	WA04-101-2- P	WA04-106-3- P	WA04-105-4- P	WA04-106-7- P	WA04-108-10
Lead in Paint Chips	20	5000	233	214	92	<20	1348	9044	2889	56	58	359

Method:
 Lead in Paint Chips - ICP-AES/Digestion

Sample Disposal: 30 Days from the Reporting Date.
 Analyst(s): MR, PT
 Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-128-01
 P.O.:
 Sample Type: Paint
 Date Received: Mar 03/05
 Date Analysed: Mar 04/05
 Date Reported: Mar 08/05

ENTECH
 A Division of Agri-Service Labs Inc.
 6420 Kitchener Rd., Unit 204
 Mississauga, ONT L4N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

S. Sanyal

Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)				
			Expected Conc. (µg/g)	Found Conc. (µg/g)	Recovery %	Blank	48147 WAA-117- WP1	47148 WAA-116- WP1	47148 WAA-116- WP1 Duplicate
Lead in Paint Chips	20	5000	233	214	92	<20	<20	<20	29.4

Sample Disposal: 30 Days from the Reporting Date.

Analysis(s): MR, P1

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
 Lead in Paint Chips - ICP-AES/Digestion

No noteworthy photographs were taken in WA04.

APPENDIX 5
WA05 – CENTRAL HEATING PLANT

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

AIN OF CUSTODY RECORD[QC-2(2)]

X/C CONSULTANTS LTD
 2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
 ANDREAS KOURMENCU
 905-829-8890
 905-829-8880 x 254
 Fax: 905-829-8890

19 (if other than the client)
PLEASE RETURN ALL SAMPLES TO XCG
PLEASE KEEP IN SAME ZIP LOCK BAGS

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Client P.O.#:

Client Project #: 3-336-126-01

Entech Quote#:

Sampled by: AK

Guidelines needed:

Total # of Samples 13

Anticipated health or chemical hazard:

Page (1) of (2)

Slc.	Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg. 170 /03 applies+	Analysis Required		Entech's Bottles YES NO	LAB USE ONLY	NO
				Filtered Yes (No)	Preserved Yes (No)		Sample	Number of Containers			
	WA05-101-1-P	mar 30/05	Paint				✓	✓			
	WA05-101-2-P		"				✓	✓			
	WA05-101-3-PE		Pipe insulation				✓	✓			
	WA05-106-4-P		Paint				✓	✓			
	WA05-106-5-FT		Floor Tile				✓	✓			
	WA05-106-6-CT		Cling Tile				✓	✓			
	WA05-107-7-P		Paint				✓	✓			
	WA05-107-8-FT		Floor Tile				✓	✓			
	WA05-107-9-FT		"				✓	✓			
	WA05-108-10-P		Paint				✓	✓			
	WA05-109-11-P		"				✓	✓			
	WA05-111-12-P		"				✓	✓			

Retinquished to Entech (Sign): *[Signature]*

Received by Entech (Sign): *[Signature]*

Approximate Time: *2:00 PM*

Lab: *KLUSH 2 DAY*

Urges Apply for <3 days Turnaround Time.	Sample Logged By:

E: Samples will only be retained for 30 days after reporting of results unless otherwise specified.

Oil/Sediment/Groundwater/Surface Water/Environment/Drinking Water etc. and of any

PLEASE CALL THE LABORATORY BEFORE SUBMITTING ANY SAMPLES WHEN YOU

Please specify if water samples are to be analyzed by method other than specified otherwise. all water samples will not be considered as Drinking Water.as defined in R170/03.

AD (21 Apr 2004)

See Overleaf

AIN OF CUSTODY RECORD[QC-2(2)]

Client P.O.#: XCG CONSULTANTS LTD
Client Project #: 3-336-126-01
Entech Quote#: 2620 BRISTOL CIRCLE SUITE 300 OAKVILLE ON L6H 6Z7
Sampled by: AK
Guidelines needed: ANDREAS KOURBEMENOU
905 829 8880 x 254 Fax: 905 829 8890

in (if other than the client)
PLEASE RETURN ALL SAMPLES TO XCG *
PLEASE KEEP IN SAME ZIPLOCK BAG *
* * *

* * *

pic	Client Sample I.D.	Date Sampled	Sample Matrix *	Sampling Information (W)		Specify details if SDWA Le Reg. 170 /03 applies+	Analysis Required	Entech's Bottles: YES <input type="radio"/> NO <input checked="" type="radio"/>	Lab Number
				Filtered Yes/No ***	Preserved Yes/No				
1	WAD5-M02-13-P	Mar 3/05	Paint	Yes	Yes		Asbestos (TEM) <input checked="" type="checkbox"/> LEAD <input checked="" type="checkbox"/>		
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Signature: [Signature]
Date: Mar 3/05
Time: 9:05 AM
Method of Shipment: Hand Delivery
Signature: [Signature]
Date: Mar 3/05
Time: 9:05 AM
Conduction: OK

Storage charges may then be applicable.)
Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)
Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03
Please specify if water samples are to be filtered by lab before analysis.
Unless specified otherwise, all water samples will not be considered as Drinking Water, as defined in R170/03.
4.0 (21 Apr. 2004)

See Overleaf

Client: XCG-Dakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Floor Tile
 Date Received: Mar 03/05
 Date Analysed:
 Date Reported: Mar 21/05

ENTECH

A Division of Agri-Service Lab Inc.
 8829 Kilmat Rd., Unit #6
 Mississauga, ONT L5N 3M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID					
Entech Sample ID	48136	48139	48140		
Client Sample ID	WA05-106-5-FT	WA05-107-8-FT	WA05-107-9-FT		
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted	Accepted	Accepted		
Homogeneity:	Homogeneous	Homogeneous	Homogeneous		
Color:	White	Tan	Tan		
Texture:	Compact	Compact	Compact		
Description:	Tile	Tile	Tile		
ASBESTIFORM MINERALS					
% Chrysotile		>10≤20	>10≤20		
% Amosite					
% Crocidolite					
% Tremolite-Actinolite					
% Anthophyllite					
% TOTAL ASBESTOS	ND	>10≤20	>10≤20		

ND = None Detected

Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client:

XCG-Oakville

Attention:

Andreas K.

Project :

3-336-128-01

P.O.:

Sample Type:

Pipe Insulation

Date Received:

Mar 03/05

Date Reported:

Mar 08/05

ENTECH

A Division of Agri-Service Lab Inc.

6820 Kitchener Rd., Unit #4

Mississauga, ONT L5N 6M3

TEL: (905) 821-1112

FAX: (905) 821-2095



Sam Sanyal, M. Sc., C. Chem.

Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			COMMENTS
		ASBESTOS	OTHER		
48134 WA05-101-3-PE	Homogeneous, grey, soft, cementitious material	Chrysotile 50-75%	Non-fibrous material	25-50%	
48137 WA05-108-6-CT	Homogeneous, beige, layered, compressed, fibrous material.	None detected	Cellulose Mineral Wool Non-fibrous material	25-50% 50-75% 0.5-5%	

None Detected = <0.5% (MDL)

Analysed by: *Pinchin Environmental*


In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and

USEPA Method: 800/R-93/116 dated - July 1993.

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-128-01
 P.O.:
 Sample Type: Paint
 Date Received: Mar 03/05
 Date Analysed: Mar 04/05
 Date Reported: Mar 08/05

ENTECH

A Division of Agri-Service Lab Inc.
 6428 Kilmart Rd., Unit 204
 Mississauga, ONT L4M 3M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095


 Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)									
			Expected	Found	Recovery	48132	48133	48135	48138	48141	48142	48143	48144	
			Conc. (µg/g)	Conc. (µg/g)	%	WA05-101-1- P	WA05-101-2- P	WA05-105-4- P	WA05-107-7- P	WA05-108-10- P	WA05-108-11- P	WA05-111-12- P	WA05-102-10- P	
Lead in Paint Chips	20	5000	233	214	92	2210	31.3	1650	64	1757	15792	10951	3620	

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): MR, PY

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
 Lead in Paint Chips - ICP-AES/Digestion

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-126-01
 P.O.:
 Sample Type: Paint
 Date Received: Mar 03/06
 Date Analysed: Mar 04/06
 Date Reported: Mar 08/06

ENTECH

A Division of Agri-Service Lab Inc.
 5420 Kilmer Rd., Unit #4
 Mississauga, ONT L4W 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2035

S. Sanyal

Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)					
			Expected Conc. (µg/g)	Found Conc. (µg/g)	Recovery %	Blank	48144	WA05-MR2-10 P Duplicates		
Lead in Paint Chips	20	5000	233	214	92	<20	2428			

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): MR, PY

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
 Lead in Paint Chips - ICP-AES/Digestion



PHOTO 1: WA05 – Room 101 – Potential lead-containing automobile batteries observed, awaiting disposal.

APPENDIX 6
WA06 – MAINTENANCE STORAGE BUILDING

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

AIN OF CUSTODY RECORD[QC-2(2)]

X/C CONSULTANTS LTD
2620 BRISTOL CIRCLE SUITE 300, OAKVILLE, ON, L6H 6Z7
ANDREAS KOURNEMENI
905 829 8890 Fax: 905 829 8890
905 829 8880 x 254

8 (if other than the client)
PLEASE RETURN ALL SAMPLES TO XCG
PLEASE KEEP IN SAME ZIPLOCK BAG

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Client P.O.#:

Client Project #: 3-336-126-01

Entech Quote#:

Sampled by: AK

Guidelines needed:

Total # of Samples:

Anticipated health or chemical hazard:

[illegible]

<p>Targets Apply for <5 days Turnaround Time.</p>	<p>Sample Logged By:</p>
---	---------------------------------

Storage charges may then be applicable.)

11: Samples will only be retained for 30 days after reporting or request unless specifically requested.

Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03

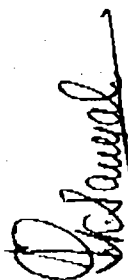
Please specify if water samples are to be filtered by lab before analysis.

Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.

0 (21 Apr. 2004)

See Overleaf.

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-128-01
P.O.:
Sample Type: Paint
Date Received: March 02/05
Date Analysed: March 03-04/05
Date Reported: March 04/05



Sam Sanyal, M.Sc., C. Chem.
Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE			SAMPLE DATA (µg/g)							
			Expected	Found	Recovery	Blank	48008	48010	48011	48012	48013	48014	48013
			Conc. (µg/g)	Conc. (µg/g)	%		WAG-102-FP1	WAG-102-WP1	WAG-103-TR1	WAG-102-TR1	WAG-802-WP1	WAG-STO1-FP1	WAG-802-WP1 Duplicate
Lead in Paint Chips	20	5000	233	214	92	<20	<20	159	2440	1512	434	131	522

Sample Disposal: 30 Days from the Reporting Date

Analysis(s): MR, PI

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method: Lead in Paint Chips - ICP-AES/Digestion

No noteworthy photographs were taken in WA06.

APPENDIX 7
WA07 – INFLAMMABLE STORES BUILDING

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

CHAIN OF CUSTODY RECORD[QC-2(2)]

X/C CONSULTANTS LTD
 2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
 ANDREAS KOURBEMENI
 905 829 8890
 905 829 8880 x 254
 Fax:

PLEASE RETURN ALL SAMPLES TO XCG
PLEASE KEEP IN SAME ZIPLOCK BAG

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Client P.O.#:

Client Project #:

Entech Quote#:

Sampled by:

Guidelines needed:

Total # of Samples:

Anticipated health or chemical hazard:

Page () of ()

Work Order#:

Comments:[illegible]

Turnaround Time: Samples Logged By: _____
Turnaround Time: _____

oil/Sediment/Groundwater/Surface Water/ETMew/Drinking Water etc - Pla. Specify.

oil/Sediment/Groundwater/Soil/Surface Water/Drinking Water and Air Sampling
Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03

1) Please specify if water samples are to be filtered by lab before analysis.

Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.

4.0 (21 Apr. 2004)

See Overleaf

A Division of Agri-Service Lab Inc.
 5429 Kilmont Rd., Unit #4
 Mississauga, ONT L5H 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-123-01
 P.O.:
 Sample Type: Paint
 Date Received: Mar 03/05
 Date Analysed: Mar 04/05
 Date Reported: Mar 08/05



Sam Samal, M.Sc., C. Chem
 Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)			
			Expected	Found	Recovery	Blank	48129	48130
			Cone. (µg/g)	Cone. (µg/g)	%		WA07-101-1- P	WA07-101-2- P
Lead in Paint Chips	20	5000	233	214	92	<20	2200	6258
								55

Method:
 Lead in Paint Chips - ICP-AES/Digestion

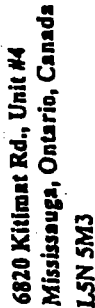
Sample Disposal: 30 Days from the Reporting Date
 Analyt(s): MR, PI
 Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).



PHOTO 1: WA07 – Room 101 – View of some of the chemicals stored in this building. Note also the yellow door to the room, which was found to contain a lead concentration of 6,258 ppm.

APPENDIX 8
WA08 – FIRE HALL

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS



Page () of ()

Total # of Samples:

Client P.O.#:

Anticipated health or chemical hazard:

Client Project #: 3-336-126-01

Entech Quote#:

Sampled by: AK

Guidelines needed:

PLEASE RETURN ALL SAMPLES TO XCG
PLEASE KEEP IN SAME ZIPLOCK BAG

[illegible]

Charges Apply for <3 days Turnaround Time.	Sample Logged By:
<p>Charges apply for <3 days Turnaround Time. (Storage charges may then be applicable.)</p>	

Samples will only be retained for 30 days after reporting of results unless specifically requested by customer.
 W/Sediment/Groundwater/Surface Water/Emuent/Drinking Water etc. - Pls. Specify.

Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03


Please specify if water samples are to be filtered by lab before analysis.

Unless specified otherwise, all water samples will not be considered as Drinking Water, as defined in R170/03.

0 (21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
Attention: Address K.
Project: 3-336-128-01
P.O.:
Sample Type: Paint
Date Received: Mar 03/05
Date Analysed: Mar 04/05
Date Reported: Mar 08/05


Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)				
			Expected	Found	Recovery	Blank	48151	48152	48153
			Conc. (µg/g)	Conc. (µg/g)	%		WAS-101- WP1	WAS-101-DP1	WAS-101-TR1 Duplicate
Lead in Paint Chips	20	5000	233	214	92	<20	1115	10928	59.8
									70

Method:
Lead in Paint Chips - ICP-AES/Digestion

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): MR, PT

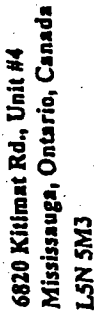
Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).



PHOTO 1: WA08 – Room 101 – The blue door paint on the mock cells were found to contain a lead concentration of 10,926 ppm.

APPENDIX 9
WA09 – SEWAGE DISPOSAL BUILDING

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS



TEL: (905) 821-1112
FAX: (905) 821-2095

Work Order#:

Comments:

Page () of ()

IN OF CUSTODY RECORD[QC-2(2)]

X/C CONSULTANTS LTD
2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
ANDREAS KOURMENCU
905 829 8890 Fax: 905 829 8890

(if other than the client)
 PLEASE RETURN ALL SAMPLES TO XCG *
 PLEASE KEEP IN SAME ZIP LOCK BAGS *

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Total # of Samples:

Client P.O.#:

Client Project #: 3-336-126-01

Entech Quote#:

Sampled by:

Guidelines needed:

Anticipated health or chemical hazard:

Analysis Required

[illegible]

Samples Apply for <5 days Turnaround Time. Samples Logged By:	(If the requested by client) (Storage charges may then be applicable.)
--	--

Samples will only be retained for 30 days after reporting of results unless specifically requested.

/Sediment/Groundwater/Surface Water/Effluent/Drinking Water etc. - as specy.

do not call the laboratory before analysis.

Please specify if water samples are to be filtered by lab before analysis.

20 (21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Floor Tile
 Date Received: Feb 28/05
 Date Analysed: -
 Date Reported: Mar 21/05

ENTECH

A Division of Agri-Service Lab Inc.
 6420 Kilomet Rd., Unit #4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2085

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID					
Entech Sample ID	47980**				
Client Sample ID	WA09-104-FT1				
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted				
Homogeneity:	Homogenous				
Color:	Grey				
Texture:	Compact				
Description:	Tile				
ASBESTIFORM MINERALS					
% Chrysotile					
% Amosite					
% Crocidolite					
% Tremolite-Actinolite:	Trace				
% Anthophyllite					
% TOTAL ASBESTOS	Trace				

** Asbestos was detected in Client Sample NO. 47980 at a level <0.1%

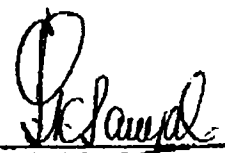
ND = None Detected

Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: *Pinchin Environmental Ltd.*


 Sam Sanyal, M. Sc., CChem.
 Manager, Inorganic Analysis.

A Division of Agri-Service Lab Inc.
6428 Kitchener Rd., Unit #4
Mississauga, ONT L4N 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

[Signature]
Sam Samyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Certificate of Analysis

eluticals
that pertain To Specific Sample(s) Tested

[illegible]

Method:
Lead in Paint Chips - ICP-AES/Digestion

Address: MR, R

Note: * - Department of Housing and Urban Development

No noteworthy photographs were taken in WA09.

APPENDIX 10
WA16 – CLARIFICATION BUILDING

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS



6820 Kitimat Rd., Unit #4
Mississauga, Ontario, Canada
LSN 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

Work Order:
Comments:

Page () of ()

IN OF CUSTODY RECORD[QC-2(2)]

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Anticipated health or chemical hazard:
Entech Quote#: AK
Sampled by: AK
Guidelines needed:

Total # of Samples:

Anticipated health or chemical hazard:

X/G CONSULTANTS LTD
2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
ANDREAS KOURMENCU
905 829 8880 x254 Fax: 905 829 8890

(if other than the client)
PLEASE RETURN ALL SAMPLES TO X/G
PLEASE KEEP IN SAME ZIP LOCK BAGS

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Analysis Required

Asbestos (TEM)

Asbestos (PCM)

LEAD

Entech's Bottles: YES

NO

LAB USE ONLY

Sample

Temp °C

Containers

Lab Number

Retinquinqued to Entech

(sign)

Received by Entech

(sign)

Specimen Logged By

Specimen will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)

Sediment/Groundwater/Surface Water/Emulsion/Drinking Water etc. - Pls. Specify.

Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03


Please specify if water samples are to be filtered by lab before analysis.

Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.

0 (21 Apr. 2004)

See Overleaf

Int: XCG-Oakville
Action: Andreas K.
Ref: 3-338-128-01
Sample Type: Paint
Date Received: March 02/05
Date Analysed: March 03-04/05
Date Reported: March 04/05


Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)			
			Expected	Found	Recovery	Blank	47979	47979
	Limit (µg/g)		Conc. (µg/g)	Conc. (µg/g)	%		WA18-101- WP1	WA18-101- WP1 Duplicate
In Paint Chips	20	5000			-	<20	<20	<20

Sample Deposition: 30 Days from the Reporting Date.
Analyst(s): MR, PY

* - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
Lead in Paint Chips - ICP-AES/Digestion



PHOTO 1: WA16 – Room 101 – View of the interior of the building.
This building had previous mould issues that have been resolved for the time being. Windows and louvers are due to be installed in the summer of 2005.

APPENDIX 11
WA18 – RIFLE RANGE

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

No noteworthy photographs were taken in WA18.

APPENDIX 12
WA19 – AGGREGATE BUILDING

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

No noteworthy photographs were taken in WA19.

***APPENDIX 13
WGP12 – GUARD POST***

***FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS***

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Floor Tile
 Date Received: Feb 28/06
 Date Analysed:
 Date Reported: Mar 21/06

ENTECH

A Division of Agri-Service Lab Inc.
 8820 Kilmat Rd., Unit #4
 Mississauga, ONT L5M 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 kvV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID					
Entech Sample ID	47991 WGP12-201- FT1				
Client Sample ID					
MACROSCOPIC EXAMINATION					
Accepted/Rejected	Accepted				
Homogeneity:	Homogeneous				
Color:	Brown				
Texture:	Compact				
Description:	Tile				
ASBESTIFORM MINERALS					
% Chrysotile	>10520				
% Amosite					
% Crocidolite					
% Tremolite-Actinolite:					
% Anthophyllite					
% TOTAL ASBESTOS	>10520				

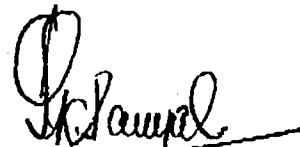
ND = None Detected

Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.

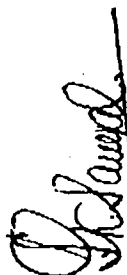


Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

ENTECH

A Division of Agri-Service Lab Inc.
 6720 Kilmart Rd., Unit #4
 Mississauga, ONT L4W 3M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-338-128-01
 P.O.:
 Sample Type: Paint
 Date Received: March 02/05
 Date Analysed: March 03-04/05
 Date Reported: March 04/05



Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)						
			Expected	Found	Recovery	Blank	47988	47989	47990	47992	47993
			Conc. (µg/g)	Conc. (µg/g)	%		WGP12-201- CP1	WGP12-201- TR1	WGP12-201- DP1	WGP12-102- WP1	WGP12-102- DP1
Lead in Paint Chips	20	5000	233	214	92	<20	175	1021	217	89	82

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): MR, PJ

* - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
 Lead in Paint Chips - ICP-AES/Digestion

No noteworthy photographs were taken in WGP12.

APPENDIX 14
WGP13 – GUARD POST

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

6820 Kitimat Rd., Unit #4
Mississauga, Ontario, Canada
LSN 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

H

IN OF CUSTODY RECORD[QC-2(2)]

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quote#: AK
Sampled by: AK
Guidelines needed: AK

Client Name: XCG CONSULTANTS LTD
Address: 2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
Phone: 905 829 8890 Fax: 905 829 8890

(if other than the client)
PLEASE RETURN ALL SAMPLES TO XCG
PLEASE KEEP IN SAME ZIPLOCK BAG

* * * * *

Analysis Required

Analysis (TEM) Agar Leab

Analysis (TEM) Agar Leab

Analysis (TEM) Agar Leab

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Analysis (TEM) Agar Leab

Analysis (TEM) Agar Leab

Analysis (TEM) Agar Leab

Total # of Samples:

Anticipated health or chemical hazard:

Entech's Bottles: YES NO

Number of Containers

Lab Number

Temp °C

Temp °C

Temp °C

Temp °C

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Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-338-128-01
 P.O.:
 Sample Type: Floor Tile
 Date Received: Feb 28/05
 Date Analysed: -
 Date Reported: Mar 21/05

ENTECH

A Division of Agri-Service Lab Inc.
 6828 Kilmat Rd., Unit #4
 Mississauga, ONT L5N 3W3
 TEL: (905) 821-1112
 FAX: (905) 821-2085

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 eV
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID					
Entech Sample ID	47987**				
Client Sample ID	WG913-201-FT1				
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted				
Homogeneity:	Homogeneous				
Color:	White				
Texture:	Compact				
Description:	Tile				
ASBESTIFORM MINERALS					
% Chrysotile					
% Amosite					
% Crocidolite					
% Tremolite-Actinolite:	Trace				
% Anthophyllite					
% TOTAL ASBESTOS	Trace				

** Asbestos was detected in Client Sample NO. 47987 at a level <0.1%

ND = None Detected

Trace = <0.5%

Method:


Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
Analyst: Andreas K.
Project: 3-338-128-01
Sample Type: Paint
Date Received: March 02/05
Date Analysed: March 03-04/05
Date Reported: March 04/05


Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)					
			Expected	Found	Recovery	Blank	47984	47985	47986	47986
	Detection		Conc. (µg/g)	Conc. (µg/g)	%		WGP13-201- DP1	WGP13-201- TR1	WGP13-201- TD1	WGP13-201- TD1 Duplicate
Lead in Paint Chips	20	5000	233	214	92	<20	408	1501	714	758

Sample Disposal: 30 Days from the Reporting Date.
Analyst: MR. P.
Lab: Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
Lead in Paint Chips - ICP-AES/Digestion

No noteworthy photographs were taken in WGP13.

APPENDIX 15
WGP14 – GUARD POST

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

A Division of Agri-Service Lab Inc.
6320 Kilmat Rd., Unit 24
Mississauga, ONT L5N 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

Date Received:	Mar 03/05
Date Analysed:	Mar 04/05
Date Reported:	Mar 08/05

Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Data Pertain To Specific Sample(s) Tested

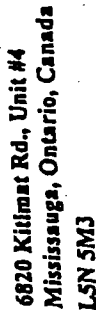
Method:
Lead in Paint Chips - ICP-AES/Digestion

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

No noteworthy photographs were taken in WGP14.

APPENDIX 16
WGP15 – GUARD POST

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS



TEL: (905) 821-1112
FAX: (905) 821-2095

Page () of ()

CHAIN OF CUSTODY RECORD[QC-2(2)]

Total # of Samples:

Client P.O.#:

Anticipated health or chemical hazard:

X/C INSTANTLY
2620 BATTLE CIRCLE NW
ALBUQUERQUE NM 87109
FAX: 905 829 8890

PLEASE RETURN ALL SAMPLES TO XCG (if other than the client)

PLEASE KEEP IN SAME ZIP CODE BAG

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[illegible]

Sample Logged By: _____

∴ Samples will only be retained for 30 days after reporting of results unless specimens are retained for other reasons.

iii/Sediment/Groundwater/Surface Water/Effluent/Drinking Water etc. - PIS. Specify.

Please call the laboratory BEFORE submitting any samples which will be analyzed.

Please specify if water samples are to be filtered by lab before analysis.

1.0 (21 Apr. 2004)

See Overleaf

Client:	XCG-Oakville
Attention:	Andreas K.
Project:	3-335-125-01
P.O.:	
Sample Type:	Paint
Date Received:	March 03/05
Date Analysed:	Mar 03-04/05
Date Reported:	Mar 07/05

Sam
Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

[illegible]

Sample Disposal: 30 Days from the Reporting Date.

Analysis: MR, PI

Note: * - Department of Housing and Urban Development, Sept. 1980 (USA).

Method:
Lead in Paint Chips - ICP-AES/Digestion

No noteworthy photographs were taken in WGP15.

APPENDIX 17
WW01 – ENTRANCE GATE

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

No noteworthy photographs were taken in WW01.

APPENDIX 18
WW02 – STAFF AND TRAINING BUILDING
FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS



6826 Kilmat Rd., Unit #4
Mississauga, Ontario, Canada
LSN 5M3

TEL: (905) 821-1112
FAX: (905) 821-1095

Appl. Service

IN OF CUSTODY RECORD[QC-2(2)]

XCG CONSULTANTS LTD
2620 BELLISIA CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
ANDREAS KOURBEMENOS
905 829 8880 x 254 Fax: 905 829 8890

(if other than the client)
PLEASE RETURN ALL SAMPLES TO XCG *
PLEASE KEEP IN SAME ZIPLOCK BAG *
* * *

Client P.O.#:

Client Project #: 3-336-126-01

Entech Quote#:

Sampled by: AK

Guidelines needed:

Total # of Samples:

Anticipated health or chemical hazard:

Page (1 of 1)

Analysis Required

Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg. 170 (03) applies	Analysis Required		Temp °C	Containers	Lab Number	Entech's Bottle: YES <input type="radio"/> NO <input checked="" type="radio"/>	LAB USE ONLY
			Filtered Yes/No ***	Preserved Yes/No		Asbestos (TBM)	Asbestos (PLM)					
W002-102-FT1	Feb 13 05	Tile				X			1 Bag	47603		
W002-106-DT1	"	"				X			"	47604		
W002-107-CT1	"	"							"	47605		
W002-132-WP1	"	Paint							"	47606		
W002-113-WP1	Feb 24 05	"				X			"	47607		
W002-113-PT1	"	Tile							"	47608		
W002-114-WP1	"	Paint				X			"	47609		
W002-113-WP2	"	"				X			"	47610		
W002-114-FP1	"	"				X			"	47611		
W002-125-WP1	"	"				X			"	47612		
W002-127-WP1	"	"				X			"	47613		
CHECK: <i>[Signature]</i>												
Date: Feb 28 05 Time: 11 AM Method at Shipment: <i>[Signature]</i>												
Date: Feb 28 05 Time: 11 AM Condition: <i>[Signature]</i>												
Date: Time: Condition:												

Get Apply for 45 days Turnaround Time.

Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)

(Sediment/Groundwater/Surface Water/Emulsion/Drinking Water etc. - Pls. Specify)

Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03.

Please specify if water samples are to be filtered by lab before analysis.

Unless specified otherwise, all water samples will not be considered as Drinking Water, as defined in R170/03.

20 (21 Apr. 2004)

See Overhead

ENTECH

A Division of Agri-Service Lab Inc.
6820 Kilmer Rd., Unit #6
Mississauga, ONT L5N 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

Client: XCG-Oakville
Attention: Andreas K
Project: 3-336-128-01
P.O.:
Sample Type: Tile
Date Received: Feb 28/05
Date Analysed: Mar 12/05
Date Reported:

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
EDXA Resolution: 171.0 eV
Accelerating Voltage: 100 keV

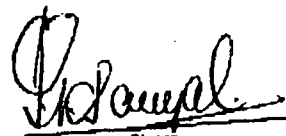
Magnification: 9,600 X
Calibration Constant: 1 cm = 1.04 μ m
Camera Constant: 29.6 mm-A

SAMPLE ID	47603	47604	47608	
Entech Sample ID	WW02-102-FT1	WW02-106-DT1	WW02-113-FT1	
Client Sample ID				
MACROSCOPIC EXAMINATION				
Accepted/Rejected	Accepted	Accepted	Accepted	
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	
Color:	Tan	Brown	Tan	
Texture:	Compact	Compact	Compact	
Description:	Tile	Tile	Tile	
ASBESTIFORM MINERALS				
% Chrysotile				
% Amosite				
% Crocidolite			Trace	
% Tremolite-Actinolite:				
% Anthophyllite			Trace	
% TOTAL ASBESTOS	ND	ND	Trace	

Tremolite-Actinolite was detected in sample No. 47608 at a level <0.1%
ND = None Detected Trace = <0.5%

Method:

Samples Analyzed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
Analyzed by: Pinchin Environmental Ltd.


Sam Sanyal, M. Sc., C. Chem.
Manager, Inorganic Analysis

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-126-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 28/05
 Date Reported: March 03/05



Sam Samyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			COMMENTS
		ASBESTOS	OTHER		
47605 WW02-107-CT1	Homogeneous, beige, layered, compressed, fibrous material.	None detected	Cellulose 50-75% Mineral Wool 25-50% Perlite 5-10% Other non-fibrous material 0.5-5%		

None Detected = <0.5% (MDL)

Analysed by: *Pinchin Environmental*

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and USEPA Method: 800/R-93/118 dated - July 1993

Client: XCG-Oakville

Attention: Andreas K.

Project: 3-336-126-01

P.O.:

Sample Type: Paint

Date Received: Feb 28/06

Date Analysed: March 01-02/06

Date Reported: March 03/06

Sam Sanyal

Sam Sanyal, M.Sc., C. Chem.
Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

SAMPLE DATA (µg/g)													
PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		Recovery %	Blank	47606 WM02-132- WP1	47607 WM02-113- WP1	47609 WM02-114- WP1	47610 WM02-113- WP2	47611 WM02-114- FP1	47612 WM02-125- WP1	47613 WM02-127- WP1
			Expected	Found									
			Conc. (µg/g)	Conc. (µg/g)									
Lead in Paint Chips	20	5000	233	229	98	<20	<20	642.9	<20	824	493	<20	477

Method:
Lead in Paint Chips - ICP-AES/Digestion

Sample Disposal: 30 Days from the Reporting Date

Analyst(s): MR, PJ

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

A Division of Agri-Service Lab Inc.
6429 KENNEDY Rd., UNIT #6
MISSISSAUGA, ONT L5N 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

Sample Type:	Paint
Date Received:	Feb 28/05
Date Analysed:	March 01-02/05
Date Reported:	March 03/05

Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Results Pertain To Specific Sample(s) Tested

[illegible]

Method:
Lead in Paint Chips - ICP-AES/Digestion

30 Days from the Reporting Date

Analyst(s): MR, PT

Note: * - Department of Housing and Urban Development, Dept. of

No noteworthy photographs were taken in WW02.

APPENDIX 19
WW03 – ADMINISTRATION BUILDING

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

TECH

6820 Kilmist Rd., Unit #4
Mississauga, Ontario, Canada
L5N 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

Enrichment

IN OF CUSTODY RECORD[QC-2(2)]

XCG CONSULTANTS LTD
2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON, L6H 6Z7
ANDREAS KOURBEMENOU
905 829 8890 FAX: 905 829 8890

if other than the client)
PLEASE RETURN ALL SAMPLES TO XCG *
PLEASE KEEP IN SAME ZIPLOCK BAG *
* * *

Page (1) of (2)

Client P.O.#:
Client Project #: 3-336-126-01
Entech Quote#: AK
Sampled by: AK
Guidelines needed:
Total # of Samples: 17
Anticipated health or chemical hazard:

Analysis Required

Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg. 170/03 applies	Analysis Required		Temp °C	Containers	Lab Number	Entech's Bottle: YES NO	Number of	Sample
			Filtered Yes/No	Preserved Yes/No		Asbestos (TEM)	Asbestos (PCM)						
W003-0P1	Feb 28/03	Paint					XX		1 Bag	47614	NO		
W003-101-WP1	"	"					XX		"	47615			
W003-101-FT1	"	Tile							"	47616			
W003-102-DP1	"	Paint							"	47617			
W003-109-CT1	"	Tile							"	47618			
W003-117-FT1	"	"							"	47619			
W003-124-FT1	"	"							"	47620			
W003-126-WP1	"	"							"	47621			
W003-126-FT1	"	Paint							"	47622			
W003-127-FT1	"	Tile							"	47623			
W003-127-CT1	"	"							"	47624			
W003-127-WP1	"	Paint							"	47625			
Total Time											Time: 11 AM		Method of Storage: Properly
Retained by Entech (days)											Time: 11 AM		Condition: OK
Received by Entech (days)											Time: 11 AM		Condition: OK
Sample Labelled By: Sumita											Time: 11 AM		Condition: OK
Retained for 30 days Turnaround Time: 2 days											Time: 11 AM		Condition: OK

Storage charges may then be applicable.)

Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)
Sediment/Groundwater/Surface Water/Drinking Water etc. - PLS. Specify.
Please call the Laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03.

Please specify if water samples are to be filtered by lab before analysis.

Less specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.

(21 Apr. 2004)

See Overleaf

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmat Rd., Unit #4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 28/05
 Date Analysed:
 Date Reported: Mar 12/05

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 eV
 Accelerating Voltage: 100 keV


Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID	47616	47619	47620	47621
Entech Sample ID				
Client Sample ID	WW03-101-FT1	WW03-117-FT1	WW03-124-FT1	WW03-126-FT1
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted	Accepted	Accepted	Accepted
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	Homogeneous
Color:	Brown	White	White	Grey
Texture:	Compact	Compact	Compact	Compact
Description:	Tile	Tile	Tile	Tile
ASBESTIFORM MINERALS				
% Chrysotile	≥10≤20			
% Amosite				
% Crocidolite				Trace
% Tremolite-Actinolite				
% Anthophyllite		ND	ND	Trace
% TOTAL ASBESTOS	≥10≤20	ND	ND	

ND = None Detected

Trace = <0.5%

Method:
 Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analysed by: Pinchin Environmental Ltd


 Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 28/05
 Date Analysed:
 Date Reported: Mar 12/05

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmet Rd., Unit #4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 eV
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47623	47626	47628	
Client Sample ID	WW03-127-F11	WW03-128-F11	WW03-129-L1N1	
MACROSCOPIC EXAMINATION				
Accepted/Rejected	Accepted	Accepted	Accepted	
Homogeneity	Homogeneous	Homogeneous	Homogeneous	
Color	Brown	Tan	Tan	
Texture	Compact	Compact	Compact	
Description	Tile	Tile	Tile	
ASBESTIFORM MINERALS				
% Chrysotile	≥10≤20	≥10≤20	Trace	
% Amosite				
% Crocidolite				
% Tremolite-Actinolite				
% Anthophyllite				
% TOTAL ASBESTOS	≥10≤20	≥10≤20	Trace	

Tremolite-Actinolite was detected in sample No. 47621 at a level of <0.1%
 Chrysotile was detected in sample No. 47628 at a level <0.1%

ND = None Detected Trace = <0.5%

Method:
 Samples Analyzed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analyzed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kitchener Rd., Unit B4
 Mississauga, ONT L4W 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-128-01

Title: Tile
 Sample Type: Feb 28/05
 Date Received: March 03/05
 Data Reported:



Sam Sanyal, M.Sc., C. Chem.
 Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			COMMENTS
		ASBESTOS	OTHER		
47818 WW03-109-CT1	Homogeneous, beige, layered, compressed, fibrous material.	None detected	Mineral Wool Cellulose Non-fibrous material	50-75% 25-50% 0.5-5%	
47824 WW03-127-CT1	Homogeneous, beige, layered, compressed, fibrous material.	None detected	Cellulose Mineral Wool Perlite Other non-fibrous material	50-75% 10-25% 10-25% 0.5-5%	
47828 WW03-130-PE1	Homogeneous, gray, soft, cementitious material.	Chrysotile	Non-fibrous material	50-75% 25-50%	
47830 WW03-130-PE2	Homogeneous, gray, soft, cementitious material.	Chrysotile	Non-fibrous material	50-75% 25-50%	

None Detected = <0.5% (MDL)

Analysed by: Pinchin Environmental

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and USEPA Method: 600/R-93/116 dated - July 1993.

ENTECH

A Division of Agri-Service Lab Inc.
6820 Kilmer Rd., Unit #4
Mississauga, ONT L5N 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-126-01
S.O.:
Sample Type: Paint
Date Received: Feb 28/05
Date Analysed: March 01-02/05
Date Reported: March 03/05
Date Revised: Mar 15/05



Sam Sanyal M.Sc., C. Chem
Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

Data Pertaining to Specific Samples/ Tests													
PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE			SAMPLE DATA (µg/g)							
			Expected Conc. (µg/g)	Found Conc. (µg/g)	Recovery %	Blank	47614 WW03-DP1	47615 WW03-101- WP1	47617 WW03-102- DP1	47622 WW03-126- WP1	47625 WW03-127- WP1	47627 WW03-130- DP1	47626 WW03-127- WP1 Duplicate
Lead in Paint Chips	20	5000	233	229	98	<20	<20	196	9775	33	<20	55893	<20

Method:
Lead in Paint Chips - ICP-AES/Digestion

Sample Disposal: 30 Days from the Reporting Date
Analysis(s): MR, PI
Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).



PHOTO 1: WW03 – Room 130 – This pipe elbow was sampled and found to contain between 50 and 75% chrysotile asbestos.

APPENDIX 20
WW04 – PROGRAMS AND SBC BUILDING

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

CHAIN OF CUSTODY RECORD[QC-2(2)]

: X/C CONSULTANTS LTD
 : 2620 BRISTOL CIRCLE SUITE 300 OAKVILLE ON L6H 6Z7
 : ANDREAS KOURGEMENOU
 : 905 829 8890
 : 905 829 8890 x 254
 : 905 829 8890
 : (if other than the client)

PLEASE RETURN ALL SAMPLES TO XCG
DIFANE VEEON IN SAVING 210.000 RAB.

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Client P.O.#:
Client Project #:
Entech Quote#:
Sampled by:
Guidelines needed:

Guidelines needed:

Analysis Required

[illegible]

<p>es Apply for <u>3</u> days Turnaround Time.</p>	<p>Sample Logged By: <u>John G</u></p>
--	--

14 Sediment/ Groundwater/ Surface Water/ Estuary/ Drinking Water etc. - Pls. Specify.

Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03

Please specify if water samples are to be filtered by lab before analysis.

Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.

0 (21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-335-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 28/05
 Date Analysed:
 Date Reported: Mar 12/05

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmat Rd., Unit #4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 eV
 Accelerating Voltage: 100 keV

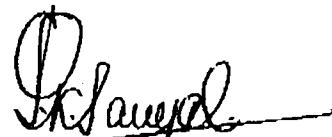
Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47631	47632	47639	
Client Sample ID	WW04-117-F1	WW04-132-L1	WW04-165-F1	
MACROSCOPIC EXAMINATION				
Accepted/Rejected	Accepted	Accepted	Accepted	
Homogeneity	Homogeneous	Homogeneous	Homogeneous	
Color	White	Grey	Grey	
Texture	Compact	Compact	Compact	
Description	Tile	Tile	Tile	
ASBESTIFORM MINERALS				
% Chrysotile		Trace		
% Amosite				
% Crocidolite				
% Tremolite-Actinolite				
% Anthophyllite				
% TOTAL ASBESTOS	ND	Trace	ND	

Chrysotile was detected in sample No. 47632 at a level <0.1%
 ND = None Detected Trace = <0.5%

Method:

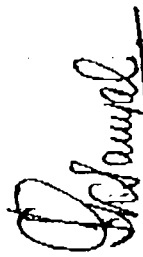
Samples Analyzed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analyzed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-126-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 28/05
 Date Reported: March 03/05

ENTECH
 A Division of Agri-Service Lab Inc.
 6820 Kitchener Rd., Unit #4
 Mississauga, ONT L5V 5K7
 TEL: (905) 821-1112
 FAX: (905) 821-2095


 Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

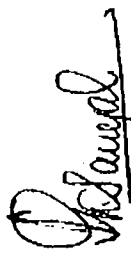
SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
47635 WW04-141-CT1	Homogeneous, beige, layered, compressed, fibrous material.	None detected	Cellulose 50-75% Mineral Wool 10-25% Perlite 10-25% Other non-fibrous material 0.5-5%	

None Detected = <0.5% (MDL)

Analyzed by: *Pincham Environmental*

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and USEPA Method: 800/R-93/116 dated - July 1993.

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-126-01
P.O.:
Sample Type: Paint
Date Received: Feb 28/06
Date Analysed: March 01-02/06
Date Reported: March 03/06


Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)							
			Expected	Found	Recovery	Blank	47633	47634	47636	47637	47638	47638
	Detection				%		WN04-132- WP1	WN04-140- WP1	WN04-156- WP1	WN04-157- WP1	WN04-160- WP1	WN04-160- WP1 Duplicate
Lead in Paint Chips	Limit (µg/g)	5000	233	228	98	<20	<20	<20	<20	103	2412	2285

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): MR, PI

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
Lead in Paint Chips - ICP-AES/Digestion

No noteworthy photographs were taken in WW04.

APPENDIX 21

WW05 – INTENSIVE SUPPORT BUILDING

FLOOR PLANS

LABORATORY CERTIFICATES OF ANALYSES

SELECTED PHOTOGRAPHS

IN OF CUSTODY RECORD[QC-2(2)]

XCS CONSULTANTS LTD
2620 BRISTOL CIRCLE SUITE 300 OAKVILLE ON L6H 6Z7
ANDREAS KOURBEMENI
905 829 8880 x 254 Fax: 905 829 8890

PLEASE RETURN ALL SAMPLES TO XCG
(if other than the client)
XCG 2000 IN FALL 2000 (BAG)

GEORGE KEPPLE

Client P.O.#:

Client Project #: 3-336-126-01

Enrich Ovaries:

Sampled by: AK

Guidelines needed:

Total # of Samples:

Anticipated health or chemical hazard:

Page () of ()

天音の

Comments:

[illegible]

(b) Apply for ≤ 5 days Turnaround Time.	Sample Logged By: <u> </u>
(c) Late charges assessed (usually requested by client). (Slavage charges may then be applicable.)	

Used men/groundwater/surface water/drinking water etc. - Pla. Specify.
Samples will only be retested for 30 days after reporting of results unless specifically requested by them (Reg. 19903)

2019-2020
 2020-2021
 2021-2022
 2022-2023
 2023-2024
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 2242-2243
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 2250-2251
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 2254-2255
 2255-2256
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 2261-2262
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 2297-2298
 2298-2299
 2299-2300
 2300-2301
 2301-2302
 2302-2303
 2303-2304
 2304-2305
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 2308-2309
 2309-2310
 2310-2311
 231

Please specify if water samples are to be filtered by lab before analysis.

1 (21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-338-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 28/05
 Date Analysed:
 Date Reported: Mar 12/05

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmat Rd., Unit 24
 Mississauga, ONT L5H 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

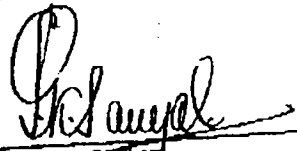
SAMPLE ID				
Entech Sample ID	47641	47645		
Client Sample ID	WW05-101-FT1	WW05-111-FT1		
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted	Accepted		
Homogeneity:	Homogeneous	Homogeneous		
Color:	White	Grey		
Texture:	Compact	Compact		
Description:	Tile	Tile		
ASBESTIFORM MINERALS				
% Chrysotile				
% Amosite				
% Crocidolite				
% Tremolite-Actinolite:				
% Anthophyllite				
% TOTAL ASBESTOS	ND	ND		

ND = None Detected

Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analysed by: Pinchin Environmental Ltd.


 Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

A Division of Agri-Service Lab Inc.
4428 Kestrel Rd., Unit #4
Mississauga, ONT L5N 3K2
TEL: (905) 821-1112
FAX: (905) 821-2095

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-126-01
P.O.:
Sample Type: Tile
Date Received: Feb 28/05
Date Reported: March 03/05

Sam Samyal

Sam Samyal, M.Sc., C.Chem.
Manager, Inorganic Analysis.

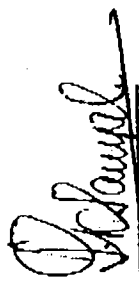
BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			COMMENTS
		ASBESTOS	OTHER		
47642 WW05-106-CT1	Homogeneous, beige, layered, compressed, fibrous material.	None detected	Cellulose 50-75% Mineral Wool 25-60% Perlite 5-10% Other non-fibrous material 0.5-5%		
47844 WW05-109-PE1	Homogeneous, grey, soft, cementitious material	Chrysotile 50-75%	Non-fibrous material 25-50%		

None Detected = <0.5% (MDL)
Analysed by: Pheelin Environmental
in compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and
USEPA Method: 600/R-93/116 dated - July 1993

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-126-01
P.O.:
Sample Type: Paint
Date Received: Feb 28/05
Date Analysed: March 01-02/05
Date Reported: March 03/05


Sam Samy, M.Sc., C. Chem
Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)				
			Expected Conc. (µg/g)	Found Conc. (µg/g)	Recovery %	Blank	47640 WM05-TR1	47643 WM05-108- WP1	47640 WM05-TR1 Duplicate
Lead in Paint Chips	20	5000	233	239	88	<20	332	<20	336

Method:
Lead in Paint Chips - ICP-AES/Digestion

Sample Disposal: 30 Days from the Reporting Date.
Analyst(s): MR, PI
Note: * - Department of Housing and Urban Development, Sept. 1990 (USA)



PHOTO 1: WW05 – Room 109 – An example of a pipe elbow that, along with other elbows and T-joints, contained between 50 and 75% chrysotile asbestos.

APPENDIX 22
WW06 – SEGREGATION BUILDING

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS



6820 Kilmart Rd., Unit #4
Mississauga, Ontario, Canada
LSN 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

IN OF CUSTODY RECORD[QC-2(2)]

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoted#: AK
Sampled by: AK
Guidelines needed: AK

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoted#: AK
Sampled by: AK
Guidelines needed: AK

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoted#: AK
Sampled by: AK
Guidelines needed: AK

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoted#: AK
Sampled by: AK
Guidelines needed: AK

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoted#: AK
Sampled by: AK
Guidelines needed: AK

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoted#: AK
Sampled by: AK
Guidelines needed: AK

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoted#: AK
Sampled by: AK
Guidelines needed: AK

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoted#: AK
Sampled by: AK
Guidelines needed: AK

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoted#: AK
Sampled by: AK
Guidelines needed: AK

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoted#: AK
Sampled by: AK
Guidelines needed: AK

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoted#: AK
Sampled by: AK
Guidelines needed: AK

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoted#: AK
Sampled by: AK
Guidelines needed: AK

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoted#: AK
Sampled by: AK
Guidelines needed: AK

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoted#: AK
Sampled by: AK
Guidelines needed: AK

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoted#: AK
Sampled by: AK
Guidelines needed: AK

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoted#: AK
Sampled by: AK
Guidelines needed: AK

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoted#: AK
Sampled by: AK
Guidelines needed: AK

Client Sample I.D.	Date Sampled	Sample Matrix	Supplying Information (W)	Specifying details if SDWA Le Reg. 170/70 applies	Analysis Required	Temp °C	Container	Lab Number
W006-101-WP1	Feb 28/05	Point	Preserved Yes/No	Yes/No	X	18	1 Bag	47646
W006-101-WP1	"	"	"	"	X	"	"	47647
W006-102-FT1	"	Tile	"	"	X	"	"	47648
W006-102-WP1	"	Point	"	"	X	"	"	47649
W006-104-FT1	"	Tile	"	"	X	"	"	47650
W006-107-WP1	"	Point	"	"	X	"	"	47651
W006-107-WP2	"	"	"	"	X	"	"	47652
W006-109-WP1	"	"	"	"	X	"	"	47653
W006-111-LN1	"	Tile	"	"	X	"	"	47654
W006-114-WP1	"	Point	"	"	X	"	"	47655
W006-114-PE1	"	Tile	"	"	X	"	"	47656
W006-115-FT1	"	Point	"	"	X	"	"	47657

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoted#: AK
Sampled by: AK
Guidelines needed: AK

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 28/05
 Date Analysed:
 Date Reported: Mar 12/05

ENTECH

A Division of Agri-Service Lab Inc.
 6826 Kilmist Rd., Unit 34
 Michessauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertains To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47648	47650	47654**	47657
Client Sample ID	WW06-102-FT1	WW06-104-FT1	WW06-111-LINI	WW06-115-FT1
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted	Accepted		Accepted
Homogeneity:	Homogeneous	Homogeneous		Homogeneous
Color:	Tan	Tan		Tan
Texture:	Compact	Compact		Compact
Description:	Tile	Tile		Tile
ASBESTIFORM MINERALS				
% Chrysotile				≥10≤20
% Amosite				
% Crocidolite				
% Tremolite-Actinolite:				
% Anthophyllite				
% TOTAL ASBESTOS	ND	ND		≥10≤20

**Client Sample 47654 was prepared by Gravimetric Reduction.
 ND = None Detected Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M.Sc., C. Chem.
 Manager, Inorganic Analysis

Client: XCO-Oakville
 Attention: Andreas K
 Project: J-338-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 28/05
 Date Analysed:
 Date Reported: Mar 12/05

ENTECH

A Division of Agri-Service Lab Inc.
 6720 Kilmist Rd., Unit 84
 Mississauga, ONT L5N 3M0
 TEL: (905) 821-1112
 FAX: (905) 821-2005

TEM Bulk Asbestos Test Report

Data Pertains To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 eV
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-A

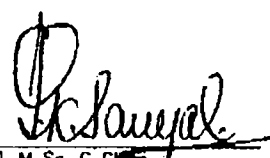
SAMPLE ID		
Entech Sample ID	47054	
Client Sample ID	WW06-111-LINI	
SAMPLE DESCRIPTION		
Homogeneity:	Homogeneous	
Color:	White	
Texture:	Flexible	
Description:	Tile	
SAMPLE PREP		
Starting Weight (g)	0.2526	
Residue Weight(g)	0.1334	
Weight Percent Residue:	52.81	
PERCENT ASBESTOS DETECTED IN RESIDUE		
Chrysotile	0	
Amosite	0	
Cruciolite	0	
Actinolite-Tremolite	0	
Anthophyllite	0	
TOTAL IN RESIDUE	ND	
ASBESTOS PERCENT IN SAMPLE	ND	

ND - None Detected

Trace = <0.5%

Method:

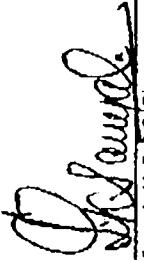
Samples Analyzed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analyzed by: Pluckin Environmental Ltd.


 Sam Senyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-338-128-01
P.O.:
Sample Type: Insulation
Date Received: Feb 28/05
Date Reported: March 03/05

ENTECH

A Division of Agri-Service Lab Inc.
6430 Kilmest Rd., Unit #4
Mississauga, ONT L5N 5K2
TEL: (905) 821-1112
FAX: (905) 821-2095



Sam Sanyal, M. Sc., C. Chem.
Manager, Inorganic Analysis

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			COMMENTS
		ASBESTOS	OTHER		
47858 WW06-114-PE1	Homogeneous, grey soft, cementitious material	Chrysotile 25-50%	Non-fibrous material 50-75%		

None Detected = <0.5% (MDL)

Analysed by: Pinchin Environmental

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and
USEPA Method: 600/R-92/116 dated - July 1993.

A Division of Agri-Service Lab Inc.
6420 Kilmat Rd., Unit 24
Mississauga, ONT L5N 8M3
TEL: (905) 821-1112
FAX: (905) 821-2085

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-338-128-01
Sample Type: Paint
Date Received: Feb 28/05
Date Analyzed: March 01-02/05
Date Reported: March 03/05

Sam Sanyal

Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

Data Pertaining to Specific Samples (continued)														
PARAMETER	Method Detection	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE			SAMPLE DATA (µg/g)								
			Expected	Found	Recovery	Blank	47646	47647	47649	47651	47652	47653	47655	
	Limit (µg/g)		Conc. (µg/g)	Conc. (µg/g)	%		WW06-TR1- (YEL)	WW06-101- WP1	WW06-102- WP1	WW06-107- WP1	WW06-107- WP2	WW06-109- WP1	WW06-114- WP1	
Lead in Paint Chips	20	5000	233	229	98	<20	7354	7006	1659	<20	867	688	32.0	

Method:
Lead in Paint Chips - ICP-AES/Digestion

Sample Disposal: 30 Days from the Reporting Date.

Analyzed(s): MR, PT

Notes: * - Department of Housing and Urban Development, Sept. 1990 (USA).



PHOTO 1: WW06 – Room 114 – A view of the pipe elbows and T-joints that contained between 25 and 50% chrysotile asbestos.

APPENDIX 23
WW07 – HOSPITAL BUILDING

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

TECH

6820 Kiltmat Rd., Unit #4
Mississauga, Ontario, Canada
LSN 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

LSN 5M3

IN OF CUSTODY RECORD[QC-2(2)]

XCG CONSULTANTS LTD
2620 BRISTOL CIRCLE SUITE 300, OAKVILLE, ON L6H 6Z7
ANNEBARS KOWBEMENCO
905 829 8890
905 829 8880 x 254 Fax: 905 829 8890
PLEASE RETURN ALL SAMPLES TO XCG
PLEASE KEEP IN SAME ZIP LOCK BAG

if other than the client

PLEASE RETURN ALL SAMPLES TO XCG

PLEASE KEEP IN SAME ZIP LOCK BAG

Page (1) of (2)

Total # of Samples:

Client Project #: 3-336-126-01

Anticipated health or chemical hazard:

Client P.O.#:

Enitech Quote#:

Sampled by: AK

Guidelines needed:

Analysis Required

Asbestos (TEM)

Specify details if
SDWA Le
Reg. 170/03
applies

Sampling Information (W)

Filtered
Yes/No

Preserved
Yes/No

Sample Matrix

Date Sampled

Client Sample I.D.

Temp °C

Containers

Enitech's Bottle: YES

Number of

Lab Number

Temp °C

Containers

Enitech's Bottle: YES

Number of

Lab Number

Temp °C

Containers

Enitech's Bottle: YES

Number of

Lab Number

Temp °C

Containers

Enitech's Bottle: YES

Number of

Lab Number

Temp °C

Containers

Enitech's Bottle: YES

Number of

Lab Number

Temp °C

Containers

Enitech's Bottle: YES

Number of

Lab Number

Temp °C

Containers

Enitech's Bottle: YES

Number of

Lab Number

See Overleaf

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

IN OF CUSTODY RECORD[QC-2(2)]

XG CONSULTANTS LTD
2620 BRISTOL CIRCLE SUITE 309 OAKVILLE, ON L6H 6Z7

ANDREAS KOURMENEV
905 829 8890 X254 Fax: 905 829 8890

(if other than the client)
PLEASE RETURN ALL SAMPLES TO XG *
PLEASE KEEP IN SAME ZIPLOCK BAG *
* * *

Client P.O. #:
Client Project #: 3-336-126-01
Entech Quote #:
Sampled by: AK
Guidelines needed:

Total # of Samples:

Anticipated health or chemical hazard:

Page (2) of (2)

Analysis Required

Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg 170/03 applies	Entech's Bottles: YES NO		Lab Number
			Filtered Yes/No	Preserved Yes/No		Number of	Containers	
W007-126-WP1	Feb 28/05	Feet of Paint				1 Bag		47678
W007-135-FT1	"	Tile			X	"		47671
W007-139-WP1	"	Paint			X	"		47672
W007-139-PE1	"	Ins			X	"		47673
W007-139-PE2	"	"			X	"		47674
W007-143-TR1	"	Paint			X	"		47675
W007-149-CT1	"	Tile			X	"		47676
W007-149-FT1	"	"			X	"		47677
W007-149-PT2	"	"			X	"		47678
W007-149-TR1	"	Paint			X	"		47679
Date: Feb 28/05 Time: 11 AM Method of Storage: 20°C Date: Feb 28/05 Time: 11 AM Containing: 0L Date: 4 Time: 11:45 AM								

Check: [Signature] Sample: [Signature] Date: [Signature]

Storage charges may then be applicable.)

Apply for 43 days Turnaround Time
Samples will only be retained for 30 days after reporting of results unless specifically requested by client.
Sediment/Groundwater/Surface Water/Emulsion/Drinking Water etc. - Pls. Specify.
Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03.
Please specify if water samples are to be filtered by lab before analysis.
Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.

Client: XCG-Oakville
 Attention: Andreas K
 Project: J-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 28/06
 Date Analysed:
 Date Reported: Mar 16/06

ENTECH

A Division of Agri-Service Lab Inc.
 6828 Kilmat Rd., Unit #4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 kV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47659**	47660**	47664	47665
Client Sample ID	WW07-101-FT1	WW07-116-FT1	WW07-120-FT1	WW07-121-FT1
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted	Accepted	Accepted	Accepted
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	Homogeneous
Color:	Tan	Grey	Tan	Tan
Texture:	Compact	Compact	Compact	Compact
Description:	Tile	Tile	Tile	Tile
ASBESTIFORM MINERALS				
% Chrysotile	Trace	Trace	≥10≤20	≥10≤20
% Amosite				
% Crocidolite				
% Tremolite-Actinolite:	Trace			
% Anthophyllite				
% TOTAL ASBESTOS	Trace	Trace	≥10≤20	≥10≤20

** Asbestos was detected in Client Sample No. 47659 and 47660 at a level of <0.1%

ND = None Detected

Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/06
 Date Analysed:
 Date Reported: Mar 16/06

ENTECH

A Division of Agri-Service Lab Inc.
 8820 Kilmet Rd., Unit #6
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertains To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47668	47669	47671	47677**
Client Sample ID	WW07-126-FT1	WW07-126-FT2	WW07-135-FT1	WW07-149-FT1
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted	Accepted	Accepted	Accepted
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	Homogeneous
Color:	Tan	Tan	Black	Grey
Texture:	Compact	Compact	Compact	Compact
Description:	Tile	Tile	Tile	Tile
ASBESTIFORM MINERALS				
% Chrysotile	$\geq 10 \leq 20$	$\geq 10 \leq 20$	$\geq 10 \leq 20$	Trace
% Amosite				
% Crocidolite				
% Tremolite-Actinolite:				
% Anthophyllite				
% TOTAL ASBESTOS	$\geq 10 \leq 20$	$\geq 10 \leq 20$	$\geq 10 \leq 20$	Trace

** Asbestos was detected in client sample No. 47677 at a level of <0.1%

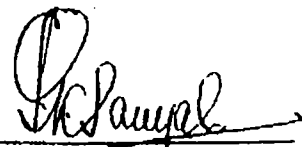
ND = None Detected

Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.


 Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-338-129-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/06
 Date Analysed:
 Date Reported: Mar 16/06

ENTECH

A Division of Agri-Service Lab Inc.
 6828 Kilmat Rd., Unit 26
 Markham, ONT L3R 9M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertains To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 eV
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-A

SAMPLE ID				
Entech Sample ID	47678			
Client Sample ID	WW07-149-F12			
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted			
Homogeneity:	Homogeneous			
Color:	Tan			
Texture:	Compact			
Description:	Tile			
ASBESTIFORM MINERALS				
% Chrysotile	≥10520			
% Amosite				
% Crocidolite				
% Tremolite-Actinolite				
% Anthophyllite				
% TOTAL ASBESTOS	≥10520			

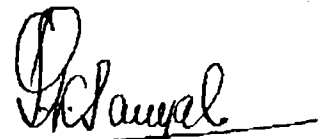
ND = None Detected

Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client:
Attention:
Project:
P.O.:

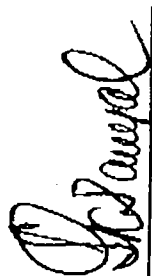
XCO-Oakville
Andreas K.
3-338-126-01

Sample Type:
Data Received:
Data Reported:

Insulation
Feb 23/05
March 03/05

ENTECH

A Division of Agri-Service Lab Inc.
6690 Kitchin Rd., Unit 84
Mississauga, ONT L4W 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095



Sam Sanyal, M. Sc., C. Chem.
Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
47673 WW07-139-PE1	Homogeneous, grey, soft, cementitious material	Chrysotile 25-50%	Non-fibrous material 50-75%	
47674 WW07-139-PE2	Homogeneous, grey, soft, cementitious material	Chrysotile 50-75%	Non-fibrous material 50-75%	
47676 WW07-149-CT1	Homogeneous, beige, layered, compressed fibrous material.	None detected	Cellulose 50-75% Mineral Wool 10-25% Perlite 10-25% Other non-fibrous material 0.5-5%	


None Detected = <0.5% (MDL)

Analysed by: *Pinchin Environmental*

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and
USEPA Method: 800/R-93/116 dated - July 1993

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-126-01
 P.O.:
 Sample Type: Paint
 Date Received: Feb 28/05
 Date Analysed: March 01-02/05
 Date Reported: March 03/05

ENTECH
 A Division of Agri-Service Lab Inc.
 6120 Kéjima Rd., Unit 24
 Mississauga, ONT L5N 5K3
 TEL: (905) 821-1112
 FAX: (905) 821-2095


 Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE			SAMPLE DATA (µg/g)							
			Expected	Found	Recovery	47658	47661	47662	47663	47666	47667	47670	47672
			Conc. (µg/g)	Conc. (µg/g)	%	WM07-TR1	WM07-117- WP1	WM07-120- TR1	WM07-120- WP1	WM07-121- WP1	WM07-123- TR1	WM07-126- WP1	WM07-128- WP1
Lead in Paint Chips	20	5000	233	229	98	555	83.3	41.0	4710	<20	1581	2417	261

Sample Disposal: 30 Days from the Reporting Date.

Analysed: MR, PY

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
 Lead in Paint Chips - ICP-AES/Digestion


Client: XCG-Oakville
Attention: Andreas K.
Project: 3-335-126-01
P.O.:
Sample Type: Paint
Date Received: Feb 28/05
Date Analysed: March 01-02/05
Date Reported: March 03/05

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-335-126-01

Sample Type: Paint
Date Received: Feb 28/05
Date Analysed: March 01-02/05
Date Reported: March 03/05

ENTECH

A Division of Agri-Service Lab Inc.
6128 Kilmor Rd., Unit #4
Mississauga, ONT L4W 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095


Sam Sanyal, M.Sc., C. Chem.
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)				
			Expected	Found	Recovery	Blank	47875	47879	
			Conc. (µg/g)	Conc. (µg/g)	%		WM07-143- TR1	WM07-149- TR1	
Lead in Paint Chips	20	5000	233	229	98	<20	1152	383	

Sample Disposal: 30 Days from the Reporting Date.

Analysis: MR, PI

Note: * - Department of Housing and Urban Development, Sept. 1980 (USA).

Method:
Lead in Paint Chips - ICP-AES/Digestion



PHOTO 1: WW07 – Room 139 – An example of the many pipe elbows that were found in the room. This one was found to contain between 50 and 75% chrysotile asbestos and is in poor condition.

APPENDIX 24
WW08 – ACCOMMODATION BUILDING (UNIT 4)

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

AIN OF CUSTODY RECORD[QC-2(2)]

Client: XCG CONSULTANTS LTD
Address: 2620 BRISTOL CIRCLE SUITE 309 OAKVILLE, ON L6H 6Z7
Phone: 905 829 8880 x254 Fax: 905 829 8890

Project: PLEASE RETURN ALL SAMPLES TO XCG
Notes: PLEASE KEEP IN SAME ZIPLOCK BAG

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Anticipated health or chemical hazard:
Entech Quoted: AK
Sampled by: AK
Guidelines needed:

Total # of Samples: 15

File	Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg. 170/03 applies	Analysis Required		Temp °C	Containers	Lab Number	Entech's Bottle: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
				Filtered Yes/No	Preserved Yes/No		Asbestos (TEM)	Asbestos (PLM)				
	WW08 - WP1	Feb 16 '05	Point				X				47268	
	WW08 - 101-FT1	"	Tile				X				47269	
	WW08 - 102-WP1	"	Point				X				47270	
	WW08 - AB-FT1	"	Tile				X				47271	
	WW08 - AB-FT2	"	"				X				47272	
	WW08 - A18-WP1	"	Point				X				47273	
	WW08 - A19-WP1	"	"				X				47274	
	WW08 - B01-WP1	"	"				X				47275	
	WW08 - G101-FT1	"	Tile				X				47276	
	WW08 - G101-CP1	"	Point				X				47277	
	WW08 - G101-WP1	"	"				X				47278	
	WW08 - G101-WP2	"	"				X				47279	
Around Time												
Working Days												
Specify												
Lab												

check: [Signature]

Signature: [Signature]

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

CHAIN OF CUSTODY RECORD[QC-2(2)]

X/C CONSULTANTS LTD
 2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
 ANDREAS KOURMENCU
 905 829 8880 x 254 Fax: 905 829 8890

PLEASE RETURN ALL SAMPLES TO XCG
PLEASE KEEP IN SAME ZIP LOCK BAG

平 平 平 平

Client P.O.#:

Client Project #: 3-336-126-01

Entech Quote#:

Sampled by:

Guidelines needed:

Total # of Samples:

Anticipated health or chemical hazard:

Page (2) of (2)

[illegible]

Prices Apply for 45 days Turnaround Time. Samples Logged By _____ (Storage charges may then be applicable.)

☒ : Samples will only be retained for 30 days after reporting of failure unless specifically requested by the customer.

US Sediment/Groundwater/Surface Water/Elutriate/Sludge/Water etc.

Please call the Laboratory BEFORE submitting any samples which fall under the following categories:

Please specify if water samples are to be filtered by lab before analysis.

110 pages specified on
0 (21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-335-126-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/05
 Date Analysed:
 Date Reported: March 04/05

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmiet Rd., Unit #4
 Mississauga, ONT L5N 6M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV


Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47269	47271	47272	
Client Sample ID	WW08-101-FT1	WW08-A8-FT1	WW08-A8-FT2	
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted	Accepted	Accepted	
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	
Color:	White	Tan	White	
Texture:	Compact	Compact	Compact	
Description:	Tile	Tile	Tile	
ASBESTIFORM MINERALS				
% Chrysotile		≥10≤20	≥10≤20	
% Amosite				
% Crocidolite				
% Tremolite-Actinolite:				
% Anthophyllite				
% TOTAL ASBESTOS	ND	≥10≤20	≥10≤20	

* Sample 42765 was prepared by Gravimetric Reduction.
 ND = None Detected Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

ENTECH

A Division of Agri-Service Lab Inc.
 8820 Kilmat Rd., Unit B4
 Mississauga, ONT L5H 8M3
 TEL: (905) 821-1112
 FAX: (905) 821-2096

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-126-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/05
 Data Reported: Feb 28/05



Sam Sanyal, M.Sc., C. Chem.
 Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			COMMENTS
		ASBESTOS	OTHER		
47276 WW08-G101-CT1	Homogeneous, brown, layered, compressed fibrous material.	None detected	Cellulose 25-50% Mineral Wool 25-50% Perlite 10-25% Other non-fibrous material 0.5-5%		
47280 WW08-G103-CT1	Homogeneous, beige, layered, compressed fibrous material.	None detected	Cellulose 25-50% Mineral Wool 50-75% Perlite 10-25% Other non-fibrous material 0.5-5%		
47281 WW08-G106-CT1	Homogeneous, brown, layered, compressed fibrous material.	None detected	Cellulose 25-50% Mineral Wool 25-50% Perlite 10-25% Other non-fibrous material 0.5-5%		

None Detected = <0.5% (MDL)

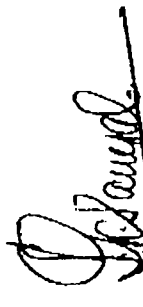
Analysed by: Pinchin Environmental

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and
 HSEDA Method: 800/R-93/16 dated - July 1993.

ENTECH

A Division of Agriservice Lab Inc.
6420 Kilmont Rd., Unit 20
Mississauga, ONT L4N 5M1
TEL: (905) 821-1112
FAX: (905) 821-2095

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-126-01
P.O.:
Sample Type: Paint
Date Received: Feb 21/05
Date Analysed: Feb 23-24/05
Date Reported: Feb 28/05


Sam Sanyal M.Sc., C. Chem
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE			SAMPLE DATA (µg/g)							
			Expected	Found	Recovery	Blank	47288 WN08-WP1	47270 WN08-102- WP1	47273 WN08A18- WP1	47274 WN08-A19- WP1	47275 WN08-B01- WP1	47277 WN08-G101- CP1	47278 WN08-G101- WP1
			Cenc. (µg/g)	Cenc. (µg/g)	%								
Lead in Paint Chips	20	5000	233	223	96	<20	984	298	628	13362	37.9	<20	<20

Sample Disposal: 30 Days from the Reporting Date.

Analysis(s): MR, PS

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
Lead in Paint Chips - ICP-AES/Digestion

A Division of Agri-Service Lab Inc.
553 St. Nicholas Rd., Unit 20
Mississauga, ONT L5M 5W3
TEL: (905) 821-1112
FAX: (905) 821-2095

David

Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

[illegible]

Method:
Lead in Paint Chips - ICP-AES Digestion

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): MR, PS

Analyst(s): MJK, PS
Note: - Department of Housing and Urban Development, Sept. 1990 (USA).

No noteworthy photographs were taken in WW08.

APPENDIX 25
WW09 – ACCOMMODATION BUILDING (UNIT 1)

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS



6820 Kilmart Rd., Unit #4
Mississauga, Ontario, Canada
L5N 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

Work Order: 38713

Comments:

Print/Scan

Page (1) of 2

IN OF CUSTODY RECORD[QC-2(2)]

X/G CONSULTANTS LTD
2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
ANDREAS KOURMENCU
905 829 8890 x 254 Fax: 905 829 8890

PLEASE RETURN ALL SAMPLES TO X/G *
PLEASE KEEP IN SAME ZIP LOCK BAGS *
* * *

Client P.O.#:
Client Project #: 3-336-126-01
Entech Quote#: AK
Sampled by: AK
Guidelines needed:

Total # of Samples: 15
Anticipated health & chemical hazard:

Analysis Required

Analysis Required
X Lead
X Asbestos
X PCBs
X VOCs
X SVOCs
X PAHs
X BTEX
X HAPs
X Pesticides
X Fungus
X Mold
X Radon
X Other: _____

Entech's Bottle: YES (NO)
LAB USE ONLY

Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)	Specify details if SDWA Le Reg. 170/03 applies	Temp °C	Containers	Lab Number
WN09-101-FT1	Feb 21/03	Tile	Filtered Yes No Preserved Yes No		16.9		47304
WN09-101-WP1	"	Point					47305
WN09-102-PE1	"	Tap					47306
WN09-104-CT1	"	Tile					47307
WN09-105-ST1	"	Skivo					47308
WN09-105-WP1	"	Point					47309
WN09-A18-FP1	"	"					47310
WN09-C21-FT1	"	Tile					47311
WN09-6101-WP1	"	Point					47312
WN09-6101-FT1	"	Tile					47313
WN09-6106-WP1	"	Point					47314
WN09-H103-CT1	"	Tile					47315

Due Feb 21/03 4:30 pm
Due Feb 21/03 4:30 pm
Due Feb 21/03 6:15 pm

Chuk: [Signature]
Suite

Chuk: [Signature]
Suite

Chuk: [Signature]
Suite

Chuk: [Signature]
Suite

Storage charges may then be applicable.)

Sample Logged By

4.0 (21 Apr. 2004)

TECH

6820 Kildermot Rd., Unit #4
Mississauga, Ontario, Canada
LSN 3M3

TEL: (905) 821-1112
FAX: (905) 821-2095

IN OF CUSTODY RECORD[QC-2(2)]

X/G CONSULTANTS LTD
2020 BRISTOL CIRCLE SUITE 309 OAKVILLE, ON L6H 6Z7
ANDREAS KOURTEMENOS
905 829 8890 Fax: 905 829 8890

(if other than the client)
PLEASE RETURN ALL SAMPLES TO X/G
PLEASE KEEP IN SAME ZIP LOCK BAG

Client P.O.#
Client Project #: 3-336-126-01
Entech Quote#: AK
Sampled by: AK
Guidelines needed:

Total # of Samples:
Anticipated health or chemical hazard:

Page: 1 of 1

Entech's Bottle: YES NO

LAB USE ONLY

Sample	Number of	Temp °C	Containers	Lab Number
			1 Bag	47257

Analysis Required

Specify details if
SDWA Le
Reg. 170/03
applies

Sampling Information (W)
Filtered Yes/No
Preserved Yes/No

Date Sampled
Sample Matrix

Client Sample I.D.

Lead

Feb 18/05 Paint

check: Louis

Date	Time	Method of Shipment
Feb 28/05	11 AM	Drop off
Date	Time	Method of Shipment
Feb 28/05	11 AM	AK
Date	Time	Method of Shipment
Feb 28/05	2 PM	AK

Storage charges may then be applicable.

Apply for 45 days Turnaround Time.
Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)
Sediment/Groundwater/Surface Water/Emulsion/Drinking Water etc. - Pls. Specify.
Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03.
Please specify if water samples are to be filtered by lab before analysis.
Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.

0 (21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/05
 Date Analysed:
 Date Reported: March 08/05

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmat Rd., Unit #4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertains To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 eV
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID					
Entech Sample ID	47304	47311	47313		
Client Sample ID	WW09-101-FT1	WW09-C21-FT1	WW09-G101-FT1		
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted	Accepted	Accepted		
Homogeneity:	Homogeneous	Homogeneous	Homogeneous		
Color:	Grey	Tan	White		
Texture:	Compact	Compact	Compact		
Description:	Tile	Tile	Tile		
ASBESTIFORM MINERALS					
% Chrysotile					
% Amosite					
% Crocidolite					
% Tremolite-Actinolite					
% Anthophyllite					
% TOTAL ASBESTOS	ND	ND	ND		

ND = None Detected

Trace = <0.5%


Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-126-01
P.O.:
Sample Type: Insulation
Data Received: Feb 21/06
Date Reported: Feb 28/06


Sam Sanyal, M.Sc., C. Chem.
Manager, Inorganic Analysis

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			COMMENTS
		ASBESTOS	OTHER		
47306 WW09-102-PE1	Homogeneous, grey, soft, cementitious material.	Chrysotile >75%	Non-fibrous material 10-25%		
47307 WW09-104-CT1	Homogeneous, beige, compressed fibrous material.	None detected	Cellulose Mineral Wool Perlite 25-50% 50-75% 5-10%		
47308 WW09-H103-SU1	Homogeneous, white, soft, cementitious material.	None detected	Non-fibrous material >75%		
47315 WW09-H103-CT1	Homogeneous, beige, compressed fibrous material.	None detected	Cellulose Mineral Wool Perlite Other non-fibrous material 50-75% 25-50% 5-10% 0.5-5%		

None Detected = <0.5% (MDL)


Analysed by: Pritchett Environmental

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and

USEPA Method 800/R-93/116 dated July 1993

A Division of Agri-Service Lab Inc.
6720 Highway 10, Unit #4
Markham, ONT L3R 9M3
TEL: (905) 821-1112
FAX: (905) 821-2095

Client: XCG-Oakville
Attention: Andreas K
Project: S-336-126-01
P.O.:
Sample Type: Insulation
Date Received: Feb 21/05
Date Reported: Feb 28/05


Sam Sanyal, M.Sc., C. Chem.
Manager, Inorganic Analysis

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested					
SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			COMMENTS
		ASBESTOS	OTHER		
47316 WW09-H103-CT2	Homogeneous, beige, compressed fibrous material.	None detected	Cellulose 50-75% Mineral Wool 25-50% Perlite 10% Other non-fibrous material 5%		
47318 WW09-H109-Stu	Homogeneous, white, soft, cementitious material.	None detected	Non-fibrous material >75%		

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-126-01
P.O.:
Sample Type: Paint
Date Received: Feb 21/05
Date Analysed: Feb 23-24/05
Date Reported: Feb 28/05
Date Revised: Mar 11/05

[Signature]

Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)									
			Expected	Found	Recovery	Blank	47305	47309	47310	47312	47314	47317	47314	47314
			Conc. (µg/g)	Conc. (µg/g)	%		WW09-101- WP1	WW09-105- WP1	WW09-A18- FP1	WW09-G101- WP1	WW09-G108- WP1	WW09-H109- WP1	WW09-G10 WP1 Duplicate	
Lead in Paint Chips	20	5000 -	233	225	96	<20	<20	<20	779	225	<20	5128	<20	

Method:
Lead in Paint Chips - ICP-AES/Digestion

Sample Disposal: 30 Days from the Reporting Date.
Analysis(s): MR, PS
Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

A Division of Agri-Service Lab Inc.
8820 Kestner Rd., Unit 54
Mississauga, ONT L5N 5M3
TEL: (905) 821-1172
FAX: (905) 821-2095

Edward

Sam Samyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

[illegible]

Method: Lead In Palm Chips - ICP-AES/Digestion

Note: - Department of Housing and Urban Development, Sept. 1990 (USA).

Client:	XCG-Oakville
Attention:	Andreas K.
Project:	3-336-126-01
P.O.:	
Sample Type:	Paint
Date Received:	Feb 21/05
Date Analysed:	Feb 23/05
Date Reported:	Feb 28/05

ENTECH

A Division of Agri-Service Lab Inc.
8428 Kutchman Rd., Unit #8
Mississauga, ONT L5N 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

David
Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

[illegible]

Sample Disposal: 30 Days from the Reporting Date.

Se BW: (Ergebnis)

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
Lead in Paint Chips - ICP-AES/Digestion

No noteworthy photographs were taken in WW09.

APPENDIX 26
WW10 – ACCOMMODATION BUILDING (UNIT 2)

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS



6820 Kilmart Rd., Unit #4
Mississauga, Ontario, Canada
L5N 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

4/1/04/04/04

100

AIN OF CUSTODY RECORD[QC-2(2)]

XCG CONSULTANTS LTD
2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
ANDREAS KOURBEMENOS
905 829 8880 X 254 Fax: 905 829 8890

9 (if other than the client)
PLEASE RETURN ALL SAMPLES TO XCG *
PLEASE KEEP IN SAME ZIPLOCK BAGS *
* * *

Client Sample I.D.	Date Sampled	Sample Matrix	Filtered Yes/No	Preserved Yes/No	Specify details if SDWA Le Reg. (170.03) applies
WW10-101-CT1	Feb 10 05	Tile			
WW10-102-PE1	"	INT			
WW10-103-WP1	"	Paint			
WW10-105-STU1	"	Gravel			
WW10-101-WP1	"	Paint			
WW10-108-PP1	"	"			
WW10-108-WP1	"	"			
WW10-108-WP2	"	"			
WW10-108-FT1	"	Tile			
WW10-104-FT1	"	"			
WW10-104-FT2	"	"			
WW10-104-FT3	"	"			

Amount Time
Working Days
Specify a

Lab

Apply for 3 days Turnaround Time.

5: Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)

oil/Sediment/Groundwater/Surface Water/Fluent/Drinking Water etc. - PLS. Specify.

Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03

Please specify if water samples are to be filtered by lab before analysis.

Unless specified otherwise, all water samples will not be considered as Drinking Water, as defined in R170/03.

4.0 (21 Apr. 2004)

Page (1)

Client P.O.#:
Client Project #: 3-336-126-01
Enrich Quota#: AK
Sampled by: AK
Guidelines needed:

Total # of Samples: 14
Anticipated health or chemical hazard:

Analysis Required

Asbestos (TEM)

Asbestos (PLM)

LEAD

YES

NO

LAB USE ONLY

Enrich's Bottles: YES

NO

Number of

Containers

Temp °C

Lab Number

47334

47335

47336

47337

47338

47339

47340

47341

47342

47343

47344

47345

Time

4:30 PM

Time

4:30 PM

Time

6:40 PM

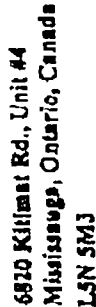
Method of the project

Drop by

Condition

OK

See Overleaf



TEL: (905) 821-1112
FAX: (905) 821-2095

Work Order: 38331
Comments: _____

Page 10 of 11

15: X/C CONSULTANTS LTO
 11: 2620 BELTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
 1: ANDREAS KOWALEWICZ
 905 829 8880 x 254 Fax: 905 829 8890

IN (if other than the client)
PLEASE RETURN ALL SAMPLES TO XCG *
PLEASE KEEP IN SAME ZIPLOCK BAG

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[illegible]

Wages Apply for 4 days Turnaround Time	Storage Charged By
	Storage charges may then be applicable.)

3: Samples will only be retained for 30 days after reporting of results unless specimen is stored in a freezer.

3. Sediment/Groundwater/Surface Water/End-Use Water Act-2002/Reg. 169/03 submitting any samples which fall under Safe Drinking

Please call the library before submitting any sample.

Please specify if water samples are to be analyzed for:

- ☐ Please specify if water samples will not be considered as Drinking Water, as defined in R170/03.
- ☐ Please specify otherwise: all water samples will not be considered as Drinking Water, as defined in R170/03.

0 (21 Apr. 2004)

See Quinlan

Client: XCG-Dakville
 Attention: Andreas K
 Project: 3-338-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/06
 Date Analysed:
 Date Reported: March 04/06
 Date Revised: March 08/06

ENTECH

A Division of Agri-Service Lab Inc.
 6620 Khimel Rd., Unit 24
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID					
Entech Sample ID	47342	47343	47344	47345	47346
Client Sample ID	WW10-B08-FT1	WW10-B21-FT1	WW10-B21-FT2	WW10-B21-FT3	WW10-B21-FT4
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted	Accepted	Accepted	Accepted	Accepted
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	Homogeneous	Homogeneous
Color:	Tan	Tan	Tan	Tan	Tan
Texture:	Compact	Compact	Compact	Compact	Compact
Description:	Tile	Tile	Tile	Tile	Tile
ASBESTIFORM MINERALS					
% Chrysotile	≥10≤20		≥10≤20	Trace	
% Amosite					
% Crocidolite					
% Tremolite-Actinolite:					
% Anthophyllite					
% TOTAL ASBESTOS	≥10≤20	ND	≥10≤20	Trace	ND

ND = None Detected

Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: *Pinchin Environmental Ltd.*

Chrysotile asbestos was detected in sample 47345 at a level <0.1%



Sam Sanyal, M.Sc., C. Chem.
 Manager, Inorganic Analysis

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-126-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/05
 Date Reported: Feb 21/05

ENTECH

A Division of Agri-Service Lab Inc.
 6723 Kilmuir Rd., Unit #4
 Mississauga, ONT L5N 3M2
 TEL: (905) 821-1112
 FAX: (905) 821-2056

Sam Sanyal

Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			COMMENTS
		ASBESTOS	OTHER	OTHER	
47334 WW10-101-CT1	Homogeneous, beige, compressed, fibrous material.	None detected	Cellulose Mineral Wool Perlite Other non-fibrous material	25-50% 25-50% 10-25% 0.5-5%	
47335 WW10-102-PE1	Homogeneous, grey, soft, cementitious material.	Chrysotile	Non-fibrous material	50-75% 25-50%	
47337 WW10-105-Stu1	Homogeneous, white, soft, cementitious material.	None detected	Perlite Other non-fibrous material	10-25% >75%	
47348 WW10-G101-CT1	Homogeneous, beige, compressed fibrous material.	None detected	Cellulose Mineral Wool Perlite Other non-fibrous material	25-50% 25-50% 25-50% 0.5-5%	


None Detected = <0.5% (MDL)

Analysed by: Pinchin Environmental

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and

USEPA Method: 600/IR-83/116 dated - July 1993

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-126-01
 P.O.:
 Sample Type: Insulation
 Data Received: Feb 21/05
 Date Reported: Feb 28/05


 Sam Samyal, M.Sc., C. Chem.
 Manager, Inorganic Analysis.

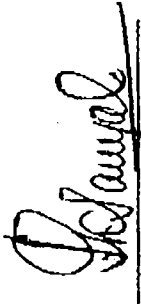
BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested					COMMENTS
SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			
		ASBESTOS	OTHER		
47350 WW10-G102-CT1	Homogeneous, beige, compressed fibrous material.	None detected	Cellulose 50-75% Mineral Wool 10% Perlite 25-50% Other non-fibrous material 0-5% 5%		

ENTECH

A Division of Agri-Service Lab Inc.
 8820 Kilmer Rd., Unit B4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-338-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 28/05
 Date Reported: March 03/05


 Sam Samra, M.Sc., C.Chem.
 Manager, Inorganic Analysis

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested


SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			COMMENTS
		ASBESTOS	OTHER		
47500 WW10-H103-CT1	Homogenous, beige layered, compressed fibrous material.	None detected	Cellulose Mineral Wool Perlite Other non-fibrous material	50-75% 10-25% 10-25% 0.5-5%	
47501 WW10-H108-CT1	Homogenous, beige layered, compressed fibrous material.	None detected	Cellulose Mineral Wool Perlite Other non-fibrous material	50-75% 10-25% 10-25% 0.5-5%	

None Detected = <0.5% (MDL)

Analysed by: Pinchin Environmental

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and
 US EPA Method: 800/R-93/116 dated - July 1993.

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-128-01
 P.O.:
 Sample Type: Paint
 Date Received: Feb 21/06
 Date Analysed: Feb 23-24/06
 Date Reported: Feb 28/06


 Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE			SAMPLE DATA (µg/g)												
			Expected	Found	Recovery	47336	47338	47339	47340	47341	47347	47349	47351					
			Conc. (µg/g)	Conc. (µg/g)	%	WW10-123- WP1	WW10-801- WP1	WW10-808- DP1	WW10-808- WP1	WW10-808- WP2	WW10-G101- CP1	WW10-G102- WP1	WW10-G104- WP1					
Lead in Paint Chips	20	5000	233	225	96	89.0	28.3	3884	<20	<20	<20	574	154					


Sample Disposal: 30 Days from the Reporting Date.

Analyte(s): **MR, PS**

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA)

Method:
 Lead in Paint Chips - ICP-AES/Digestion

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-126-01
P.O.:
Sample Type: Paint
Date Received: Feb 21/06
Date Analysed: Feb 23-24/06
Date Reported: Feb 28/06


Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)			
			Expected	Found	Recovery	Blank	47352	47341
			Conc. (µg/g)	Conc. (µg/g)	%		WHYD-G108-DP1	WHYD-B08-WP2 Duplicate
Lead in Paint Chips	20	5000	233	225	96	<20	25.8	26.7

Method:
Lead in Paint Chips - ICP-AES/Digestion

Sample Disposal: 30 Days from the Reporting Date.
Analyst(s): MR, PS
Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Client: XCG-Oakville
 Attention: Andrew K.
 Project: 3-336-126-01
 P.O.:
 Sample Type: Paint
 Date Received: Feb 28/05
 Date Analysed: March 01-02/05
 Date Reported: March 03/05

[Signature]

Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

Data Permitted to Specimen Containers (1) 10/2008														
PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE			SAMPLE DATA (µg/g)								
			Expected	Found	Recovery	Blank	47682 WM10-H108- WP1	47683 WM10-H108- TR1	47683 WM10-H108- TR1 Duplicates					
				Conc. (µg/g)	%									
Lead in Paint Chips	20	5000	233	229	98	<20	<20	6787	6758					

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): MR, PI

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
 Lead in Paint Chips - ICP-AES/Digestion

No noteworthy photographs were taken in WW10.

APPENDIX 27
WW11 – ACCOMMODATION BUILDING (UNIT 3)

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS



6820 Kilmer Rd., Unit #4
Mississauga, Ontario, Canada
LSN 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

pre-form

IN OF CUSTODY RECORD[QC-2(2)]

XCG CONSULTANTS LTD
2620 BRISTOL CIRCLE SUITE 309 OAKVILLE, ON L6H 6Z7
ANDREAS KOURMENO
905 824 8880 x254 Fax: 905 829 8890

if other than the client)
PLEASE RETURN ALL SAMPLES TO XCG *
PLEASE KEEP IN SAME ZIP LOCK BAG *
* * *

Client P.O.#:
Client Project #: 3-336-126-01
Entech Quote#: AK
Sampled by: AK
Guidelines needed:

Total # of Samples:
Anticipated health or chemical hazard:

Work Order: 38372
Comments:

Analysis Required

Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg. 170/03 applies	Analysis Required		Entech's Bottle: YES NO		Lab Number
			Filtered Yes/No	Preserved Yes/No		Asbestos (PLM)	Lead	Sample	Number of Containers	
WW11-6102-CT1	Feb 18/03	Tile				X	X			47696
WW11-6104-CT1	"	"				X	X		1809	47697
WW11-6104-PT1	"	"				X	X		"	47698
WW11-6104-PT1	"	Paint							"	47699
WW11-6106-WP1	"	"							"	47700
WW11-6103-WP1	"	"							"	47701
WW11-6103-CT1	"	Tile				X	X		"	47702
WW11-6105-WP1	"	Paint							"	47703
WW11-6101-TE1	"	"							"	47704
Full specified to Entech (11/03)						Check: Lead Asbestos		Date	Time	Method of Disposal
Specified by Entech (11/03)						Shweta		Date	Time	Conduct
Sampling Logbook						Shweta		Date	Time	Conduct

Storage charges may then be applicable.

Apply for <1 days Turnaround Time.
Samples will only be retained for 30 days after reporting of results unless specifically requested by client.
Sediment/Groundwater/Surface Water/EMU/Drinking Water etc. - Pls. Specify.
Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03.
Please specify if water samples are to be filtered by lab before analysis.
Please specify if water samples will not be considered as Drinking Water as defined in R170/03.
0 (21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 28/06
 Date Analysed:
 Date Reported: Mar 16/06

ENTECH

A Division of Agri-Service Lab Inc.
 6926 Kilmat Rd., Unit #4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertains To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID	47685	47692	47693	47694	47695
Entech Sample ID				WW11-D21-FT1	WW11-D21-FT2
Client Sample ID	WW11-101-FT1	WW11-B08-FT1	WW11-B18-FT1		
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted	Accepted	Accepted	Accepted	Accepted
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	Homogeneous	Homogeneous
Color:	White	Tan	Grey	Tan	Tan
Texture:	Compact	Compact	Compact	Compact	Compact
Description:	Tile	Tile	Tile	Tile	Tile
ASBESTIFORM MINERALS					
% Chrysotile		$\geq 10 \leq 20$	$\geq 10 \leq 20$		$\geq 10 \leq 20$
% Amosite					
% Crocidolite					
% Tremolite-Actinolite:	Trace			Trace	
% Anthophyllite					
% TOTAL ASBESTOS	Trace	$\geq 10 \leq 20$	$\geq 10 \leq 20$	ND	$\geq 10 \leq 20$

Tremolite was detected in client sample No. 47685 at a level of $<0.1\%$
 ND = None Detected Trace = $<0.5\%$

Method:

Sample analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-338-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 28/05
 Date Analysed:
 Date Reported: Mar 16/05

ENTECH

A Division of Agri-Service Lab Inc.
 6828 Kilmat Rd., Unit 24
 Mississauga, ONT L5W 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2085

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID					
Entech Sample ID	47698				
Client Sample ID	WW11-G104-FT1				
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted				
Homogeneity:	Homogeneous				
Color:	White				
Texture:	Compact				
Description:	Tile				
ASBESTIFORM MINERALS					
% Chrysotile					
% Amosite					
% Crocidolite					
% Tremolite-Actinolite					
% Anthophyllite					
% TOTAL ASBESTOS	ND				

ND = None Detected

Trace = <0.5%

Method:

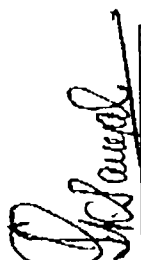
Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-126-41
P.O.:
Sample Type: Tile
Date Received: Feb 28/05
Date Reported: March 03/05


Sam Sanyal, M. Sc., C. Chem.
Manager, Inorganic Analysis

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			COMMENTS
		ASBESTOS	OTHER	OTHER	
47686 WW11-101-CT1	Homogeneous, beige layered, compressed fibrous material.	None detected	Cellulose Mineral Wool Perlite Other non-fibrous material	25-50% 50-75% 5-10% 5-10%	
47688 WW11-105-CT1	Homogeneous, white soft, cementitious material.	None detected	Perlite Other non-fibrous material	5-10% >75%	
47686 WW11-G102-CT1	Homogeneous, beige layered, compressed fibrous material.	None detected	Cellulose Mineral Wool Perlite Other non-fibrous material	50-75% 25-50% 5-10% 5-10%	
47687 WW11-G104-CT1	Homogeneous, beige layered, compressed fibrous material.	None detected	Cellulose Mineral Wool Perlite Other non-fibrous material	50-75% 25-50% 5-10% 5-10%	
47702 WW11-H103-CT1	Homogeneous, beige layered, compressed fibrous material.	None detected	Cellulose Mineral Wool Perlite Other non-fibrous material	50-75% 25-50% 5-10% 0.5-5%	

None Detected = <0.5% (MDL)

Analyzed by: Pinchin Environmental

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1965 and
USEPA Method: 800/R-93/115 dated - JULY 1993.

A Division of Agri-Service Lab Inc.
65328 Kestrel Rd., Unit #6
Mississauga, ONT L5N 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

P.O.:	Paint
Sample Type:	Feb 28/05
Date Received:	March 01-02/05
Date Analysed:	March 03/05
Date Reported:	

Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

[illegible]

Method:
Lead in Paint Chips - ICP-AES/Digestion

Sample Disposal: 30 Days from the Reporting Date.

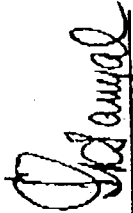
Analysis: MR, P

Note: - Department of Housing and Urban Development, Sept. 1990 (USA).
Analyst(s): MR, H

ENTECH

A Division of Agri-Service Lab Inc.
6320 Kilmist Rd., Unit #4
Mississauga, ONT L5H 5N3
TEL: (905) 821-1112
FAX: (905) 821-2095

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-126-01
P.O.:
Sample Type: Paint
Date Received: Feb 25/05
Date Analysed: March 01-02/05
Date Reported: March 03/05


Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)				
			Expected	Found	Recovery	Blank	47703	47704	47691
Lead in Paint Chips	20	5000	Conc. (µg/g)	Conc. (µg/g)	%		WW11-4105- WP1	WW11-M01- TR1	WW11-B01- TR2 Duplicate
			233	229	98	<20	<20	1072	2294

Method:
Lead in Paint Chips - ICP-AES/Digestion

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): MR, PJ

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

No noteworthy photographs were taken in WW11.

APPENDIX 28
WW12 – INMATE CANTEEN/HOBBY CRAFT BUILDING

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

AIN OF CUSTODY RECORD[QC-2(2)]

XCG CONSULTANTS LTD

2620 BELTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7

ANDREAS KOUREMENOS

905 829 8880 x 254 Fax: 905 829 8890

(if other than the client)

PLEASE RETURN ALL SAMPLES TO XCG

PLEASE KEEP IN SAME ZIPLOCK BAG

Client P.O. #:

Client Project #: 3-336-126 - D1

Entech Quote #:

Sampled by: AK

Guidelines needed:

Total # of Samples:

Anticipated health or chemical hazard:

Page (1) of (2)

Analysis Required

Asbestos (TEM)

Asbestos (PLM)

LEAD

Specify details if
SDWA Le
Reg. 170/03
applies:

Preserved
Yes/No

Filtered
Yes/No

Sample
Matrix

Date
Sampled

Client
Sample I.D.

W012 - DT1

W012 - 113-FT1

W012 - 115-DT1

W012 - 124-DT1

W012 - 125-FT1

W012 - 125-FP1

W012 - 131-FT2

W012 - 133-FT1

W012 - 133-WP1

W012 - 133-WP2

W012 - 133-WP3

W012 - 209-PR1

W012 - 209-PR2

W012 - 209-PR3

W012 - 209-PR4

W012 - 209-PR5

W012 - 209-PR6

W012 - 209-PR7

W012 - 209-PR8

W012 - 209-PR9

W012 - 209-PR10

W012 - 209-PR11

W012 - 209-PR12

W012 - 209-PR13

W012 - 209-PR14

W012 - 209-PR15

W012 - 209-PR16

W012 - 209-PR17

W012 - 209-PR18

W012 - 209-PR19

W012 - 209-PR20

W012 - 209-PR21

W012 - 209-PR22

W012 - 209-PR23

W012 - 209-PR24

W012 - 209-PR25

W012 - 209-PR26

W012 - 209-PR27

W012 - 209-PR28

W012 - 209-PR29

W012 - 209-PR30

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W012 - 209-PR35

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W012 - 209-PR37

W012 - 209-PR38

W012 - 209-PR39

W012 - 209-PR40

W012 - 209-PR41

W012 - 209-PR42

W012 - 209-PR43

W012 - 209-PR44

W012 - 209-PR45

W012 - 209-PR46

W012 - 209-PR47

W012 - 209-PR48

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W012 - 209-PR112

W012 - 209-PR113

W012 - 209-PR114

W012 - 209-PR115

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W012 - 209-PR162

W012 - 209-PR163

W012 - 209-PR164

W012 - 209-PR165

W012 - 209-PR166

W012 - 209-PR167

W012 - 209-PR168

W012 - 209-PR169

W012 - 209-PR170

W012 - 209-PR171

W012 - 209-PR172

W012 - 209-PR173

W012 - 209-PR174

W012 - 209-PR175

W012 - 209-PR176



6820 Kilomet Rd., Unit #4
Mississauga, Ontario, Canada
L5N 3M3

TEL: (905) 821-1112
FAX: (905) 821-2095

CHAIN OF CUSTODY RECORD[QC-2(2)]

Client: XCG CONSULTANTS LTD
Address: 2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
Phone: 905 829 8880 Fax: 905 829 8890

Project: PLEASE RETURN ALL SAMPLES TO XCG
Notes: PLEASE KEEP IN SAME ZIPLOCK BAG

Client P.O.#: _____
Client Project #: 3-336-126-01
Entech Quote#: AK
Sampled by: AK
Guidelines needed: _____

Total # of Samples: _____

Anticipated health or chemical hazard: _____

Page (2) of (2)

Analysis Required

Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg. 170/03 applies	Analysis Required		Temp °C	Containers	Lab Number
			Filtered Yes/No	Preserved Yes/No		Asbestos (PLM)	Asbestos (TEM)			
WM12-201-PE1	FEB 28/03	INS				X			1 Bag	47717
WM12-201-PE2	"	"				X			"	47718
WM12-201-WP1	"	Paint				X			"	47719
WM12-113-CT1	FEB 28/03	Tile				X			"	47720
WM12-117-WT1	FEB 28/03	Tile				X			"	47721
WM12-124-FT1	"	"				X			"	47722
WM12-130-CP1	"	Paint				X			"	47723
WM12-130-CP2	"	"				X			"	47724
WM12-202-PT1	"	Tile				X			"	47725
WM12-203-WP1	"	Paint				X			"	47726
WM12-205-WP1	"	"				X			"	47727

Signature: Chuck Long
Date: Feb 28/03
Time: 11 AM
Signature: Simta
Date: Feb 28/03
Time: 11 AM
Signature: Simta
Date: Feb 28/03
Time: 12:40 PM

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Storage charges may then be applicable.

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-338-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 28/06
 Date Analysed:
 Date Reported: Mar 16/06

ENTECH

A Division of Agri-Service Lab Inc.
 6828 Kilmat Rd., Unit #4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47706	47709	47711	47712
Client Sample ID	WW11-113-FT1	WW12-125-FT1	WW12-131-FT2	WW12-133-FT1
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted	Accepted	Accepted	Accepted
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	Homogeneous
Color:	Tan	Tan	Tan	Tan
Texture:	Compact	Compact	Compact	Compact
Description:	Tile	Tile	Tile	Tile
ASBESTIFORM MINERALS				
% Chrysotile	≥10≤20	≥10≤20	≥10≤20	
% Amosite				
% Crocidolite				
% Tremolite-Actinolite				
% Anthophyllite				
% TOTAL ASBESTOS	≥10≤20	≥10≤20	≥10≤20	ND

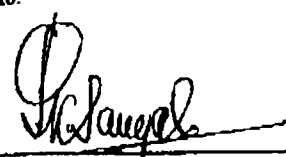
ND = None Detected

Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.


 Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-338-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/06
 Date Analysed:
 Date Reported: Mar 16/06

ENTECH

A Division of Agri-Service Lab Inc.
 6829 Kilmist Rd., Unit #6
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47721	47724**		
Client Sample ID	WW12-117-WT1	WW12-130-CP2		
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted	Accepted		
Homogeneity:	Layered/ Separable			
Color:	Tan, Blue			
Texture:	Compact, Crumbly			
Description:	Tile			
ASBESTIFORM MINERALS				
% Chrysotile	Trace			
% Amosite				
% Crocidolite				
% Tremolite-Actinolite				
% Anthophyllite				
% TOTAL ASBESTOS	Trace			

Client Sample No. 47224 was prepared by Gravimetric reduction
 ND = None Detected Trace = <0.5%

Method:
 Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/05
 Date Analysed:
 Date Reported: Mar 16/05

ENTECH

A Division of Agri-Service Lab Inc.
 6020 Kilmel Rd., Unit 84
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å


SAMPLE ID		
Entech Sample ID	47724	
Client Sample ID	WW12-130-CP2	
SAMPLE DESCRIPTION		
Homogeneity:	Layered / Inseparable	
Color:	White, Brown	
Texture:	Fibrous, Flaky	
Description:	Material	
SAMPLE PREP		
Starting Weight (g)	0.3096	
Residue Weight(g)	0.1519	
Weight Percent Residue :	49.06	
PERCENT ASBESTOS DETECTED IN RESIDUE		
Chrysotile	0.44	
Amosite	0	
Crocidolite	0	
Actinolite-Tremolite	0	
Anthropyllite	0	
TOTAL IN RESIDUE	0.4	
ASBESTOS PERCENT IN SAMPLE	0.2	

ND = None Detected

Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analysed by: Fleckin Environmental Ltd.


 Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis

Client: XCG-Oakville
Attention: Andrew K.
Project: 3-338-128-01
P.O.:
Sample Type: Insulation
Date Received: Feb 28/05
Date Reported: March 03/05



Sam Sanyal, M.Sc., C. Chem.
Manager, Inorganic Analysis

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			COMMENTS
		ASBESTOS	OTHER		
47716 WW12-209-PR1	Homogeneous, brown, layered paper.	None detected	Cellulose Non-fibrous material	>75% 0.5-5%	
47717 WW12-209-PE1	Homogeneous, grey, soft, cementitious material.	Chrysotile	Non-fibrous material	50-75% 25-50%	Cotton fabric reinforcement is present on the surface of this sample
47718 WW12-209-PE2	Homogeneous, grey, soft, cementitious material.	Chrysotile	Non-fibrous material	50-75% 10-25% 10-25% 0.5-5%	
47720 WW12-113-CT1	Homogeneous, beige, layered, compressed, fibrous material.	None detected	Cellulose Mineral Wool Perlite Other non-fibrous material	50-75% 10-25% 10-25% 0.5-5%	

None Detected = <0.5% (MDL)

Analysed by: Pinchin Environmental

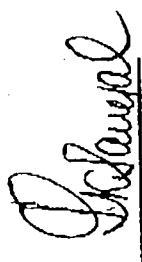
In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and

USEPA Method: 600/R-83/116 dated - July 1993

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-338-126-01
 P.O.:
 Sample Type: Paint
 Date Received: Feb 29/05
 Date Analysed: March 01-02/05
 Date Reported: March 03/05

ENTECH

A Division of Agri-Service Lab Inc.
 5428 Kitchener Rd., Unit #4
 Mississauga, ONT L5N 3W3
 TEL: (905) 821-1112
 FAX: (905) 821-2095


 Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)									
			Expected	Found	Recovery	47705	47707	47708	47710	47713	47714	47715	47719	
Lead in Paint Chips	20	5000	233	229	98	97	18087	25.2	<20	<20	874	60.5	25.5	WW12-209-WP1
														WW12-133-WP3
														WW12-133-WP2
														WW12-133-WP1
														WW12-125-FP1
														WW12-124-DT1
														WW12-115-DT1
														WW12-DT1

Sample Disposal: 30 Days from the Reporting Date
 Analytical: MR, PY
 Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
 Lead in Paint Chips - ICP-AES/Digestion

A Division of Agri-Service Lab Inc.
6820 Kilmer Rd., Unit #4
Mississauga, ONT L5N 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

David

**Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis.**

Data Pertain To Specific Sample(s) Tested

[illegible]

Sample Disposal: 30 Days from the Reporting Date

Analysis: IR, ^1H

Analyst(s): MR, P
Note: - Department of Housing and Urban Development, Sept. 1990 (USA).



PHOTO 1: WW12 – Room 209 – An example of the pipe elbows and joints in poor condition. They were found to contain between 50 and 75 % chrysotile.



PHOTO 2: WW12 – Room 209 – Another example of the pipe elbows and joints in poor condition. They were found to contain between 50 and 75 % chrysotile.

APPENDIX 29
WW13 – CAFETERIA BUILDING

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS



6820 Kitchener Rd., Unit #4
Mississauga, Ontario, Canada
L5N 5M3

TEL: (905) 821-1112
FAX: (905) 821-1095

NOF CUSTODY RECORD[QC-2(2)]

16 CONJUNCTIONS LTD
1620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON, L6H 6Z7
16 AREAS KNOWLEDGE
16 829 8880 x 254 Fax: 905 829 8890
16 ~~PLEASE RETURN ALL SAMPLES TO XCG~~
16 ~~EASE KEEP IN SAME ZIPLOCK BAG~~

Page 1 of 2

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quoter #: AK
Sampled by: AK
Guidelines needed:

Total # of Samples: 17
Anticipated health or chemical hazard:

Analysis Required

Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg. 170/03 applies	Analysis Required		Temp °C	Containers	Lab Number	Entech's Bottle: YES EABUSE ONLY NO
			Filtered Yes/No	Preserved Yes/No		Asbestos (TEM)	Asbestos (PLM)				
WW13-104-FT1	Feb 22/05	Feet of Tile				X			1 Bag	47728	
WW13-104-FT2	"	"				X			"	47729	
WW13-104-WP1	"	Point					X		"	47730	
WW13-104-CP1	"	"					X		"	47731	
WW13-107-WP1	"	"					X		"	47732	
WW13-107-FT1	"	Tile				X			"	47733	
WW13-108-FT1	"	"				X			"	47734	
WW13-108-WP1	"	Point					X		"	47735	
WW13-119-CT1	"	Tile					X		"	47736	
WW13-119-FT1	"	"					X		"	47737	
WW13-130-WP1	"	Point					X		"	47738	
WW13-131-WP1	"	"					X		"	47739	
check line						Date: Feb 28/05		Time: 11 AM		Method of Storage: 10/05	
Signature: [Signature]						Date: Feb 28/05		Time: 11 AM		Method of Storage: 10/05	
Signature: [Signature]						Date: Feb 28/05		Time: 11 AM		Method of Storage: 10/05	

Storage charges may then be applicable.

Specimen Labelled By: [Signature]

1st Apply for 45 days from date of collection.

Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)

16 Sediment/Groundwater/Surface Water/Sludge/Drinking Water etc. - Pls. Specify.

16 Sediment/Groundwater/Surface Water/Sludge/Drinking Water Act-2002/Reg. 169/03

16 (Please call) the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03.

16 Please specify if water samples are to be filtered by lab before analysis.

16 Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.

0 (21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 28/05
 Date Analysed:
 Date Reported: Mar 16/05

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmot Rd., Unit 26
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV


Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47728	47729**	47733	47734**
Client Sample ID	WW13-104-FT1	WW13-104-FT2	WW13-107-FT1	WW13-108-FT1
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted	Accepted	Accepted	Accepted
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	Homogeneous
Color:	White	White	Gray	Gray
Texture:	Compact	Compact	Compact	Compact
Description:	Tile	Tile	Tile	Tile
ASBESTIFORM MINERALS				
% Chrysotile				
% Amosite				
% Crocidolite				
% Tremolite-Actinolite		Trace		Trace
% Anthophyllite				
% TOTAL ASBESTOS	ND	Trace	ND	Trace

** Asbestos was detected in Client Sample No. 47729 and 47734 at a level of <0.1%
 ND = None Detected Trace = <0.5%

Method:

Samples Analyzed by Transmission Electron Microscopy (TEM) using the method, KPA/600/R-93/116.
 Analyzed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-335-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/05
 Date Analysed:
 Date Reported: Mar 16/05

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmat Rd., Unit 24
 Mississauga, ONT L5M 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertains To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV


Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47737	47744		
Client Sample ID	WW13-119-FT1	WW13-144-FT1		
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted	Accepted		
Homogeneity:	Homogeneous	Homogeneous		
Color:	Grey	Tan		
Texture:	Compact	Compact		
Description:	Tile	Tile		
ASBESTIFORM MINERALS				
% Chrysotile		≥10≤20		
% Amosite				
% Crocidolite				
% Tremolite-Actinolite				
% Anthophyllite				
% TOTAL ASBESTOS	ND	≥10≤20		

== Asbestos was detected in Client Sample No. 477 at a level <0.1%
 ND = None Detected Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analysed by: Pluckin Environmental Ltd.

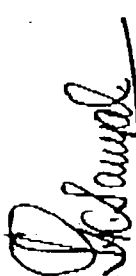


Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

ENTECH

A Division of Agri-Service Lab Inc.
 8259 Kilmord Rd., Unit 84
 Mississauga, ONT L4W 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-126-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 28/06
 Date Reported: March 03/06



Sam Samyal, M.Sc., C. Chem.
 Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			COMMENTS
		ASBESTOS	OTHER		
47736 WW13-119-CT1	Homogeneous, beige, layered, compressed, fibrous material.	None detected	Cellulose Mineral Wool Perlite Other non-fibrous material	50-75% 10-25% 10-25% 0.5-5%	

None Detected = <0.5% (MDL)

Analysed by: Pinchin Environmental

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and
 USEPA Method: 600/R-93/116 dated: July 1993.

ENTECH

A Division of Agri-Service Lab Inc.
6120 Kilmest Rd., Unit #4
Mississauga, ONT L5H 5M3
TEL: (905) 821-1112
FAX: (905) 821-2035

XCG-Oakville
Andrew K.
3-336-126-01

Paint

Feb 28/05

March 01-02/05

March 03/05

Client:

Attention:

Project:

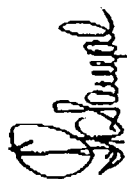
P.O.:

Sample Type:

Date Received:

Date Analysed:

Date Reported:



Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

Data Pertain To Specific Sample[s] Tested													
PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE			SAMPLE DATA (µg/g)							
			Expected	Found	Recovery	47730	47731	47732	47735	47738	47739	47740	47741
			Conc. (µg/g)	Conc. (µg/g)	%	WW13-104- WP1	WW13-104- CP1	WW13-107- WP1	WW13-118- WP1	WW13-130- WP1	WW13-131- WP1	WW13-141- WP1	WW17-1- TR1
Lead in Paint Chips	20	5000	233	229	98	<2	21.4	<20	17800	36	<20	<20	<20

Method:
Lead in Paint Chips - ICP-AES/Digestion

Page:

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): MR, PI

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

A Division of Agri-Service Lab Inc.
8430 Kiltwood Rd., Unit #4
Mississauga, ONT L5N 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

Donald

Certificate of Analysis

SAMPLE DATA (µg/g)

Method:
Lead in Paint Chlps - ICP-AES/Digestion

Note: - Department of Housing and Urban Development, Sept. 1966.

Page 2



PHOTO 1: WW13 – Room 141 – An interior view of the room showing items stored there. The floor paint in this room was noted to be poor and contained a lead concentration of 68,583 ppm.

APPENDIX 30
WW14 – CATHOLIC CHAPEL

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-338-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/05
 Date Analysed:
 Date Reported: March 04/05

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmist Rd., Unit #4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 eV
 Accelerating Voltage: 100 keV

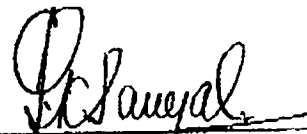
Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47266			
Client Sample ID	WW14-101-FT1			
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted			
Homogeneity:	Homogeneous			
Color:	Grey			
Texture:	Compact			
Description:	Tile			
ASBESTIFORM MINERALS				
% Chrysotile	≥10≤20			
% Amosite				
% Crocidolite				
% Tremolite-Actinolite:				
% Anthophyllite				
% TOTAL ASBESTOS	≥10≤20			

* Sample 42765 was prepared by Gravimetric Reduction.
 ND = None Detected Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analysed by: Pinchin Environmental Ltd.




Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

ENTECH

A Division of Agri-Service Lab Inc.
6820 Kilmuir Rd., Unit 64
Mississauga, ONT L5N 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

Client: XCG-Oakville
Attention: Andreas K
Project: 3-336-128-01
P.O.:
Sample Type: Tile
Date Received: Feb 21/05
Date Reported: Feb 28/05


Sam Sanyal, M. Sc., C. Chem.
Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
47257 WW14-104-CT1	Homogeneous, beige, compressed fibrous material.	None detected	Cellulose >75%	

None Detected = <0.5% (MDL)

Analysed by: *Pinchin Environmental*

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1986 and
USEPA Method: 600R-83/116 dated - July 1993.

No noteworthy photographs were taken in WW14.

APPENDIX 31
WW15 – S.I.S. BUILDING

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS



6820 Killmat Rd., Unit #4
Mississauga, Ontario, Canada
L5N 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

Work Order: 38714
Comments:

of Agent/Service

Inc

AIN OF CUSTODY RECORD[QC-2(2)]

X/G CONSULTANTS LTD
2620 BRISTOL CIRCLE, SUITE 309, OAKVILLE, ON L6H 6Z7
ANDREAS KOURBEMENOU
905 829 8880 x254 FAX: 905 829 8890

(if other than the client)
PLEASE RETURN ALL SAMPLES TO X/G *
PLEASE KEEP IN SAME ZIPLOCK BAG *
* * *

Client P.O.#:
Client Project #: 3-336-126-01
Entech Quoter#: AK
Sampled by: AK
Guidelines needed:

Total # of Samples: 15
Anticipated health or chemical hazard:

Page (12)

Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg 170/03 applies	Analysis Required		Temp °C	Containers	Lab Number	Entech's Bottle: YES NO
			Filtered Yes/No	Preserved Yes/No		Asbestos (PCM)	Asbestos (TEM)				
WMS-101-WP1	Feb 11/01	Point								47319	
WMS-101-FT1	"	Tile				X	X			47320	
WMS-101-FT2	"	"				X	X			47321	
WMS-101-FT3	"	"				X	X			47322	
WMS-102-PE1	"	Ins				X	X			47323	
WMS-102-PE2	"	"				X	X			47324	
WMS-103-FT1	"	Tile				X	X			47325	
WMS-103-FT2	"	"				X	X			47326	
WMS-111-WP1	"	Point				X	X			47327	
WMS-111-CP1	"	"				X	X			47328	
WMS-113-ST1	"	"				X	X			47329	
WMS-113-DU1	"	Ins				X	X			47330	
Around Time					Retained by Entech		Date		Time		Marked of Sample
-7 Working Days					(Sign)		penelope		4:30 PM		OK
Specify O					Received by Entech		Date		Time		Condition
Lab					(Sign)		penelope		6:30 PM		OK

WMS Apply for 45 days Turnaround Time. Samples tested by

WMS: Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)

WMS: Sediment/Groundwater/Surface Water/EMU/Drinking Water etc. - Pla. Specify.

WMS: Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03.

WMS: Please specify if water samples are to be filtered by lab before analysis.

WMS: Unless specified otherwise, all water samples will not be considered as Drinking Water, as defined in R170/03.

4.0 (21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/05
 Date Analysed:
 Date Reported: March 08/05
 Date Revised: Mar 16/05

ENTECH

A Division of Agri-Service Lab Inc.
 6826 Kilmer Rd., Unit 26
 Mississauga, ONT L5M 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertains To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV


Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID	47320	47321	47322	47325	47326
Entech Sample ID					WW15-103-FT2
Client Sample ID	WW15-101-FT1	WW15-101-FT2	WW15-101-FT3	WW15-103-FT1	
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted	Accepted	Accepted	Accepted	Accepted
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	Homogeneous	Homogeneous
Color:	Tan	Tan	White	Tan	White
Texture:	Compact	Compact	Compact	Compact	Compact
Description:	Floor Tile	Floor Tile	Floor Tile	Floor Tile	Floor Tile
ASBESTIFORM MINERALS					
% Chrysotile		≥10≤20		≥10≤20	
% Amosite					
% Crocidolite					
% Tremolite-Actinolite					
% Anthophyllite					
% TOTAL ASBESTOS	ND	≥10≤20	ND	≥10≤20	ND

ND = None Detected

Trace = <0.5%

Method:
 Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analysed by: Pinchin Environmental Ltd


 Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-338-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/05
 Date Analysed:
 Date Reported: March 08/05

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmuir Rd., Unit #4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm- λ

SAMPLE ID					
Entech Sample ID	47331	47333			
Client Sample ID	WW15-113-F1	WW15-115-F1			
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted	Accepted			
Homogeneity	Homogeneous	Homogeneous			
Color:	White	White			
Texture:	Compact	Compact			
Description:	Floor Tile	Floor Tile			
ASBESTIFORM MINERALS					
% Chrysotile					
% Amosite					
% Crocidolite					
% Tremolite-Actinolite:					
% Anthophyllite					
% TOTAL ASBESTOS	ND	ND			

ND = None Detected

Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.




Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

ENTECH

A Division of Agri-Service Lab Inc.
6120 Kibinet Rd., Unit #4
Mississauga, ONT L5H 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

Client: XCG-Oakville
Attention: Andreas K
Project: 3-336-128-01
P.O.:
Sample Type: Insulation
Date Received: Feb 21/05
Date Reported: Feb 28/05


Sam Sanyal, M. Sc., C. Chem.
Manager, Inorganic Analysis

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
47323 WW15-102-PE1	Homogeneous, grey, soft, cementitious material.	Chrysotile 50-75%	Non fibrous material 25-50%	
47324 WW15-102-PE2	Homogeneous, grey, soft, cementitious material.	Chrysotile 50-75%	Non fibrous material 25-50%	
47330 WW15-113-DU1	Homogeneous, yellow, fibrous material.	None detected	Fibreglass Non-fibrous material >75% 0.5-5%	
47332 WW15-114-PR1	Homogeneous, grey, soft, cementitious material.	Chrysotile >75%	Non fibrous material 10-25%	Cellulose fibre is present on the surface of this sample.

None Detected = <0.5% (MDL)

Analyzed by: *Pinchin Environmental*

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and
USEPA Method: 600/R-93/116 dated - July 1993.

ENTECH

A Division of Agri-Service Lab Inc.
 8428 Kilmont Rd., Unit #4
 Mississauga, ONT L4M 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-126-01
 P.O.
 Sample Type: Paint
 Date Received: Feb 21/05
 Date Analysed: Feb 23-24/05
 Date Reported: Feb 28/05



Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)						
			Expected	Found	Recovery	Blank	47319	47327	47328	47329	47329
			Conc. (µg/g)	Conc. (µg/g)	%		WW16-101- WP1	WW15-111- WP1	WW16-111- CP1	WW15-113- STA1	WW16-113- STA1 Duplicate
Lead In Paint Chips	20	5000	233	225	96	<20	929	1382	53	838	779

Sample Disposal: 30 Days from the Reporting Date.

Analysis: MR, PS

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
 Lead in Paint Chips - ICP-AES/Digestion



PHOTO 1: WW15 – Room 102 – A pipe elbow which, along with others, contained between 50 and 75% chrysotile asbestos. The elbow was noted to be in fair condition.

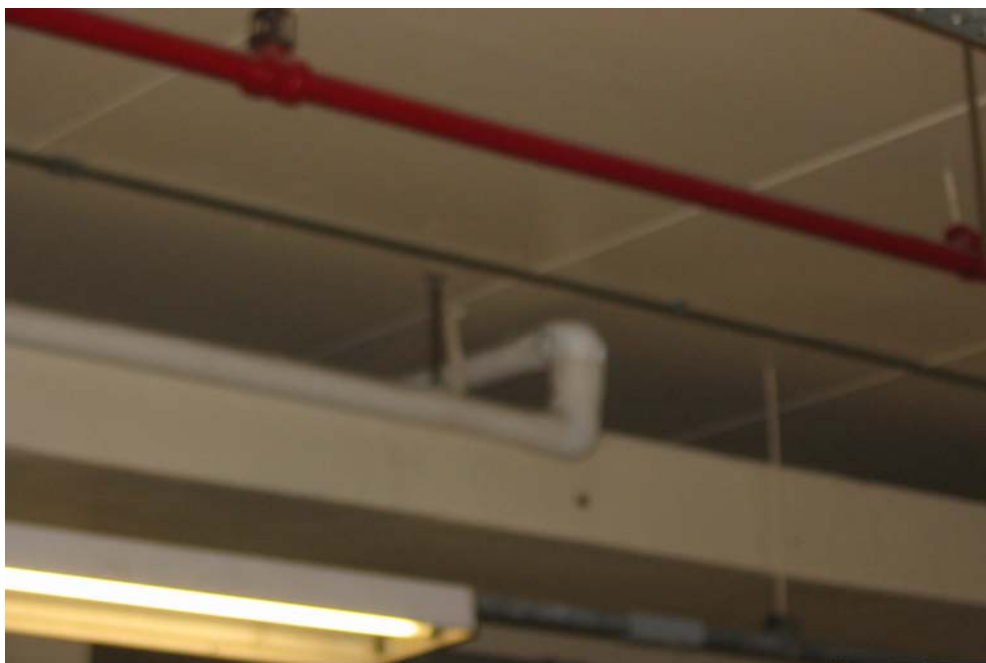


PHOTO 1: WW15 – Room 114 – Part of the pipe run that was found to contain more than 75% chrysotile asbestos. The pipe run was found to be in good condition.

APPENDIX 32
WW16 – PROTESTANT CHAPEL

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

INTECH

Division of Agriculture
Very Inc.

6820 Kitimat Rd., Unit #4
Mississauga, Ontario, Canada
LSN 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

CHAIN OF CUSTODY RECORD[QC-2(2)]

Client: XCG CONSULTANTS LTD
Address: 2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
Phone: 905 829 8890 Fax: 905 829 8890
Sample ID: AK
Date: 2003-12-18

Page () of ()

Client P.O.#: 3-336-128-01
Total # of Samples: 1
Anticipated health or chemical hazard:
Entech Quote#: AK
Sampled by: AK
Guidelines needed:

Sample	Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg. 170 /03 applies	Analysis Required												Temp °C	Containers	Lab Number
				Filtered Yes/No ***	Preserved Yes/No		Entech's Bottles: YES NO														
1	WW16-105-FT1	Feb 10/03	Tile																		
2	WW16-106-FT1	"	Tile																		
3	WW16-107-STW1	"	Sludge																		
4	WW16-108-CT1	"	Tile																		
5	WW16-201-PE1	"	Env.																		
6																					
7																					
8																					
9																					
10																					
11																					
12																					
Relinquished to Entech (sign)				Received by Entech (sign)				Date: <u>Feb 10/03</u> Time: <u>4:40 pm</u> Method of Shipment: <u>Express</u>													
Relinquished to Entech (sign)				Received by Entech (sign)				Date: <u>Feb 10/03</u> Time: <u>4:40 pm</u> Condition: <u>Good</u>													

Charges Apply for <5 days Turnaround Time.
E: Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)
S: Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03
b) Please specify if water samples are to be filtered by lab before analysis.
Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.
4.0 (21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 18/05
 Date Analysed:
 Date Reported: March 02/05

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmer Rd., Unit 24
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47129	47130		
Client Sample ID	WW16-105-FT1	WW16-106-FT1		
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted	Accepted		
Homogeneity:	Homogeneous	Homogeneous		
Color:	Tan	Tan		
Texture:	Compact	Compact		
Description:	Tile	Tile		
ASBESTIFORM MINERALS				
% Chrysotile	*Trace	>10%20		
% Amosite				
% Crocidolite				
% Tremolite-Actinolite				
% Anthophyllite				
% TOTAL ASBESTOS	*Trace	>10%20		

ND = None Detected

Trace = <0.50%

Method:

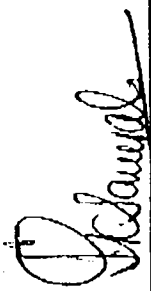
Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Stucco
 Date Received: Feb 18/05
 Date Reported: Feb 28/05


 Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
47131 WW16-107-STU1	Homogeneous, white, soft, cementitious material.	None Detected	Non-fibrous material > 75%	
47132 WW16-108-CT1	Homogenous, beige, compressed fibrous material.	None Detected	Cellulose 25-50% Mineral Wool 50-75% Non-fibrous material 0.5-5%	
47133 WW16-201-PEI	Homogenous, beige, soft, cementitious material.	Chrysotile > 75%	Non-fibrous material 10-25%	

None Detected = <0.5% (MDL)

Analysed by: *Pinchin Environmental*

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and USEPA Method: 600/R-83/116 dated - July 1993.



PHOTO 1: WW16 – Room 201 – Pipe elbows in the room noted to be in good condition. The elbows contained more than 75% chrysotile asbestos

APPENDIX 33
WW17 – EDUCATION AND LIBRARY BUILDING

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

Work Order: 38775
Comments:

Page () of ()

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Entech Quote#: AK
Sampled by: AK
Guidelines needed:

AIN OF CUSTODY RECORD[QC-2(2)]

X/G CONSULTANTS LTD
2670 BRISTOL GLENNE SUITE 300 DAVENUE, ON L6H 6Z7
AUBREAS KOURBEMEN
905 829 8890
905 829 8890
Fax: 905 829 8890

PLEASE RETURN ALL SAMPLES TO X/G
PLEASE KEEP IN SAME ZIPLOCK BAGS
IF OTHER (than the client)
PLEASE RETURN ALL SAMPLES TO X/G
PLEASE KEEP IN SAME ZIPLOCK BAGS

Pic	Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg. 170/03 applies	Analysis Required		Temp °C	Container	Lab Number	Entech's Bottle: YES NO	EAB/USE ONLY
				Filtered Yes/No	Preserved Yes/No		Asbestos (TEM)	Asbestos (PM)					
1	WU1-101-FT1	Feb 28/05	Tile				X			1 bag	47745		
2	WU1-101-WP1	"	Paint				X				47746		
3	WU1-102-FT1	"	Tile				X				47747		
4	WU1-103-CT1	"	"				X				47748		
5	WU1-103-FT1	"	"				X				47749		
6	WU1-103-WP1	"	Paint				X				47750		
7	WU1-112-WP1	"	"				X				47751		
8	WU1-115-WP1	"	"				X				47752		
9	WU1-115-WP2	"	"				X				47753		
10	WU1-120-FT1	"	"				X				47754		
11	WU1-120-WP1	"	"				X				47755		
12	WU1-139-FT1	"	Tile				X				47756		
<p>Signature: <u>check, done</u> Date: <u>Feb 28/05</u> Time: <u>11 AM</u> Method of shipment: <u>Express</u></p> <p>Signature: <u>Sumita</u> Date: <u>Feb 28/05</u> Time: <u>11 AM</u> Condition: <u>QC</u></p> <p>Signature: <u>Sumita</u> Date: <u>Feb 28/05</u> Time: <u>2 PM</u></p>													

Storage charged may then be applicable.

30 days after reporting of results unless specifically requested by client. (Storage charged may then be applicable.)

DATE: Sample will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charged may then be applicable.)

IF SAMPLES ARE NOT SUBMITTED BY THE DEADLINE, THE CLIENT WILL BE RESPONSIBLE FOR THE COST OF STORAGE AND RETENTION OF THE SAMPLES.

2) Prior to the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03.

3) Please specify if water samples are to be filtered by lab before analysis.

4) Unless specified otherwise, all water samples will not be considered as Drinking Water, as defined in R170/03.

5) Unless specified otherwise, all water samples will not be considered as Drinking Water, as defined in R170/03.

6) Unless specified otherwise, all water samples will not be considered as Drinking Water, as defined in R170/03.

7) Unless specified otherwise, all water samples will not be considered as Drinking Water, as defined in R170/03.

8) Unless specified otherwise, all water samples will not be considered as Drinking Water, as defined in R170/03.

9) Unless specified otherwise, all water samples will not be considered as Drinking Water, as defined in R170/03.

10) Unless specified otherwise, all water samples will not be considered as Drinking Water, as defined in R170/03.

11) Unless specified otherwise, all water samples will not be considered as Drinking Water, as defined in R170/03.

12) Unless specified otherwise, all water samples will not be considered as Drinking Water, as defined in R170/03.

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-338-128-01
 P.O.:
 Sample Type: Floor Tile
 Date Received: Feb 28/06
 Date Analysed: -
 Date Reported: Mar 18/06
 Date Revised: Mar 23/06

ENTECH

A Division of Agri-Service Lab Inc.
 6828 Kilmat Rd., Unit 24
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 µm
 Camera Constant: 29.6 mm-Å

SAMPLE ID					
Entech Sample ID	47745	47747	47749	47756	
Client Sample ID	WW17-101-FT1	WW17-102-FT1	WW17-103-FT1	WW17-139-FT1	
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted	Accepted	Accepted	Accepted	
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	Homogeneous	
Color:	Tan	Blue	Grey	Grey	
Texture:	Compact	Compact	Compact	Compact	
Description:	Tile	Tile	Tile	Tile	
ASBESTIFORM MINERALS					
% Chrysotile	Trace				
% Amosite					
% Crocidolite					
% Tremolite-Actinolite:					
% Anthophyllite					
% TOTAL ASBESTOS	Trace	ND	ND	ND	

Chrysotile was detected in client sample No. 47745 at a level of <0.1%

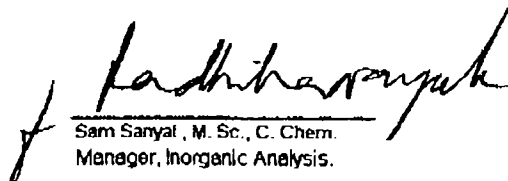
ND = None Detected

Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.


 Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

A Division of Agri-Service Lab Inc.
8820 Midway Rd., Unit #4
Mississauga, ONT L5N 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

Donald

**Sam Sanyal, M. Sc., C. Chem.
Manager, Inorganic Analysis.**

Data Pertains To Specific Sample(s) Tested


[illegible]

Page 1 of 1

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-126-01
 P.O.:
 Sample Type: Paint
 Date Received: Feb 28/05
 Date Analysed: March 01-02/06
 Date Reported: March 03/06

ENTECH

A Division of Agri-Service Lab Inc.
 6428 Kilomet Rd., Unit 26
 Mississauga, ONT L5N 3W3
 TEL: (905) 821-1112
 FAX: (905) 821-2095



Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE			SAMPLE DATA (µg/g)							
			Expected Cone. (µg/g)	Found Cone. (µg/g)	Recovery %	Blank	47746 WW17-101- WP1	47750 WW17-103- WP1	47751 WW17-112- WP1	47752 WW17-115- WP1	47753 WW17-115- WP2	47754 WW17-120- FP1	47755 WW17-120- WP1
Lead in Paint Chips	20	5000	233	229	98	<20	4432	1704	110	1322	38.1	54.1	47.0

Sample Disposal: 30 Days from the Reporting Date.

Analysis by: MR, PT

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
 Lead in Paint Chips - ICP-AES/Digestion

No noteworthy photographs were taken in WW17.

APPENDIX 34
WW18 – INDUSTRIAL SHOPS BUILDING

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

Work Order#:

Comments:

Total # of Samples: 27

Client Project #:	3-336-126-01
Entech Quote#:	
Sampled by:	AK
Guidelines needed:	

Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg. 170.03 applies	Analysis Required		Enrich's Bottles YES	NO
			Filtered Yes/No	Preserved Yes/No		Temp °C	Containers		
WM18-101-WP1	12/11/08	Paint							
WM18-101-WP2	"	"							
WM18-101-PK1	"	Ins							
WM18-106-WP1	"	Paint							
WM18-106-WP2	"	"							
WM18-108-COL1	"	"							
WM18-108-P1	"	"							
WM18-111-WP1	"	"							
WM18-116-WP1	"	"							
WM18-116-WP2	"	"							
WM18-116-TRI	"	"							
WM18-117-FT1	"	Tile							

Analysis Required

Asbestos (TEM)

Lead

Check: *[Signature]*

Time: 12:30 PM

Date: 12/11/08

Condition: OK

Time: 7:30 PM

Date: 12/11/08

Warrant Apply for <3 days Torture/Seizure Time	Sample Logged By	For use as specifically requested by client. (Storage charges may then be applicable.)

: Samples will only be retained for 30 days after reporting a result. **Water/Taps/Drinking Water etc. - Pls. Specify.**

il/Sediment/Groundwater/Surface Water Act-2002/Reg. 169/03

Please call the Laboratory before submitting any samples. If water samples are to be filtered by lab before analysis.

Please specify if water samples are to be collected otherwise, all water samples will not be considered as Drinking Water as defined in R17003.

1.0 (21 Apr. 2004)



6920 Kiltmat Rd., Unit #4
Mississauga, Ontario, Canada
LSN 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

Page 3 of 4

IN OF CUSTODY RECORD[QC-2(2)]

XCG CONSULTANTS LTD
2620 BRISTOL CIRCLE SUITE 300 DAVENP, ON L6H 6Z7
ANDREAS KOUBEK
905 829 8890 X 254 Fax: 905 829 8890

PLEASE RETURN ALL SAMPLES TO XCG
PLEASE KEEP IN SAME ZIP LOCK BAGS

Client P.O.#:
Client Project #: 3-336-126-01
Entech Quote#: AK
Sampled by: AK
Guidelines needed:

Total # of Samples:
Anticipated health or chemical hazard:

Analysis Required

Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg. 170/03 applies	Analysis Required		Temp °C	Containers	Lab Number	Entech's Bottles	
			Filtered Yes/No	Preserved Yes/No		Asym (PM)	Asym (FM)				Number of	YES NO
WW18-141-PT1	Feb 11/03	Tile				X				47377		
WW18-142-WP1	"	Paint					X			47378		
WW18-143-PT1	"	Tile				X				47379		
WW18-144-WP1	"	Paint					X			47380		
WW18-145-PT1	"	Tile				X				47381		
WW18-146-PP1	"	Paint					X			47382		
WW18-146-WP1	"	"					X			47383		
WW18-146-PR1	"	Ins				X				47384		
WW18-148-PT1	"	Tile					X			47385		
WW18-153-WP1	"	Paint				X				47386		
WW18-153-PE1	"	Ins					X			47387		
WW18-154-TR1	"	Paint					X			47388		
Refrigerated in Dark (Light)						check: passed						
Refrigerated by Entech (Light)						Sunita						
Sample Logged By:						Sunita						
Apply for 30 days Turnaround Time.						Sunita						
Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)						Sunita						
Sediment/Groundwater/Surface Water/Drinking Water etc. - Pls. Specify.						Sunita						
Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03.						Sunita						
Please specify if water samples are to be filtered by lab before analysis.						Sunita						
Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.						Sunita						
1.0 (21 Apr. 2004)						Sunita						

See Overall



6820 Klumath Rd., Unit #4
Mississauga, Ontario, Canada
LSN 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

Client Name

IN OF CUSTODY RECORD[QC-2(2)]

XCG CONSULTANTS LTD
2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON, L6H 6Z7
ANDREAS KOURKEMENOS
905 829 8880 x 254 Fax: 905 829 8890

(if other than the client)
PLEASE RETURN ALL SAMPLES TO XCG
PLEASE KEEP IN SAME ZIPLOCK BAG

Client P.O. #:

Client Project #:

Entech Quote #:

Sampled by:

Guidelines needed:

Total # of Samples:

Anticipated health or chemical hazard:

Page (4) of 4

Work Order:

Comments:

Analysis Required

Asbestos (TBM)
Asbestos (PM)
LEAD

Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg. 170 (M) applies	Entech's Bottle: YES		Lab Number
			Filtered Yes/No	Preserved Yes/No		Number of	Containers	
WW18-201-PE1	Feb 11/05	Ins						47389
WW18-201-PE2	"	"						47390
WW18-201-PE3	"	"						47391
WW18-201-JE1	"	"						47392
WW18-201-ET1	"	Tile						47393
WW18-208-ET1	"	"						47394
WW18-208-WP1	"	Paint						47395
WW18-210-CT1	"	Tile						47396
Date Received: Feb 11/05 Time: 9:30 PM Method of Delivery: Express								
Date Received: Feb 11/05 Time: 4:30 PM Condition: OK								
Date: 4 Time: 4								

Around Time

Working Days

Specify

Lab

Check: Paul

Sumita

Sumita

Samples Logged By

Apply for 3 days Turnaround Time

Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)

i/Sediment/Groundwater/Surface Water/Effluent/Drinking Water etc. - Ph. Specify.

Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03

Please specify if water samples are to be filtered by lab before analysis.

Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170003.

0 (21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/05
 Date Analysed:
 Date Reported: Mar 15/05

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmat Rd., Unit #6
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2085

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 kV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47364	47365	47366**	47367
Client Sample ID	WW18-117-F1	WW18-117-F2	WW18-117-F3	WW18-118-F1
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted	Accepted	Accepted	Accepted
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	Homogeneous
Color:	Tan	Tan	Tan	Tan
Texture:	Compact	Compact	Compact	Compact
Description:	Tile	Tile	Tile	Tile
ASBESTIFORM MINERALS				
% Chrysotile	≥10≤20		Trace	≥5≤10
% Amosite				
% Crocidolite				
% Tremolite-Actinolite			Trace	
% Anthophyllite				
% TOTAL ASBESTOS	≥10≤20	ND	Trace	≥5≤10

** Comments: Asbestos was detected in Client Sample No. 47366 at a level <0.1%

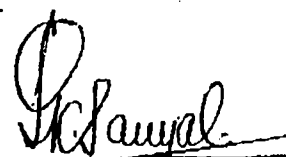
ND = None Detected

Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.


 Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-335-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/05
 Date Analysed:
 Date Reported: Mar 16/05

ENTECH

A Division of Agri-Service Lab Inc.
 6826 Kilmet Rd., Unit #4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47370	47371	47374**	47375
Client Sample ID	WW18-134-FT1	WW18-134-FT2	WW18-137-FT1	WW18-139-FT1
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted	Accepted	Accepted	Accepted
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	Homogeneous
Color:	Tan	White	White	Grey
Texture:	Compact	Compact	Compact	Compact
Description:	Tile	Tile	Tile	Tile
ASBESTIFORM MINERALS				
% Chrysotile	≥10≤20	≥10≤20		≥10≤20
% Amosite				
% Crocidolite				
% Tremolite-Actinolite:			Trace	
% Anthophyllite				
% TOTAL ASBESTOS	≥10≤20	≥10≤20	Trace	≥10≤20

** Asbestos was detected in Client Sample No. 47374 at a level <0.1%
 ND = None Detected Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-338-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/05
 Date Analysed:
 Date Reported: Mar 15/05

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilham Rd., Unit #6
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47377**	47379**	47381**	47385**
Client Sample ID	WW18-141-FT1	WW18-143-FT1	WW18-145-FT1	WW18-148-FT1
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted	Accepted	Accepted	Accepted
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	Homogeneous
Color:	Tan	Tan	Tan	Tan
Texture:	Compact	Compact	Compact	Compact
Description:	Tile	Tile	Tile	Tile
ASBESTIFORM MINERALS				
% Chrysotile	Trace	Trace	Trace	Trace
% Amosite				
% Crocidolite				
% Tremolite-Actinolite:		Trace	Trace	Trace
% Anthophyllite				
% TOTAL ASBESTOS	Trace	Trace	Trace	Trace

** Asbestos was detected in Client Sample No. 47377,47379,47381,47385 at a level <0.1%

ND = None Detected

Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/05
 Date Analysed:
 Date Reported: Mar 16/05

ENTECH

A Division of Agri-Service Lab Inc.
 6420 Kilmor Rd., Unit #4
 Mississauga, ONT L4N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

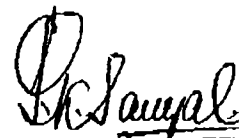
Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47393	47394**	47396	
Client Sample ID	WW18-207-FT1	WW18-208-FT1	WW18-210-CT1	
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted	Accepted	Accepted	
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	
Color:	Tan	White	Tan	
Texture:	Compact	Compact	Compact	
Description:	Tile	Tile	Tile	
ASBESTIFORM MINERALS				
% Chrysotile	≥5≤10	Trace		
% Amosite				
% Crocidolite				
% Tremolite-Actinolite		Trace		
% Anthophyllite				
% TOTAL ASBESTOS	≥5≤10	Trace	ND	


** Asbestos was detected in Client Sample 47394 at a level <0.1%
 ND = None Detected Trace = <0.5%

Method:
 Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-126-01
P.O.:
Sample Type: Insulation
Date Received: Feb 21/05
Data Reported: Feb 28/05


Sam Sanyal, M. Sc., C. Chem.
Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
47355 WW18-101-PR1	Homogeneous, brown, soft, cementitious material.	None detected	Cellulose 25-50% Non-fibrous material 50-75%	
47384 WW18-146-PR1	Homogeneous, grey, soft, cementitious material.	Chrysotile >75%	Non-fibrous material 10-25%	
47384 WW18-153-PE1	Multilayered with 2 Phases: a) brown paper b) black tar impregnated paper.	None detected	Cellulose >75% D.S. Non-fibrous material 5%	
47389 WW18-201-PE1	Homogeneous, grey, soft, cementitious material.	Chrysotile >75%	Cellulose >75% Tar and other non-fibrous material 5-10%	
47390 WW18-201-PE2	Homogeneous, grey, soft, cementitious material.	Chrysotile >75%	Non-fibrous material 10-25%	
47391 WW18-201-PE3	Homogeneous, grey, soft, cementitious material.	Chrysotile >75%	Non-fibrous material 10-25%	

None Detected = <0.5% (MDL)

Analyzed by: *Phred Environmental*

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and USEPA Method: 800/R-83/116 dated - July 1993.

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmuir Rd., Unit #4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-338-126-01
 P.O.:

Sample Type: Insulation
 Date Received: Feb 21/05
 Date Reported: Feb 28/05



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
47392 WW18-201-JE1	Homogeneous, grey, soft, cementitious material.	Chrysotile >75%	Non-fibrous material 10-25%	

None Detected = <0.5% (MDL)

Analysed by: Pinchin Environmental

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and
 USEPA Method: 800/R-83/116 dated - July 1993.

ENTECH

A Division of Agri-Service Lab Inc.
6428 Kilmist Rd., Unit #4
Mississauga, ONT L4W 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-126-01
P.O.:

Sample Type: Paint
Date Received: Feb 21/05
Date Analysed: Feb 23-24/05
Date Reported: Feb 28/05



Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)									
			Expected	Found	Recovery	47353	47354	47356	47357	47358	47359	47360	47361	
	Limit (µg/g)		Conc. (µg/g)	Conc. (µg/g)	%	WW18-101- WP1	WW18-101- WP2	WW18-106- WP1	WW18-106- WP2	WW18-106- COL1	WW18-106- P1	WW18-111- WP1	WW18-118- WP1	
Lead in Paint Chips	20	5000	233	225	96	4191	3502	8889	12509	451	1817	311	3937	


Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): MR, PS

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
Lead in Paint Chips - ICP-AES/Digestion

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-128-01
Sample Type: Paint
Date Received: Feb 21/06
Date Analysed: Feb 23-24/06
Date Reported: Feb 28/06
Date Revised: Feb 28/06


Sam Sanyal, M.Sc., C. Chem.
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)									
			Expected	Found	Recovery	47362	47363	47368	47389	47372	47373	47376	47378	
			Conc. (µg/g)	Conc. (µg/g)	%	WW18-115- WP2	WW18-116- TR1	WW18-126- WP1	WW18-128- WP1	WW18-134- WP1	WW18-135- WP1	WW18-140- WP1	WW18-142- WP1	
Lead in Paint Chips	20	5000	233	225	96	3203	1751	500.4	378	475	2446	2561	11399	

Sample Disposal: 30 Days from the Reporting Date.
Analyst(s): MR, PS
Note: * - Department of Housing and Urban Development, Sept. 1990 (USA)

Method:
Lead in Paint Chips - ICP-AES/Digestion

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-308-128-01
P.O.:
Sample Type: Paint
Date Received: Feb 21/06
Date Analysed: Feb 23-24/06
Date Reported: Feb 28/06

Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)							
			Expected	Found	Recovery	Blank	47380	47382	47383	47386	47388	47395
Lead in Paint Chips	20	5000	Conc. (µg/g)	Conc. (µg/g)	%		WW18-144- WP1	WW18-146- DP1	WW18-148- WP1	WW18-153- WP1	WW18-184- TR1	WW18-208- WP1
			233	225	96	<20	13060	9823	403	4218	25863	113

Sample Disposal: 30 Days from the Reporting Date

Analyst(s): MR, PS

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
Lead in Paint Chips - ICP-AES/Digestion

A Division of Agri-Service Lab Inc.
6229 McHear Rd., Unit #4
Mississauga, ONT L5M 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

David

Sam Samya, M.Sc., C. Chem
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

[illegible]

Method:
Lead in Paint Chips - ICP-AES Digestion

Sample Disposal: 30 Days from the Reporting Date.

ANALYSTS: MR, PS

Notes: * - Department of Housing and Urban Development, Sept. 1990 (USA).

TOTAL P.04



PHOTO 1: WW18 – Room 142 – Light brown paint on lower half of the wall was found to contain a lead concentration of 11,399 ppm. The paint was in fair condition.



PHOTO 2: WW18 – Room 201 – A disassembled pipe elbow that contained greater than 75% chrysotile asbestos. There were other elbows and joints that were noted to be in fair or poor condition.

APPENDIX 35
WW19 – MAINTENANCE GARAGE

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

CHAIN OF CUSTODY RECORD[QC-2(2)]

Client: XCG CONSULTANTS LTD
Address: 2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
Contact: ANDREAS KOURBEMENOS
Phone: 905 829 8880 x 254 Fax: 905 829 8890
Signature to (if other than the client):

Client P.O.#: 3-336-128-01
Entech Project #: 3-336-128-01
Entech Quote#: AK
Sampled by: AK
Guidelines needed:

Total # of Samples:

Anticipated health or chemical hazard:

Page (1) of (2)

Sample #	Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg.170/03 applies+	Analysis Required												Entech's Bottles: YES NO	Sample Number of Containers	Temp °C	Lab Number	
				Filtered Yes/No ***	Preserved Yes/No		LEAD																
1	WW19-101-WP1	FEB 10 2003	PAINT																				
2	WW19-102-WP1	"	"																				
3	WW19-103-WP1	"	"																				
4	WW19-108-DP1	"	"																				
5	WW19-110-PP1	"	"																				
6	WW19-110-FP1	"	"																				
7	WW19-111-WP1	"	"																				
8	WW19-113-WP1	"	"																				
9	WW19-126-DP1	"	"																				
10	WW19-131-WP1	"	"																				
11	WW19-131-WP2	"	"																				
12	WW19-133-WP1	"	"																				
Turnaround Time		Relinquished to Entech (sign)		Received by Entech (sign)		Samples Logged By:		Charges Apply for <5 days Turnaround Time.												Time: 4:40pm		Method of Shipping: <u>Reg. 012</u>	
5-7 Working Days								TE: Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)												Time: 4:49pm		Condition: <u>OK</u>	
Site: Specify a								1) Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03															
Intact Lab								2) Please specify if water samples are to be filtered by lab before analysis.															
								3) Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.															
								4.0 (21 Apr. 2004)															

CHAIN OF CUSTODY RECORD[QC-2(2)]

Client P.O.#: _____ Total # of Samples: _____
 Client Project #: 3-536-128-01 Anticipated health or chemical hazard: _____
 Entech Quote#: _____
 Sampled by: AK
 Guidelines needed: _____

Page (2) of (3)

*Return all samples to VCH
Keep samples together in this same large ziplock bag*

Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg-170 /03 applies	Analysis Required		Temp °C	Containers	Lab Number
			Filtered Yes/No ***	Preserved Yes/No		Asbestos (PLM)	Asbestos (TEM)			
1 WW19-261-WP1	FEB 10 05	PANT				X				
2 WW19-202-WP1	"	"				X				
3 WW19-204-WP1	"	"				X				
4 WW19-001-FT1	"	Tile								
5 WW19-102-CT1	"	"				X				
6 WW19-103-CT1	"	"				X				
7 WW19-104-FT1	"	"				X				
8 WW19-125-FT1	"	"				X				
9 WW19-133-FT1	"	"				X				
10 WW19-133-PB1	"	Ins				X				
11 WW19-133-PE1	"	"				X				
12 WW19-203-CT1	"	Tile				X				

Relinquished to Entech (sign): RS
 Received by Entech (sign): Shunte
 Date: FEB 15 05 Time: 4:40pm
 Date: FEB 18 05 Time: 4:40pm
 Date: _____ Time: _____
 Method of Shipment: Reg. 42
 Condition: _____

Charges Apply for < 5 days Turnaround Time.
 E: Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)
 Soil/Sediment/Groundwater/Surface Water/Effluent/Drinking Water etc. - Pls. Specify.
 Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03.
 1) Please specify if water samples are to be filtered by lab before analysis.
 Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.
 4.0 (21 Apr. 2004)

See Overleaf

CHAIN OF CUSTODY RECORD[QC-2(2)]

int: X/C CONSULTANTS LTD
 Address: 2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON, L6H 6Z7
 Contact: ANDREAS KOURGEMENOS
 : 905 829 8890 x 254 Fax: 905 829 8890
 (if other than the client)

Client P.O. #:
Client Project #:
Entech Quote#:
Sampled by:
Guidelines needed:

Total # of Samples:

Anticipated health or chemical hazard:

Page (3) of (3)

Work Order#:
Comments:

[illegible]

Charges Apply for <3 days Turnaround Time.	Sample Logged By:
Storage charges may then be applicable.)	

1) E: Samples will only be retained for 30 days after reporting of data unless:
 a) Soil/Sediment/Surface Water/E-Muen/Dinking Water etc. - Pls. Specify:

2) please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03

2) Please specify if water samples are to be filtered by lab before analysis.

3) Please specify if water samples are to be analyzed by the second analysis.

v. 4.0 (21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 18/05
 Date Analysed:
 Date Reported: Feb 28/05
 Date Revised: Mar 16/05

ENTECH

A Division of Agri-Service Lab Inc.
 6928 Kilmat Rd., Unit #4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47163	47166	47167	47168
Client Sample ID	WW19-001-FT1	WW19-104-FT1	WW19-125-FT1	WW19-133-FT1
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted	Accepted	Accepted	Accepted
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	Homogeneous
Color:	Tan	Tan	White	Tan
Texture:	Compact	Compact	Compact	Compact
Description:	Tile	Tile	Tile	Tile
ASBESTIFORM MINERALS				
% Chrysotile	>10≤20			
% Amosite				
% Crocidolite				
% Tremolite-Actinolite:				
% Anthophyllite				
% TOTAL ASBESTOS	>10≤20	ND	ND	ND

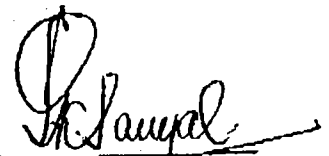
ND = None Detected

Trace = <0.5%

Method:


Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis

Client: XCG-Oakville
Attention: Andreas K
Project: 3-336-128-01
P.O.:
Sample Type: Tile
Date Received: Feb 18/05
Date Reported: Feb 28/05


Sam Sanyal, M. Sc., C. Chem.
Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

Data Pertains to Specific Samples Tested					
SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			COMMENTS
		ASBESTOS	OTHER		
47164 102-CT1	Homogeneous, beige, compressed fibrous material.	None detected	Cellulose Mineral Wool Perlite Other non-fibrous material	25-50% 25-50% 10-25% 0.5-5%	
47165 103-CT1	Homogeneous, beige, compressed fibrous material.	None detected	Cellulose Mineral Wool Perlite Other non-fibrous material	25-50% 25-50% 10-25% 0.5-5%	
47169 133-PR1	Homogeneous, yellow, fibrous material.	None detected	Fibreglass	>75%	
47170 133-PE1	Homogeneous, grey, soft, cementitious material.	Chrysotile	50-75% Non-fibrous material	25-50%	

None Detected = <0.5% (MDL)

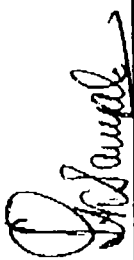
Analysed by: *Pitchin Environmental*

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and USEPA Method: 600/R-93/116 dated - July 1993.

ENTECH

A Division of Agri-Service Lab Inc.
6820 Kilmart Rd., Unit #4
Mississauga, ONT L5N 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

Client: XCG-Oakville
Attention: Address K
Project: 3-338-128-01
P.O.:
Sample Type: Tile
Date Received: Feb 18/05
Date Reported: Feb 28/05


Sam Sanyal, M.Sc., C. Chem.
Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			COMMENTS
		ASBESTOS	OTHER		
47171 WW19-203-CT1	Homogeneous, beige, compressed, fibrous material.	None detected	Cellulose 25-50% Mineral Wool 25-50% Perlite 10-25% Other non-fibrous material 0.5-5%		
47172 WW19-203-PE1	Homogeneous, beige, hard, cementitious material.	None detected	Mineral wool 25-50% Non-fibrous material 50-75%		
47173 WW19-204-PE1	Homogeneous, grey, soft, cementitious material.	Chrysotile 25-50%	Non-fibrous material 50-75%		
47174 WW19-204-PE2	Homogeneous, grey, soft, cementitious material.	Chrysotile 25-50%	Non-fibrous material 50-75%		

None Detected = <0.5% (MDL)

Analyzed by: *Pitchin Environmental*

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and
USEPA Method: 600/R-83/116 dated - July 1993.

ENTECH

A Division of Agri-Service Lab Inc.
 6720 Kilmart Rd., Unit #4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

Client: XCG-Oakville
 Attention: Andrew K.
 Project: 3-336-128-01

P.O.:

Sample Type: Paint
 Date Received: Feb 21/06
 Date Analysed: Feb 22-23/06
 Date Reported: Feb 28/06



Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)									
			Expected	Found	Recovery	47148	47148	47148	47150	47151	47152	47153	47154	47145
			Conc. (µg/g)	Conc. (µg/g)	%	WW18-101- WP1	WW18-102- WP1	WW18-103- WP1	WW18-108- DP1	WW18-110- PP1	WW18-110- FP1	WW18-110- WP1	WW18-111- WP1	WW18-113- WP1
Lead in Paint Chips	20	5000	233	223	98	536	<20	<20	65.5	937	2464	1014	60.5	

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): MR, PS

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:

Lead in Paint Chips - ICP-AES/Digestion

ENTECH

A Division of Agri-Service Lab Inc.
6420 Kilmer Rd., Unit #6
Minneapolis, ONT L5N 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-128-01
P.O.:

Sample Type: Paint
Date Received: Feb 21/06
Date Analysed: Feb 22-23/06
Date Reported: Feb 28/06



Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE			SAMPLE DATA (µg/g)							
			Expected Conc. (µg/g)	Found Conc. (µg/g)	Recovery %	47156 WW-19-128-DP1	47157 WW-19-131-WP1	47158 WW19-131-WP2	47159 WW19-133-WP1	47160 WW19-201-WP1	47151 WW19-202-WP1	47162 WW19-204-WP1	47152 WW19-110-PP1 Duplicate
Lead in Paint Chips	20	5000	233	223	96	1850	944	1375	840	<20	<20	1048	819

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): MR, PS

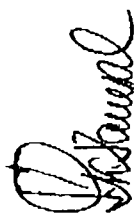
Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
Lead in Paint Chips - (CP-AES/Digestion)

ENTECH

A Division of Agri-Service Lab Inc.
6470 Kilmer Rd., Unit #4
Mississauga, ONT L4W 5M3
TEL: (905) 821-1112
FAX: (905) 821-2096

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-338-128-01
P.O.:
Sample Type: Paint
Date Received: Feb 21/05
Date Analysed: Feb 22-23/05
Date Reported: Feb 28/05



Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE			SAMPLE DATA (µg/g)						
			Expected Conc. (µg/g)	Found Conc. (µg/g)	Recovery %	Blank	47157	WW-19-131- WP1 Duplicates				
Lead in Paint Chips	20	5000	233	223	96	<20	728					

Sample Disposal: 30 Days from the Reporting Date.

Analyzed(s): MR, PS

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
Lead in Paint Chips - ICP-AES/Digestion



PHOTO 1: WW19 – Room 126 – Potential lead-containing automobile batteries observed, awaiting disposal.



PHOTO 2: WW19 – Room 133 – A pipe elbow noted to be in good condition. The elbow contained between 50 and 75% chrysotile asbestos.

APPENDIX 36
WW21 – FIELD HOUSE

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

AIN OF CUSTODY RECORD[QC-2(2)]

X/G CONSULTANTS LTO
2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
ANDREAS KOURMENO
905 424 8880 x 254 Fax: 905 829 8890

9 (if other than the client) ~~PLEASE RETURN ALL SAMPLES TO XCG~~ *
~~PLEASE KEEP IN SAME ZIPLOCK BAG~~ *

平 平 平 平

Client P.O.#:
Client Project #:
Entech Quote#:
Sampled by:
Guidelines needed:

Total # of Samples:	
Anticipated health or chemical hazard:	

Page () of ()

Analysis Required										Entech's Bottle: YES		NO		LAB USE ONLY		
Client Sample I.D.		Date Sampled	Sample Matrix *	Sampling Information (W)		Specify details if SDWA Le Reg.170 /03 applies+		Asbestos (TEM)		Asbestos (PCM)		Sample	Number of	Temp °C	Containers	Lab Number
				Filtered Yes/No ***	Preserved Yes/No											
WW21-108-WP1		12/10/01	paint												1 bag	
WW21-108-WP2			paint													
WW21-108-WP3			paint													
WW21-108-WP4			floor tile													
WW21-108-WP5			floor tile													
WW21-108-WP6			floor tile													
WW21-108-WP7			floor tile													
WW21-108-WP8			floor tile													
WW21-108-WP9			floor tile													
WW21-108-WP10			floor tile													
WW21-108-WP11			floor tile													
WW21-108-WP12			floor tile													
WW21-108-WP13			floor tile													
WW21-108-WP14			floor tile													
WW21-108-WP15			floor tile													
WW21-108-WP16			floor tile													
WW21-108-WP17			floor tile													
WW21-108-WP18			floor tile													
WW21-108-WP19			floor tile													
WW21-108-WP20			floor tile													
WW21-108-WP21			floor tile													
WW21-108-WP22			floor tile													
WW21-108-WP23			floor tile													
WW21-108-WP24			floor tile													
WW21-108-WP25			floor tile													
WW21-108-WP26			floor tile													
WW21-108-WP27			floor tile													
WW21-108-WP28			floor tile													
WW21-108-WP29			floor tile													
WW21-108-WP30			floor tile													
WW21-108-WP31			floor tile													
WW21-108-WP32			floor tile													
WW21-108-WP33			floor tile													
WW21-108-WP34			floor tile													
WW21-108-WP35			floor tile													
WW21-108-WP36			floor tile													
WW21-108-WP37			floor tile													
WW21-108-WP38			floor tile													
WW21-108-WP39			floor tile													
WW21-108-WP40			floor tile													
WW21-108-WP41			floor tile													
WW21-108-WP42			floor tile													
WW21-108-WP43			floor tile													
WW21-108-WP44			floor tile													
WW21-108-WP45			floor tile													
WW21-108-WP46			floor tile													
WW21-108-WP47			floor tile													
WW21-108-WP48			floor tile													
WW21-108-WP49			floor tile													
WW21-108-WP50			floor tile													
WW21-108-WP51			floor tile													
WW21-108-WP52			floor tile													
WW21-108-WP53			floor tile													
WW21-108-WP54			floor tile													
WW21-108-WP55			floor tile													
WW21-108-WP56			floor tile													
WW21-108-WP57			floor tile													
WW21-108-WP58			floor tile													
WW21-108-WP59			floor tile													
WW21-108-WP60			floor tile													
WW21-108-WP61			floor tile													
WW21-108-WP62			floor tile													
WW21-108-WP63			floor tile													
WW21-108-WP64			floor tile													
WW21-108-WP65			floor tile													
WW21-108-WP66			floor tile													
WW21-108-WP67			floor tile													
WW21-108-WP68			floor tile													
WW21-108-WP69			floor tile													
WW21-108-WP70			floor tile													
WW21-108-WP71			floor tile													
WW21-108-WP72			floor tile													
WW21-108-WP73			floor tile													
WW21-108-WP74			floor tile													
WW21-108-WP75			floor tile													
WW21-108-WP76			floor tile													
WW21-108-WP77			floor tile													
WW21-108-WP78			floor tile													
WW21-108-WP79			floor tile													
WW21-108-WP80			floor tile													
WW21-108-WP81			floor tile													
WW21-108-WP82			floor tile													
WW21-108-WP83			floor tile													
WW21-108-WP84			floor tile													
WW21-108-WP85			floor tile													
WW21-108-WP86			floor tile													
WW21-108-WP87			floor tile													
WW21-108-WP88			floor tile													
WW21-108-WP89			floor tile													
WW21-108-WP90			floor tile													
WW21-108-WP91			floor tile													
WW21-108-WP92			floor tile													
WW21-108-WP93			floor tile													
WW21-108-WP94			floor tile													
WW21-108-WP95			floor tile													
WW21-108-WP96			floor tile													
WW21-108-WP97			floor tile													
WW21-108-WP98			floor tile													
WW21-108-WP99			floor tile													
WW21-108-WP100			floor tile													
WW21-108-WP101			floor tile													
WW21-108-WP102			floor tile													
WW21-108-WP103			floor tile													
WW21-108-WP104			floor tile													
WW21-108-WP105			floor tile													
WW21-108-WP106			floor tile													
WW21-108-WP107			floor tile													
WW21-108-WP108			floor tile													
WW21-108-WP109			floor tile													
WW21-108-WP110			floor tile													
WW21-108-WP111			floor tile													
WW21-108-WP112			floor tile													
WW21-108-WP113			floor tile													
WW21-108-WP114			floor tile													
WW21-108-WP115			floor tile													
WW21-108-WP116			floor tile													
WW21-108-WP117			floor tile													
WW21-108-WP118			floor tile													
WW21-108-WP119			floor tile													
WW21-108-WP120			floor tile													
WW21-108-WP121			floor tile													
WW21-108-WP122			floor tile													
WW21-108-WP123			floor tile													
WW21-108-WP124			floor tile													
WW21-108-WP125			floor tile													
WW21-108-WP126			floor tile													
WW21-108-WP127			floor tile													
WW21-108-WP128			floor tile													
WW21-108-WP129			floor tile													
WW21-108-WP130			floor tile													
WW21-108-WP131			floor tile													
WW21-108-WP132			floor tile													
WW21-108-WP133			floor tile													
WW21-108-WP134			floor tile													
WW21-108-WP135			floor tile													
WW21-108-WP136			floor tile													
WW21-108-WP137			floor tile													
WW21-108-WP138			floor tile													
WW21-108-WP139			floor tile													
WW21-108-WP140			floor tile													
WW21-108-WP141			floor tile													
WW21-108-WP142			floor tile													

Rights Apply for <3 days Turnaround Time.	Samples Logged By:
(Storage charges may then be applicable.)	

Samples will only be retained for 30 days after reporting of results unless specimens requested by email (see 1/Sediment/Groundwater/Surface Water/Emulsion/Drinking Water etc. - Pls. Specify).

Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03

Please specify if water samples are to be filtered by lab before analysis.

Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.

0 (21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K
 Project: J-336-129-01
 P.O.:
 Sample Type: Floor Tile
 Date Received: Mar 02/05
 Date Analysed: -
 Date Reported: Mar 22/05

ENTECH

A Division of Agri-Service Lab Inc.
 6828 Kilmat Rd., Unit 26
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertains To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID					
Entech Sample ID	47997**	47998**	47999**		
Client Sample ID	WW21-108-FT1	WW21-102-FT1	WW21-103-FT1		
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted	Accepted	Accepted		
Homogeneity:	Homogeneous	Homogeneous	Homogeneous		
Color:	Tan	Grey	White		
Texture:	Compact	Compact	Compact		
Description:	Tile	Tile	Tile		
ASBESTIFORM MINERALS					
% Chrysotile					
% Amosite					
% Crocidolite					
% Tremolite-Actinolite:	Trace	Trace	Trace		
% Anthophyllite					
% TOTAL ASBESTOS	Trace	Trace	Trace		

** Asbestos was detected in client sample 47997 through 47999 at a level <0.1%
 ND = None Detected Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analysed by: Pinckin Environmental Ltd



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

ENTECH

A Division of Agri-Service Lab Inc.
6520 Kilmore Rd., Unit #4
Markham, ONT L3R 9W3
TEL: (905) 821-1112
FAX: (905) 821-2096

Client: XCG-Oakville
Location: Andress K.
Object: 3-336-126-01
Date:
Sample Type: Paint
Date Received: March 02/06
Date Analysed: March 03-04/06
Date Reported: March 04/06
Date Revised: Mar 23/06

Radhika Nayak
Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertains To Specific Sample(s) Tested

DATA PERTAIN TO SPECIFIC SAMPLE(S) TESTED													
PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE			SAMPLE DATA (µg/g)							
			Expected Conc. (µg/g)	Found Conc. (µg/g)	Recovery %	Blank	47994 WM21-TR1	47995 WM21-108- WP1	47996 WM21-108- WP2	48000 WM21-110- FP1	48001 WM21-110- WP1	48002 WM21-103- WP1	48000 WM21-110- FP1 Duplicates
Lead in Paint Chips	20	5000	233	214	92	<20	171	<20	<20	159	1839	<20	151

Method:
Lead in Paint Chips - ICP-AES/Digestion

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): MR, PI

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

No noteworthy photographs were taken in WW21.

APPENDIX 37
WW22 – WORKS EQUIPMENT STORAGE BUILDING

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS



6820 Kitchmat Rd., Unit #4
Mississauga, Ontario, Canada
L5N 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

Division of Agri. Services
entech Inc.

HAIN OF CUSTODY RECORD[QC-2(2)]

Client: X/G CONSULTANTS LTD
Address: 2620 BRISTOL CIRCLE SUITE 309 OAKVILLE, ON L6H 6Z7
Contact: ANDREAS KOURBEMENOS
Phone: 905 829 8880 x 254 Fax: 905 829 8890

Site to (if other than the client)

Return ~~duplicate~~ samples to X/G

Keep samples together in this same large ziplock bag

Page () of ()

Client P.O.#: _____
Client Project #: 3-336-128-01
Entech Quote#: _____
Sampled by: AK
Guidelines needed: _____

Total # of Samples: _____

Anticipated health or chemical hazard: _____

Sample #	Client Sample I.D.	Date Sampled	Sampling Information (W)		Specify details if SDWA Le Reg. 170/03 applies+	Analysis Required		Entech's Bottles: YES NO	
			Sample Matrix *	Filtered Yes/No ***		Preserved Yes/No	Sample	Number of Containers	Lab Number
1	WW22-103-WP1	FEB 10 03	Paint			LAB	LAB	YES	NO
2	WW22-103-DK1	"	"			LAB	LAB	YES	NO
3	WW22-104-WP1	"	"			LAB	LAB	YES	NO
4	WW22-104-DK1	"	"			LAB	LAB	YES	NO
5	WW22-104-FP1	"	"			LAB	LAB	YES	NO
6	WW22-105-FT1	"	Tile			LAB	LAB	YES	NO
7									
8									
9									
10									
11									
12									
Relinquished to Entech (sign): <u>[Signature]</u>						Date: <u>FEB 18 03</u>	Time: <u>4:40 pm</u>	Method of Shipment: <u>Drop off</u>	
Received by Entech (sign): <u>[Signature]</u>						Date: <u>FEB 18 03</u>	Time: <u>4:40 pm</u>	Confirmation: <u>OK</u>	
Samples Logged By: _____						Date: _____	Time: _____		

Charges Apply for <5 days Turnaround Time.

TE: Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)

Soil/Sediment/Groundwater/Surface Water/Effluent/Drinking Water etc. - Pls. Specify.

1) Please call the Laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03

3) Please specify if water samples are to be filtered by lab before analysis.

) Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.

7.4.0 (21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 18/05
 Date Analysed:
 Date Reported: March 02/06

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmat Rd., Unit #4
 Mississauga, ONT L5N 3M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47139			
Client Sample ID	WW22-105-F1			
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted			
Homogeneity:	Homogeneous			
Color:	Tan			
Texture:	Compact			
Description:	Tile			
ASBESTIFORM MINERALS				
% Chrysotile	>10≤20			
% Amosite				
% Crocidolite				
% Tremolite-Actinolite:				
% Anthophyllite				
% TOTAL ASBESTOS	>10≤20			

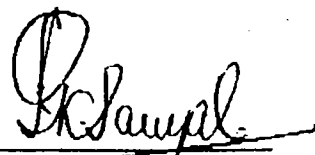
ND = None Detected

Trace = <0.50%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.



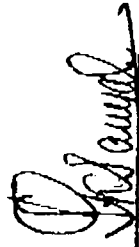
Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

ENTECH

A Division of Agri-Service Lab Inc.
 6126 Kitchener Rd., Unit #4
 Mississauga, ONT L4M 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2035

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-128-01
 P.O.:

Sample Type: Paint
 Date Received: Feb 21/05
 Date Analysed: Feb 22-23/05
 Date Reported: Feb 28/05


 Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)								
			Expected	Found	Recovery	Blank	47134	47135	47136	47137	47138	47138	
			Conc. (µg/g)	Conc. (µg/g)	%		WW22-103- WP1	WW22-103- DR1	WW22-104- WP1	WW22-104- DR1	WW22-104- FP1	WW22-104- FP1 Duplicate	
Lead in Paint Chips	20	5000	233	223	96	<20	1028	494	1441	423	1508	1561	

Sample Disposal: 30 Days from the Reporting Date.

Analyser(s): MR, PS

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
 Lead in Paint Chips - ICP-AES/Digestion

No noteworthy photographs were taken in WW22.

APPENDIX 38
WW23 – SPORTS PAVILION

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

Page () of ()

Client P.O.#:
Client Project #:
Entech Quote#:
Sampled by:
Guidelines needed:

Analysis Required

It's Apply for <5 days Turnaround Time. **Samples Logged By:** **Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)**

Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03. Please specify if water samples are to be filtered by lab before analysis. Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03. (21 Apr. 2004)

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-338-128-01
 Sample Type: Paint
 Date Received: March 02/05
 Date Analysed: March 03-04/05
 Date Reported: March 04/05

ENTECH

A Division of Agri-Service Lab Inc.
 6420 Kennedy Rd., Unit #4
 Markham, ONT L3R 9M3
 TEL: (905) 821-1112
 FAX: (905) 821-2085



Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)					
			Expected	Found	Recovery	Blank	48003	48004	48005	48005
			Conc. (µg/g)	Conc. (µg/g)	%		WW23-TR1	WW23-TR2	WW23-TR3	WW23-TR3 Duplicate
Lead in Paint Chips	20	5000	233	214	82	<20	<20	<20	<20	<20

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): MR, PY

Lab: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
 Lead in Paint Chips - ICP-AES/Digestion

No noteworthy photographs were taken in WW23.

APPENDIX 39
WW24 – MAINTENANCE GARAGE ANNEX
FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

NTech

6820 Kitimat Rd., Unit #4
Mississauga, Ontario, Canada
L5N 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

Enviro
Inc.

CHAIN OF CUSTODY RECORD[QC-2(2)]

Client: XG CONSULTANTS LTD
Address: 2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
Tel: 905 829 8880 x 254 Fax: 905 829 8890
ce to (if other than the client)

Client P.O.#:
Client Project #: 3-336-128-01
Entech Quote#:
Sampled by: AK
Guidelines needed:

Total # of Samples:

Anticipated health or chemical hazard:

Page () of ()

Work Order#:
Comments:

Sample	Client Sample I.D.	Date Sampled	Sample Matrix *	Sampling Information (W)		Specify details if SDWA Le Reg. 170 /03 applies+	Analysis Required		Temp °C	Containers	Lab Number
				Filtered Yes/No ***	Preserved Yes/No		Entech's Bottles: YES	NO			
1	WW24-101-F11	Feb 16/05	Tile				X	Asbestos (TBM)			
2	WW24-101-F12	"	"				X	Asbestos (TBM)			
3	WW24-101-F13	"	"				X	Asbestos (TBM)			
4	WW24-102-F11	"	"				X	Asbestos (TBM)			
5	WW24-103-PE1	"	INS				X	Asbestos (TBM)			
6	WW24-103-PE2	"	INS				X	Asbestos (TBM)			
7											
8											
9											
0											
1											
2											
Relinquished to Entech (sign) <u>AK</u> Received by Entech (sign) <u>AK</u>							Date: <u>Feb 18/05</u> Time: <u>4:40 pm</u> Date: <u>Feb 18/05</u> Time: <u>4:49 pm</u> Date: <u>Feb 18/05</u> Time: <u>4:49 pm</u>		Method of Shipping: <u>None</u> Condition: <u>OK</u>		

Charges Apply for <3 days Turnaround Time. Samples Logged By: AK

*E: Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)

Soil/Sediment/Groundwater/Surface Water/Effluent/Drinking Water etc. - Pls. Specify.

1) Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03

3) Please specify if water samples are to be filtered by lab before analysis.

Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.

4.0 (21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 18/05
 Date Analysed:
 Date Reported: March 08/05

ENTECH

A Division of Appl-Service Lab Inc.
 8820 Kilmer Rd., Unit 24
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertains To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

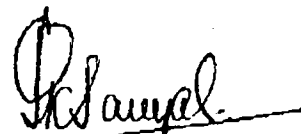
Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID					
Entech Sample ID	47140	47141	47142	47143	
Client Sample ID	WW24-101-FT1	WW24-101-FT2	WW24-101-T3	WW24-102-FT1	
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted	Accepted	Accepted	Accepted	
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	Homogeneous	
Color:	Tan	Tan	White	Tan	
Texture:	Compact	Compact	Compact	Compact	
Description:	Floor Tile	Floor Tile	Floor Tile	Floor Tile	
ASBESTIFORM MINERALS					
% Chrysotile	≥10≤20	≥10≤20	*Trace		
% Amosite					
% Crocidolite					
% Tremolite-Actinolite:			*Trace		
% Anthophyllite					
% TOTAL ASBESTOS	≥10≤20	≥10≤20	*Trace	ND	

* Chrysotile and Tremolite-Actinolite asbestos in Sample 47142 was detected at a level of <0.1%
 ND = None Detected Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 18/05
 Date Reported: Feb 28/05

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kitchmat Rd., Unit #4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
47144 WW24-103-PE1	Homogeneous, beige, soft, cementitious material.	None Detected	Mineral Wool 25-50% Non-fibrous material 50-75%	
47145 WW24-103-PE2	Homogenous, beige, soft, cementitious material.	None Detected	Mineral Wool 25-50% Non-fibrous material 50-75%	

None Detected = <0.5% (MDL)

Analysed by: *Pinchin Environmental*

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and USEPA Method: 600/R-93/116 dated - July 1993.

No noteworthy photographs were taken in WW24.

APPENDIX 40
WW25 – SALLYPORT BUILDING

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

Client:

Attention:

Project:

P.O.:

Sample Type:

Date Received:

Date Reported:

XCG-Oakville

Andreas K.

3-336-128-01

Title

Mar 02/05

Mar 09/05



Sam Sanyal, M. Sc., C. Chem.

Manager, Inorganic Analysis.

ENTECH

A Division of Agri-Service Lab Inc.

6920 Kéllmer Rd., Unit #4

Millsburg, ONT L6W 6M3

TEL: (905) 821-1112

FAX: (905) 821-2095

MAR-09-2005

17:02

ENTECH

905 821 2095

P.03/03

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
48007 WW25-101-Stu1	Homogeneous, white, granular, cementitious material.	None detected	Non-fibrous material >75%	

None Detected = <0.5% (MDL)

Analysed by: *Pinchin Environmental*

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and
USEPA Method: 600/R-93/116 dated - July 1993.

Client:	XCG-Oakville
Attention:	Andrew K.
Project:	3-336-128-01
P.O.:	
Sample Type:	Paint
Date Received:	March 02/05
Date Analysed:	March 03-04/05
Date Reported:	March 04/05

Paint

March 02/05
March 03-04/05
March 04/05

D. Sanyal

 Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis.

Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

[illegible]

Sample Disposal: 30 Days from the Reporting Date.

Analysis): MR, PI

to: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:

Lead in Paint Chips - [CP-AES/Digestion]

ENTECH

A Division of Agri-Service Ltd Inc.
6420 Kitchener Rd., Unit B4
Mississauga, ONT L5N 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

No noteworthy photographs were taken in WW25.

APPENDIX 41
WW26 – SPORTS COMPLEX

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS



6820 Kilomet Rd., Unit #4
Mississauga, Ontario, Canada
L5N 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

of Agriculture

Inc.

AIN OF CUSTODY RECORD[QC-2(2)]

X/G CONSULTANTS LTD
2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
ANDREAS KOURAMENOS
905 829 8880 x 254 Fax: 905 829 8890
9 (if other than the client)
PLEASE RETURN ALL SAMPLES TO X/G *
PLEASE KEEP IN SAME ZIPLOCK BAG *
* * *

Client P.O.#:

Client Project #: 3-336-126-01

Entech Quoted#:

Sampled by: AK

Guidelines needed:

Total # of Samples:

Anticipated health or chemical hazard:

Page (2) of ()

Analysis Required

X Lead
X Arsenic (TEA)
X
X
X
X
X
X

Specify details if
SDWA Le
Reg. 170/03
applies

Sampling Information (W)
Filtered Yes/No
Preserved Yes/No

Date Sampled
Sample Matrix

Client
Sample I.D.

Specify details if
SDWA Le
Reg. 170/03
applies

Sampling Information (W)
Filtered Yes/No
Preserved Yes/No

Date Sampled
Sample Matrix

Client
Sample I.D.

Entech's Bottle: YES NO

Number of

Containers

Temp °C

Lab Number

42270

42271

42272

42273

42274

42275

42276

Returned to Entech
(Yes)

Received by Entech
(Yes)

Retention Labelled By

Specimen Turnaround Time

1/5 (Sediment/Groundwater/Surface Water/Effluent/Drinking Water etc. - Pls. Specify)

Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03

Please specify if water samples are to be filtered by lab before analysis.

Unless specified otherwise, all water samples will not be considered as Drinking Water, as defined in R170/03.

0 (2) Apr. 2004

See Overleaf

TOTAL P.02

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-338-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 28/06
 Date Analysed:
 Date Reported: Mar 17/06

ENTECH

A Division of Agri-Service Lab Inc.
 6828 Kilmat Rd., Unit 24
 Mississauga, ONT L5N 3M3
 TEL: (905) 821-1112
 FAX: (905) 821-2085

TEM Bulk Asbestos Test Report

Data Pertains To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID					
Entech Sample ID	47759**	47760**	47761**	47762	47763**
Client Sample ID	WW26-101-F11	WW26-101-F12	WW26-101-F13	WW26-101-F14	WW26-101-F15
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted	Accepted	Accepted	Accepted	Accepted
Homogeneity:	Layered / Sep	Layered / Sep	Homogeneous	Homogeneous	Layered / Sep
Color:	Tan	Tan	Tan	White	Tan
Texture:	Compact	Compact	Compact	Compact	Compact
Description:	Tile	Tile	Tile	Tile	Tile
ASBESTIFORM MINERALS					
% Chrysotile		Trace			
% Amosite					
% Crocidolite					
% Tremolite-Actinolite:	Trace	Trace	Trace		Trace
% Anthophyllite					
% TOTAL ASBESTOS	Trace	Trace	Trace	ND	Trace

** Asbestos was detected in Client Sample No. 47759, 47760, 47761 and 47763 at a level of <0.1%
 ND = None Detected Trace = <0.5%

Method:
 Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-338-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 28/05
 Date Analysed:
 Date Reported: Mar 17/05

ENTECH

A Division of Agri-Service Lab Inc.
 6420 Kilmet Rd., Unit 24
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 eV
 Accelerating Voltage: 100 keV


Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID					
Entech Sample ID	47770**	47772			
Client Sample ID	WW26-204-FT1	WW26-206-FT1			
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted	Accepted			
Homogeneity	Homogeneous	Homogeneous			
Color:	Tan	Tan			
Texture:	Compact	Compact			
Description:	Tile	Tile			
ASBESTIFORM MINERALS					
% Chrysotile		>10≤20			
% Amosite					
% Crocidolite					
% Tremolite-Actinolite:	Trace				
% Anthophyllite					
% TOTAL ASBESTOS	Trace	>10≤20			

ND = None Detected

Trace = <0.5%

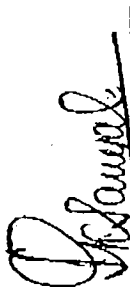
Method:
 Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analysed by: Fincham Environmental Ltd


 Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

ENTECH

A Division of Agri-Service Lab Inc.
6720 Kilmart Rd., Unit #4
Mississauga, ONT L5H 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-126-01
P.O.:
Sample Type: Tile
Date Received: Feb 28/05
Date Reported: March 03/05


Sam Sanyal, M. Sc., C. Chem.
Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
47758 WW26-CT1	Homogeneous, beige, fibrous material.	None detected	Cellulose Non-fibrous material >75% 5-10%	
47767 WW26-119-PE1	Homogeneous, grey, soft, cementitious material.	None detected	Mineral Wool Non-fibrous material 5-10% >75%	
47768 WW26-119-PE2	Homogeneous, grey, soft, cementitious material.	None detected	Mineral Wool Non-fibrous material 5-10% >75%	

None Detected = <0.5% (MDL)

Analyzed by: *Pinchin Environmental*

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and USEPA Method: 600/R-93/116 dated - July 1993.

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-338-126-01
P.O.:
Sample Type: Paint
Date Received: Feb 28/06
Date Analysed: March 01-02/06
Date Reported: March 03/06

Sam Sanyal

Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE			SAMPLE DATA (µg/g)												
			Expected	Found	Recovery	47764	47765	47766	47769	47771	47773	47774	47775					
			Cens. (µg/g)	Cenc. (µg/g)	%	WW26-101- WP1	WW26-102- WP1	WW26-111- WP1	WW26-119- DT1	WW26-204- WP1	WW26-218- TR1	WW26-TR1- (GRY)	WW26- TR2(RED)					
Lead in Paint Chips	20	5000	233	229	98	<20	<20	32.4	330	<20	354	637	469					

Sample Disposal: 30 Days from the Reporting Date.

Analysis: MR, P

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
Lead in Paint Chips - ICP-AES/Digestion

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-338-128-01
P.O.:
Sample Type: Paint
Date Received: Feb 28/05
Date Analysed: March 01-02/05
Date Reported: March 03/05

Sam Sanyal

Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		Blank	SAMPLE DATA (µg/g)			
			Expected	Found		47776	47771		
	Detection		Cone. (µg/g)	Cone. (µg/g)	%	WK26-205- WP1	WK26-204- WP1 Duplicates		
Lead in Paint Chips	Limit (µg/g)	5000	233	279	98	153	<20		

Sample Disposal: 30 Days from the Reporting Date.

Analysis(s): MR, PI

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
Lead in Paint Chips - ICP-AES/Digestion

No noteworthy photographs were taken in WW26.

APPENDIX 42
WW27 – VISITOR, CORRESPONDENCE & CONTROL CENTRE

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

VOF CUSTODY RECORD[QC-2(2)]

CG CONSULTANTS LTD
2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
WANDAAS KOURBEMENI
905 829 8890
Fax: 905 829 8890
other than the client
PLEASE RETURN ALL SAMPLES TO XCG *
PLEASE KEEP IN SAME ZIPLOCK BAG *
* * *

Client P.O.#:
Client Project #: 3-336-126-01
Entech Quote#: AK
Sampled by: AK
Guidelines needed:

Total # of Samples:
Anticipated health or chemical hazard:

Work Order: 38228
Comments:

Page 1 of 2

Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg 170.03 applies	Analysis Required		Temp °C	Containers	Lab Number	Entech's Bottle: YES NO
			Filtered Yes/No	Preserved Yes/No		Asbestos (TEM)	Asbestos (PCM)				
WW7-108-FT1	Feb 28/05	Tile				X	X	18.5	1	47777	NO
WW7-108-FT2	"	"				X	X	"	"	47778	NO
WW7-119-STU1	"	Stucco				X	X	"	"	47779	NO
WW7-119-TR1	"	Brick				X	X	"	"	47780	NO
WW7-119-FT1	"	Tile				X	X	"	"	47781	NO
WW7-119-WP1	"	Brick				X	X	"	"	47782	NO
WW7-120-CT1	"	Tile				X	X	"	"	47783	NO
WW7-120-CT2	"	"				X	X	"	"	47784	NO
WW7-120-FT1	"	"				X	X	"	"	47785	NO
WW7-120-WP1	"	Brick				X	X	"	"	47786	NO
WW7-122-CT1	"	Tile				X	X	"	"	47787	NO
WW7-137-WP1	"	Paint				X	X	"	"	47788	NO

Check Log: Junita
Date: Feb 28/05 Time: 11 AM
Date: Feb 28/05 Time: 11 AM
Date: Feb 28/05 Time: 8 PM

Lab: Junita
Sample Label: Junita
For Apply for 45 days Turnaround Time.
Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)
Sediment/Groundwater/Surface Water/Emulsion/Drinking Water etc. - Fla. Specify.
Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03.
Please specify if water samples are to be filtered by lab before analysis.
Please specify otherwise, all water samples will not be considered as Drinking Water, as defined in R170/03.
0 (21 Apr. 2004)

See Overleaf



6820 Kilomet Rd., Unit #4
Mississauga, Ontario, Canada
LSN 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

VOF CUSTODY RECORD[QC-2(2)]

CG CONSULTANTS LTD
620 BRISTOL CIRCLE SUITE 300 OAKVILLE ON L6H 6Z7
WAGLEAS KOURBEMEN
55 429 8880 X254 Fax: 905 829 8890
* * * * *
* * * * *
* * * * *
* * * * *

PLEASE RETURN ALL SAMPLES TO XCG *
PLEASE KEEP IN SAME ZIPLOCK BAGS *
* * * * *

Client P.O.#:
Client Project #: 3-336-126-01
Entech Quote#:
Sampled by: AK
Guidelines needed:

Total # of Samples:
Anticipated health or chemical hazard:

Work Order: 38778
Comments:

Page (2) of 12

Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg. 170/03 applies*	Analysis Required		Temp °C	Containers	Lab Number	Entech's Bottle: YES NO
			Filtered Yes/No	Preserved Yes/No		Agar (PLM)	Agar (TEM)				
W027-140-WP1	Feb 28/05	Paint				X			1 Bag	47789	NO
W027-162-WP1	"	"				X			"	47790	
W027-162-WP1	"	"				X			"	47791	
W027-162-WP2	"	"				X			"	47792	
W027-139-WP1	"	"				X			"	47793	
W027-801-WP1	"	"				X			"	47794	
W027-803-WP1	"	"				X			"	47795	
<p>Relinquished to Entech (Signature) _____</p> <p>Received by Entech (Signature) _____</p> <p>Lab _____</p> <p>Check: Lane _____</p> <p>Signature: _____</p>											

1. Apply for 45 days Turnaround Time.
2. Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)
3. Sediment/Groundwater/Surface Water/Drinking Water etc. - Ple. Specify.
4. Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03.
5. Please specify if water samples are to be filtered by lab before analysis.
6. Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.
(21 Apr. 2004)

See Overleaf

AIN OF CUSTODY RECORD[QC-2(2)]

X/C CONSULTANTS LTD
2620 BRISTOL CIRCLE SUITE 309 DAVENUE, ON L6H 6Z7
ANDREAS KOURMENCU
905 829 8880 x 254 Fax: 905 829 8890

PLEASE RETURN ALL SAMPLES TO XCG
PLEASE KEEP IN SAME ZIPLOCK BAG

平 平 平 平 平

Client P.O.#:		Total # of Samples:
Client Project #:	3-336-126-01	Anticipated health or chemical hazard:
Entech Quote#:		
Sampled by:	AK	
Guidelines needed:		

Analysis Required

[illegible]

It's Apply for <5 days Turnaround Time.	Samples Logged By:
Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)	

Sediment/Groundwater/Surface Water/Emulsion/Drinking Water etc. - Pls. Specify.

***Please specify if water samples are to be filtered by lab before analysis.**

less specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.

(21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Floor Tile
 Date Received: Feb 28/06
 Date Analysed:
 Date Reported: Mar 21/06
 Date Revised: Mar 23/06

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmint Rd., Unit #4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 µm
 Camera Constant: 29.6 mm-Å

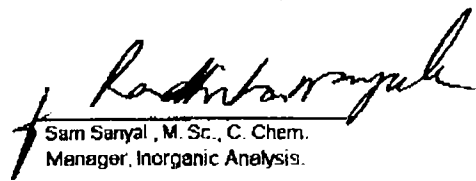
SAMPLE ID					
Entech Sample ID	47777	47778**	47781**	47785**	
Client Sample ID	WW27-108-FT1	WW27-108-FT2	WW27-119-FT1	WW27-120-FT1	
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted	Accepted	Accepted	Accepted	
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	Layered/ Sep	
Color:	Tan	Tan	White	Tan	
Texture:	Compact	Compact	Compact	Compact	
Description:	Tile	Tile	Tile	Tile	
ASBESTIFORM MINERALS					
% Chrysotile	>10≤20	Trace	Trace	Trace	
% Amosite					
% Crocidolite					
% Tremolite-Actinolite					
% Anthophyllite					
% TOTAL ASBESTOS	>10≤20	Trace	Trace	Trace	

** Asbestos was detected in Client Sample No. 47778, 47781 and 47785 at a level of <0.1%
 ND = None Detected Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.


 Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-129-01
 P.O.:
 Sample Type: Floor Tile
 Date Received: Feb 28/05
 Date Analysed:
 Date Reported: Mar 21/05

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmat Rd., Unit 24
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID					
Entech Sample ID	48008				
Client Sample ID	WW27-151- ET11				
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted				
Homogeneity:	Homogeneous				
Color:	White				
Texture:	Compact				
Description:	Tile				
ASBESTIFORM MINERALS					
% Chrysotile					
% Amosite					
% Crocidolite					
% Tremolite-Actinolite:					
% Anthophyllite					
% TOTAL ASBESTOS	ND				

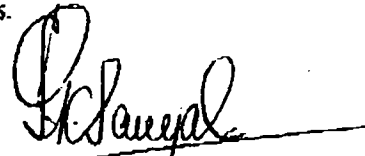
ND = None Detected

Trace = <0.5%

Method:

Samples Analyzed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analyzed by: Pinchin Environmental Ltd.

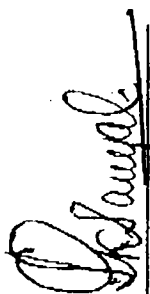


Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

ENTECH

A Division of Agri-Service Lab Inc.
 6120 Kilmat Rd., Unit #4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-126-01
 P.O.:
 Sample Type: Stucco
 Date Received: Feb 28/05
 Date Reported: March 03/05



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
47779 WW27-119-Slu1	Homogeneous, beige, soft, cementitious material.	None detected	Perlite Other non-fibrous material 0.5-5% >75%	
47783 WW27-120-CT1	Homogeneous, beige, compressed fibrous material.	None detected	Mineral Wool Cellulose Non-fibrous material 50-75% 0.5-5% 25-50%	
47784 WW27-120-CT2	Homogeneous, beige, compressed fibrous material.	None detected	Mineral Wool Cellulose Non-fibrous material 50-75% 0.5-5% 25-50%	
47787 WW27-122-CT1	Homogeneous, beige layered, compressed, fibrous material.	None detected	Cellulose Mineral Wool Perlite Other non-fibrous material 25-50% 25-50% 10-25% 0.5-5%	

None Detected = <0.5% (MDL)

Analysed by: **Pirchin Environmental**

in compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and USEPA Method: 600/R-93/16 dated - July 1993.

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-338-128-01
 P.O.:
 Sample Type: Paint
 Date Received: Feb 28/05
 Date Analysed: March 01-02/05
 Date Reported: March 03/05

Sam Samyal

Sam Samyal, M.Sc., C. Chem
 Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)									
			Expected	Found	Recovery	47780	47782	47786	47788	47789	47790	477981	47792	
	Limit (µg/g)		Conc. (µg/g)	Conc. (µg/g)	%	WWZT-119- TR1	WWZT-119- WP1	WWZT-120- WP1	WWZT-137- WP1	WWZT-140- WP1	WWZT-182- FP1	WWZT-187- WP1	WWZT-187- WP2	
Lead in Paint Chips	20	5000	233	229	98	<20	<20	<20	<20	<20	<20	<20	22.6	

Sample Disposal: 30 Days from the Reporting Date

Analysed: MR, PY

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
 Lead in Paint Chips - ICP-AES/Digestion

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-126-01
 P.O.:
 Sample Type: Paint
 Date Received: Feb 28/05
 Date Analysed: March 01-02/05
 Date Reported: March 03/05

S. Sanyal

Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE			SAMPLE DATA (µg/g)										
			Expected	Found	Recovery	Blank	47793 WWZ7-139- WP1	47794 WWZ7-301- WP1	47795 WWZ7-303- WP1							
			Conc. (µg/g)	Conc. (µg/g)	%											
Lead in Paint Chips	20	5000	233	229	98	<20	<20	<20	<20							

Sample Disposal: 30 Days from the Reporting Date.
 Analyte(s): *MR, PI*
 Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
 Lead in Paint Chips - ICP-AES/Digestion

No noteworthy photographs were taken in WW27.

APPENDIX 43
WW31 – ACCOMMODATION BUILDING (80-MAN UNIT)

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

TECH

6820 Kilomet Rd., Unit #4
Mississauga, Ontario, Canada
LSN 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

Lab Services

IN OF CUSTODY RECORD[QC-2(2)]

X/G CONSULTANTS LTD
2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
ANDREAS KOURBEMENOS
905 829 8880 Y254 Fax: 905 829 8890

(if other than the client)
PLEASE RETURN ALL SAMPLES TO X/G
PLEASE KEEP IN SAME ZIPLOCK BAGS

Client P.O.#:
Client Project #: 3-336-126-01
Entech Quoter:
Sampled by: AK
Guidelines needed:

Total # of Samples: 15
Anticipated health or chemical hazard:

Page 1 of 2

Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg. 170/03 applies	Analysis Required	Entech's Bottles: YES (NO)		Lab Number
			Filtered Yes/No	Preserved Yes/No			Number of	Containers	
WW31-122-F1	Feb 18/03	Tile				X	X	1803	47796
WW31-122-CP1	"	Paint				X	X	"	47797
WW31-122-WP1	"	"				X	X	"	47798
WW31-124-F1	"	Tile				X	X	"	47799
WW31-148-TEL	"	Paint				X	X	"	47800
WW31-176-F1	"	Tile				X	X	"	47801
WW31-176-F12	"	"				X	X	"	47802
WW31-176-WP1	"	Paint				X	X	"	47803
WW31-195-STO1	"	Stucco				X	X	"	47804
WW31-TR1	Feb 22/03	Paint				X	X	"	47805
WW31-104-WP1	"	"				X	X	"	47806
WW31-218-F1	"	Tile				X	X	"	47807
Round Time: 3:30 PM Method of Storage: Drip Date: Feb 28/03 Time: 11 AM Date: Feb 28/03 Time: 11 AM Date: 01 Time: 3 PM									

CHECK: Conc
Signature: Surita
Date: Feb 28/03

Storage charges may then be applicable.)

Apply for 45 days Turnaround Time.
Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)
Sediment/Groundwater/Surface Water/Effluent/Drinking Water etc. - Pls. Specify.
Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03.
Please specify if water samples are to be filtered by lab before analysis.
Unless specified otherwise, all water samples will not be considered as Drinking Water, as defined in R170/03.

0 (21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-335-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 28/05
 Date Analysed:
 Date Reported: Mar 21/05

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmat Rd., Unit 24
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 eV
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID					
Entech Sample ID	47796	47799	47801	47802	47807
Client Sample ID	WW31-122-FT1	WW31-124-FT1	WW31-176-FT1	WW31-176-FT2	WW31-218-FT1
MACROSCOPIC EXAMINATION					
Accepted/Rejected:	Accepted	Accepted	Accepted	Accepted	Accepted
Homogeneity:	Homogeneous	Homogeneous	Homogeneous	Homogeneous	Homogeneous
Color:	Pink	White	White	White	Grey
Texture:	Compact	Compact	Compact	Compact	Compact
Description:	Tile	Tile	Tile	Tile	Tile
ASBESTIFORM MINERALS					
% Chrysotile					
% Amosite					
% Crocidolite					
% Tremolite-Actinolite					
% Anthophyllite					
% TOTAL ASBESTOS	ND	ND	ND	ND	ND

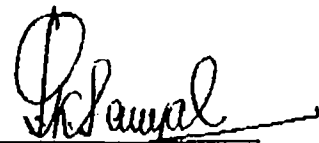
ND = None Detected

Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.

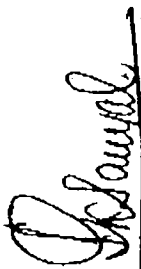


Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

ENTECH

A Division of Agri-Service Lab Inc.
 8820 Kilmuir Rd., Unit #4
 Mississauga, ONT L5M 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-126-01
 P.O.:
 Sample Type: Stucco
 Date Received: Feb 22/05
 Date Reported: March 03/05


 Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

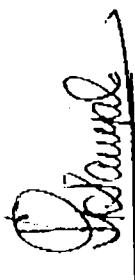
SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
47804 WW31-195-Stu1	Homogeneous, white, soft, cementitious material.	None detected	Foam Other non-fibrous material 0.5-5% >75%	

None Detected = <0.5% (MDL)

Analysed by: *Pinchin Environmental*

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and
 USEPA Method: 800/R-93/116 dated - July 1993.

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-128-01
P.O.:
Sample Type: Paint
Date Received: Feb 29/05
Date Analysed: March 01-02/05
Date Reported: March 03/05


Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)									
			Expected	Found	Recovery	47797	47798	47800	47803	47805	47808	47808	47808	47809
			Conc. (µg/g)	Conc. (µg/g)	%	WWS1-122- CP1	WWS1-122- WP1	WWS1-148- TR1	WWS1-176- WP1	WWS1-TR1	WWS1-104- WP1	WWS1-MO1- FP1	WWS1-MO2- TR1	
Lead in Paint Chips	20	5000	233	229	98	23.2	<20	<20	21.3	686	<20	<20	10052	

Method:
Lead in Paint Chips - ICP-AES/Digestion

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): MR, P

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

A Division of Agri-Service Lab Inc.
5828 Kötter Rd., Unit 34
Mississauga, ONT L5H 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

[Signature]
Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Data Pertain To Specific Sample(s) Tested

Method:
Lead in Paint Chips - ICP-AES/Digestion

TOTAL P.07



PHOTO 1: WW31 – Room M02 – Yellow railing paint that was found to contain a lead concentration of 10,052 ppm. The paint was noted to be in poor condition.

APPENDIX 44
WW32 – PRIVATE FAMILY VISIT DUPLEX (UNITS 1 & 2)

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS



6820 Kilmat Rd., Unit #4
Mississauga, Ontario, Canada
LSN 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

19 of April 2004

7 line

AIN OF CUSTODY RECORD[QC-2(2)]

Client: XCS CONSULTANTS LTD
Address: 2620 BRISTOL CIRCLE SUITE 300 DAVENUE, ON L6H 6Z7
Phone: 905 829 8890 Fax: 905 829 8890

PLEASE RETURN ALL SAMPLES TO XCS
PLEASE KEEP IN SAME ZIPLOCK BAGS

* * *

File	Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg. 170/03 applies
				Filtered Yes/No	Preserved Yes/No	
	WW32-V2(105)-WP1	Feb 20/03	Paint			
	WW32-V2(107)-SW1	"	Stucco			
	WW32-V2(107)-FL1	"	Tile			
	WW32-V2(107)-FT2	"	"			
	WW32-V2(108)-WP1	"	Paint			
	WW32-V2(108)-WP1	"	"			
	WW32-V2(109)-WP1	"	"			
	WW32-V2(108)-LIN1	"	Tile			
	Stop on bag Pls confirm with us					

Amount Time: 7 Working Days
Specify @ Lab

Requisition to Enrich (Sign)

Received by Enrich (Sign)

Specimen Logged By

Notes: Apply for <1 day Turnaround Time.

Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)

U/Sediment/Groundwater/Surface Water/Effluent/Drinking Water etc. - Pls. Specify.

Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03

Please specify if water samples are to be filtered by lab before analysis.

Unless specified otherwise, all water samples will not be considered as Drinking Water, as defined in R170/03.

0 (21 Apr. 2004)

Page (1 of 1)

Client P.O.#: 3-336-126-01
Client Project #: 3-336-126-01
Enrich Quote#: AK
Sampled by: AK
Guidelines needed:

Analysis Required

Sample	Temp °C	Containers	Lab Number	Enrich's Bottles	
				Number of	YES NO
		1 bag	47258		NO
			47259		NO
			47260		NO
			47261		NO
			47262		NO
			47263		NO
			47264		NO
			47265		NO

Check: gjs

Sumita

Sumita

Storage charges may then be applicable.)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-335-129-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/05
 Date Analysed:
 Date Reported: March 04/05
 Date Revised: March 08/05

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmont Rd., Unit 24
 Mississauga, ONT L5N 3M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47260	47261	47265*	
Client Sample ID	WW32-U2-(107)-FT1	WW32-U2-(107)-FT2	WW32-U2-(108)-LJN1	
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted	Accepted	Accepted	
Homogeneity	Homogeneous	Homogeneous		
Color:	Grey	Grey		
Texture:	Compact	Compact		
Description:	Tile	Tile		
ASBESTIFORM MINERALS				
% Chrysotile				
% Amosite				
% Crocidolite				
% Tremolite-Actinolite:				
% Anthophyllite				
% TOTAL ASBESTOS	ND	ND		

* Sample 47265 was prepared by Gravimetric Reduction.


ND = None Detected

Trace = <0.3%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Plachin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis

Client: XCO-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/05
 Date Analysed:
 Date Reported: March 04/05
 Date Revised: March 08/05

ENTECH

A Division of Agri-Service Lab Inc.
 6825 Highway 101, Unit 24
 Mississauga, ONT L5N 3M5
 TEL: (905) 821-1112
 FAX: (905) 821-2003

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 eV
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm - 1.04 μ m
 Camera Constant: 39.6 mm-A

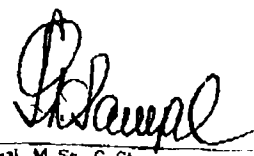
SAMPLE ID		
Entech Sample ID	47265	
Client Sample ID	WW32-U2-(108)-LONI	
SAMPLE DESCRIPTION		
Homogeneity	Layered Inteparable	
Color:	Tan	
Texture	Spongy	
Description:	Tile	
SAMPLE PREP		
Starting Weight (g)	0.0765	
Residue Weight(g)	0.0072	
Weight Percent Residue:	9.43	
PERCENT ASBESTOS DETECTED IN RESIDUE		
Chrysotile	0	
Amosite	0	
Crocidolite	0	
Achnolite-Termolite	0	
Anthrophyllite	0	
TOTAL IN RESIDUE	ND	
ASBESTOS PERCENT IN SAMPLE	ND	

ND = None Detected

Trace - <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analyzed by: Pinchin Environmental Ltd.

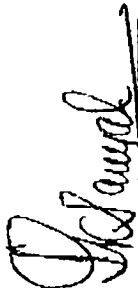


Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis

ENTECH

A Division of Agri-Service Lab Inc.
6150 Kilmuir Rd., Unit #4
Mississauga, ONT L5H 5M3
TEL: (905) 821-1112
FAX: (905) 821-2095

Client: XCG-Oakville
Attention: Andreas K
Project: 3-336-126-01
P.O.:
Sample Type: Stucco
Date Received: Feb 21/05
Date Reported: Feb 28/05



Sam Sanyal, M. Sc., C. Chem.
Manager, Inorganic Analysis

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
47259 WW32-U2(107) Silu1	Homogeneous, white, compressed fibrous material.	None detected	Non-fibrous material >75%	

None Detected = <0.5% (MDL)

Analyzed by: *Pinehill Environmental*

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and
USEPA Method: 600/R-93/116 dated - July 1993.

Client: XCG-Oakville
Attention: Andreas K.
Project: 3-336-126-01
P.O.:
Sample Type: Paint
Date Received: Feb 21/06
Date Analysed: Feb 23-24/06
Date Reported: Feb 28/06



Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)							
			Expected	Found	Recovery	Blank	47258	47262	47263	47264	47264	
			Conc. (µg/g)	Conc. (µg/g)	%		W32-J1 (103) WP1	W32-J2 (107) WP1	W32-J2 (108) WP1	W32-J2 (108) WP1	W32-J2 (109) WP1 Duplicate	
Lead in Paint Chips	20	5000	233	223	98	<20	<20	<20	<20	<20	<20	

Sample Disposal: 30 Days from the Reporting Date.

Analyst(s): MR, PS

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
Lead in Paint Chips - ICP-AES/Digestion

No noteworthy photographs were taken in WW32.

APPENDIX 45
WW33 – WAREHOUSE

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

No noteworthy photographs were taken in WW33.

APPENDIX 46
WW34 – PRIVATE FAMILY VISIT DUPLEX (UNITS 3 & 4)

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

AIN OF CUSTODY RECORD[QC-2(2)]

X/G CONSULTANTS LTD
2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
ANDREAS KOURMENOU
905 829 8880 x 254 Fax: 905 829 8890

PLEASE RETURN ALL SAMPLES TO X/G
PLEASE KEEP IN SAME ZIPLOCK BAG

* * *

Page 1 of 1

Client P.O.#: _____
Client Project #: 3-336-126-01
Enleth Quote#: _____
Sampled by: AK
Guidelines needed: _____

Total # of Samples: 9
Anticipated health or chemical hazard: _____

Analysis Required

Analysis Required	Asbestos (TEM)	Asbestos (PLM)	Lead
	X	X	X
	X	X	X
	X	X	X
	X	X	X
	X	X	X
	X	X	X

Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)	Preserved Yes/No	Specify details if SDWA Le Reg. 170.03 applies
WW34-U3(108)-LMI FLOOR TILE					
WW34-U3(109)-STU					
WW34-U3(109)-WPI					
WW34-U3(110)-FL					
WW34-U3(110)-FL					
WW34-U3(113)-WPI					
WW34-U4(107)-WPI					
WW34-U4(106)-WPI					

Around Time _____
Working Days _____
Specify o _____
Lab _____

Check: 2/5 Sumits

Apply for 45 days Turnaround Time.

- 1. Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)
- 2. H/Sediment/Groundwater/Surface Water/Effluent/Drinking Water etc. - Pla. Specify.
- 3. Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03
- 4. Please specify if water samples are to be filtered by lab before analysis.
- 5. Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.
- 6. 0 (21 Apr. 2004)

Enleth's Bottle: YES NO

Sample	Temp °C	Containers	Lab Number
		bag	47283
			47284
			47285
			47286
			47287
			47288
			47289
			47290

Date: Feb 24/05 Time: 4:30pm
Date: Feb 21/05 Time: 4:30pm
Date: _____ Time: 5:30pm

Method of Storage: _____
Signature: _____

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/06
 Date Analysed:
 Date Reported: March 09/06

ENTECH

A Division of Agri-Service Lab Inc.
 8820 Kilmat Rd., Unit 36
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47283**	47286		
Client Sample ID	WW34-U3(108) L1N1	WW34-U3(110) FT1		
MACROSCOPIC EXAMINATION				
Accepted/Rejected		Accepted		
Homogeneity		Homogeneous		
Color:		Tan		
Texture:		Compact		
Description:		Tile		
ASBESTIFORM MINERALS				
% Chrysotile				
% Amosite				
% Crocidolite				
% Tremolite-Actinolite:				
% Anthophyllite				
% TOTAL ASBESTOS		ND		

** Client Sample No 47283 was prepared by Gravimetric Reduction.

ND = None Detected

Trace = <0.5%

Method:

Samples Analyzed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCO-Oakville
 Attention: Andreas K
 Project: 3-338-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/05
 Date Analysed:
 Date Reported: March 08/05

ENTECH

A Division of Agri-Service Lab Inc.
 6020 Pittman Rd., Unit 64
 Mississauga, ONT L4N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2083

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 eV
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.8 mm-A

SAMPLE ID		
Entech Sample ID	47283	
Client Sample ID	WW34-UX(108) LINI	
SAMPLE DESCRIPTION		
Homogeneity:	Homogenous	
Color:	Tan	
Texture:	Compact	
Description:	Tile	
SAMPLE PREP		
Starting Weight (g)	0.0576	
Residue Weight(g)	0.0418	
Weight Percent Residue:	72.57	
PERCENT ASBESTOS DETECTED IN RESIDUE		
Chrysotile	0	
Amosite	0	
Crocidolite	0	
Actinolite-Tremolite	0	
Anthophyllite	0	
TOTAL IN RESIDUE	ND	
ASBESTOS PERCENT IN SAMPLE	ND	

ND = None Detected

Trace = <0.5%

Method:

Samples Analyzed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analyzed by: Flinchem Environmental Ltd.




Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis

ENTECH

A Division of Agri-Service Lab Inc.
 1822 Kestrel Rd., Unit 14
 Mississauga, ONT L5H 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

Client: XCG-Oakville
 Attention: Andres K
 Project: 3-336-126-01
 P.O.: Sturco
 Sample Type: Feb 21/05
 Date Received: Feb 28/05
 Date Reported:


 Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
47284 U3(109) Stu1	Homogenous, white, soft, cementitious material.	None detected	Foam non-fibrous material Other 10-25% >75%	

None Detected = <0.5% (MDL)

Analysed by: Pinchin Environmental

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and

USEPA Method: 8000-R-93/116 dated - July 1993.

Client: XCG-Oakville
 Attention: Andrea K.
 Project: 3-336-126-01
 P.O.:
 Sample Type: Paint
 Date Received: Feb 21/05
 Date Analysed: Feb 23-24/05
 Date Reported: Feb 28/05

[Signature]

Sam Sanyal, M.Sc., C. Chem
 Manager, Inorganic Analysis

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)							
			Expected	Found	Recovery	Blank	47285	47287	47288	47289	47290	47290
			Conc. (µg/g)	Conc. (µg/g)	%		WN34- U3(109)-WP1	WN34- U3(110)-TR1	WN34- U3(113)-WP1	WN34- U4(107)-WP1	WN34- U4(108)-WP1	WN34- U4(108)-WP1 Duplicate
Lead in Paint Chips	20	5000	233	223	95	<20	<20	<20	<20	<20	<20	<20

Sample Disposal: 30 Days from the Reporting Date.

Analyte(s): MR, PS

Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

Method:
 Lead in Paint Chips - ICP-AES/Digestion



PHOTO 1: WW34 – Room B01 – Water leak and damage observed in the basement of the building. Also note mould growth on the wall to the right of the water boiler.

APPENDIX 47
WW35 – PRIVATE FAMILY VISIT DUPLEX (UNITS 5 & 6)

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

CHAIN OF CUSTODY RECORD[QC-2(2)]

720 H 97 NO AFFIDAVIT FOR SEARCHING
X/ SINGAPORE 9/10

Mr. Andreas Koufemenu
905 829 8890
Fax: 905 829 8890

PLEASE RETURN ALL SAMPLES TO XCG
PLEASE KEEP IN SAME ZIPLOCK BAG

辛 辛 辛 辛 辛

Client P.O.#:

Client Project #: 3-336-126-01

Entech Quote#:

Sampled by: AK

Guidelines needed:

Total # of Samples:

Anticipated health or chemical hazard:

Page 1 of 1

卷之四

Comments

Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg. 170 (D) applies	Analysis Required	
			Filtered Yes/No	Preserved Yes/No		Asbestos (PLM)	Heavy Metals (TSM)
WW35-US(108)-WP	Feb 17/05	Paint					
WW35-US(108)-WP	"	Tile					
WW35-US(108)-WP	"	Paint					
WW35-US(108)-STU	"	Stucco					
WW35-US(110)-FT	"	Tile					
WW35-US(113)-TK	"	Paint					
WW35-802-UFFI	4	UFFI					

PLEASE KEEP IN SAME ZIPLOCK BAG

Check: *[Signature]*

Acquired Time: *[Signature]*

1-7 Working Days

Specify to

Lab

Entech's Bottle: YES

Number of Containers: 1 bag

Temp °C: 1 bag

Lab Number: 47297, 47298, 47299, 47300, 47301, 47302, 47303

Method of Sampling: *[Signature]*

Condition: OK

Time: 3:30 PM, 4:30 PM, 5:30 PM

Items Apply for 43 days Turnaround Time	Supplier's Lead Time
(Storage charges may then be applicable.)	

3. Samples will only be returned to 30 days after receipt.

oil/Sediment/Groundwater/Surface Water/Sludge/Solid/Water etc. - Fin. Agency.

[illegible]

1 Please specify if water samples are to be filtered by **IND before analysis.**
2
3 Please specify if water samples will not be considered as Drinking Water, as defined in R17003.

4.0 (21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/06
 Date Analysed:
 Date Reported: March 08/06

ENTECH

A Division of Agri-Service Lab Inc.
 6820 Kilmist Rd., Unit #4
 Mississauga, ONT L5N 5M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 eV
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47298**	47301		
Client Sample ID	WW35-U5(108) LINT	WW35-U5(110) FT1		
MACROSCOPIC EXAMINATION				
Accepted/Rejected:		Accepted		
Homogeneity:		Homogeneous		
Color:		Tan		
Texture:		Compact		
Description:		Tile		
ASBESTIFORM MINERALS				
% Chrysotile				
% Amosite				
% Crocidolite				
% Tremolite-Actinolite				
% Anthophyllite				
% TOTAL ASBESTOS		ND		

** Client Sample No.47298 was prepared by Gravimetric Reduction.
 ND = None Detected Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-335-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/05
 Date Analysed:
 Date Reported: March 08/05

ENTECH

A Division of Agri-Service Lab Inc.
 9825 Kiltiest Rd., Unit 64
 Mississauga, ONT L4N 3M2
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertains To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 eV
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID		
Entech Sample ID	47298	
Client Sample ID	WW35-US(108) LNI	
SAMPLE DESCRIPTION		
Homogeneity	Homogenous	
Color:	Tan	
Texture:	Flexible	
Description:	Tile	
SAMPLE PREP		
Starting Weight (g)	0.3323	
Residue Weight (g)	0.2127	
Weight Percent Residue	64.01	
PERCENT ASBESTOS DETECTED IN RESIDUE		
Chrysotile	0	
Amosite	0	
Crocidolite	0	
Actinolite-Tremolite	0	
Anthophyllite	0	
TOTAL IN RESIDUE	ND	
ASBESTOS PERCENT IN SAMPLE	ND	

ND = None Detected

Trace = <0.5%


Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.
 Analyzed by: Pinchin Environmental Ltd.



Sam Banyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-126-01
 P.O.:
 Sample Type: Stucco
 Date Received: Feb 21/05
 Date Reported: Feb 28/05



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
47300 U5(109) Stu1	Homogeneous, white, soft, cementitious material.	None detected	Foam non-fibrous material 0.5-5% >75%	

None Detected = <0.5% (MDL)

Analysed by: *Pinchin Environmental*

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and USEPA Method: 600/R-93/116 dated - July 1993.

A Division of Agri-Service Lab Inc.
6620 Kilmart Rd., Unit 34
Mississauga, ONT L5N 1M3
TEL: (905) 821-1112
FAX: (905) 821-2095

Sample Type:	Paint
Date Received:	Feb 21/05
Date Analysed:	Feb 23-24/05
Date Reported:	Feb 28/05

Sam Sanyal, M.Sc., C. Chem
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Samples) Tested

[illegible]

Analysis: MR, PS

Note: - Department of Housing and Urban Development, Sept. 1980 (USA).

Method:
Lead In Paint Chips - CP-AES/Digestion

ENTECH

A Division of Agri-Service Lab Inc.

6820 Kildmat Rd., Unit #4

Mississauga, ON L5N 5M3

TEL: (905) 821-1112

FAX: (905) 821-2095

Client: XCG - Oakville

Attention: Andreas Kouremenos

Client Reference: Proj/P.O: 3-336-126-01

Date Received: Feb. 21, 2005

Date Analyzed: Feb. 28, 2005

Date Reported: March 02, 2005

Sample Type: UFF1

CERTIFICATE OF ANALYSIS

Urea Formaldehyde		Formaldehyde
Parameter Units are ug/g	Urea	
MDL	0.1	0.1
Lab Blank	<	<
47303 WWV35-B02-UFF1	<	16

Comments:

MDL = Method Detection Limit

< = Not detected (less than MDL); ug/g=ppm

Ref. Methods: Formaldehyde - NIOSH method 3500; Urea - AOAC Official method 967.07

Reported results only for specified sample tested.



Dr. Asit Raksit, Ph. D., C. Chem.

Manager, Organics

Analysts: Saima Johri, B. Sc.

Jayesh Bhavsar, M.Sc.



PHOTO 1: WW35– Room B01 – Water damage and mould growth observed in the basement of the building.

APPENDIX 48
WW36 – PRIVATE FAMILY VISIT DUPLEX (UNITS 7 & 8)

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS



6820 Kiltmat Rd., Unit #4
Mississauga, Ontario, Canada
L5N 5M3

TEL: (905) 821-1112
FAX: (905) 821-2095

1 of 1

Page 1 of 1

AIN OF CUSTODY RECORD[QC-2(2)]

Client: XG CONSULTANTS LTD
Address: 2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
Phone: 905 829 8890 Fax: 905 829 8890

Project: 2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6Z7
Sampled by: AK
Guidelines needed: AK

Anticipated health or chemical hazard: AK

Client Sample I.D.	Date Sampled	Sample Matrix	Sampling Information (W)		Specify details if SDWA Le Reg. 170.003 applies	Analysis Required		Temp °C	Containers	Lab Number	Entech's Bottle: YES NO	LAB USE ONLY
			Filtered Yes/No	Preserved Yes/No		Asbestos (PM)	Micro (TEM)					
WWSB-07(108)-W1	Feb 21/03	Feet of Paint				X	X	472.91	1 bag	472.91		
WWSB-07(108)-PT1	"	tile				X	X	472.92		472.92		
WWSB-07(109)-W1	"	bin				X	X	472.93		472.93		
WWSB-07(109)-STU	"	Sheet				X	X	472.94		472.94		
WWSB-07(110)-LIN	"	tile				X	X	472.95		472.95		
WWSB-08(109)-PT1	"	Paint				X	X	472.96		472.96		

Check: [Signature] Date: Feb 21/03 Time: 4:30 pm Method of Storage: dry

Revised by Entech: [Signature] Date: Feb 21/03 Time: 4:30 pm Condition: OK

Sample Label: [Signature] Date: Feb 21/03 Time: 5:30 pm

Notes: Storage charges may then be applicable.

1. Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)

2. Sediment/Groundwater/Surface Water/Drinking Water etc. - P/A. Specify.

3. Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03.

4. Please specify if water samples are to be filtered by lab before analysis.

5. Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.

1.0 (21 Apr. 2004)

See Overleaf

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-338-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/06
 Date Analysed:
 Date Reported: March 08/06

ENTECH

A Division of Agri-Service Lab Inc.
 8820 Kilmat Rd., Unit #4
 Mississauga, ONT L5N 3M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 eV
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-Å

SAMPLE ID				
Entech Sample ID	47292	**47295		
Client Sample ID	WW36-U7(108) FT1	WW36-U7(110) L1N1		
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted			
Homogeneity:	Homogeneous			
Color:	Tan			
Texture:	Compact			
Description:	Tile			
ASBESTIFORM MINERALS				
% Chrysotile				
% Amosite				
% Crocidolite				
% Tremolite-Actinolite				
% Anthophyllite				
% TOTAL ASBESTOS	ND			

** Client Sample No.47295 was prepared by Gravimetric Reduction.
 ND = None Detected Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

Analysed by: Fincham Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

Client: XCO-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 21/05
 Date Analysed:
 Date Reported: March 08/05

ENTECH

A Division of Agri-Services Ltd Inc.
 6826 Kilmat Rd., Unit E4
 Mississauga, ONT L5N 5M2
 TEL: (905) 821-1112
 FAX: (905) 821-2003

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 µm
 Camera Constant: 29.6 mm-A

SAMPLE ID		
Entech Sample ID	47295	
Client Sample ID	WW36-U7(110) L1N1	
SAMPLE DESCRIPTION		
Homogeneity:	Homogenous	
Color:	Tan	
Texture:	Compact	
Description:	Tile	
SAMPLE PREP		
Starting Weight (g)	0.1039	
Residue Weight(g)	0.07	
Weight Percent Residue:	67.37	
PERCENT ASBESTOS DETECTED IN RESIDUE		
Chrysotile	0	
Amosite	0	
Crocidolite	0	
Actinolite-Tremolite:	0	
Anthophyllite	0	
TOTAL IN RESIDUE	ND	
ASBESTOS PERCENT IN SAMPLE	ND	


ND = None Detected

Trace = <0.5%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

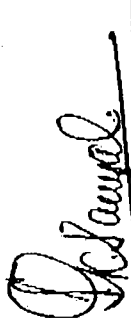
Analysed by: Pluckin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-126-01
 P.O.:

Sample Type: Tile
 Date Received: Feb 21/05
 Date Reported: Feb 28/05



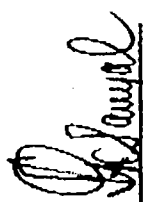
Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)		COMMENTS
		ASBESTOS	OTHER	
47294 U7(109) Stu1	Homogeneous, white, soft, cementitious material.	None detected	Foam non-fibrous material 0.5-5% >75%	

Client: XCG-Oakville
Attention: Andrea K.
Project: 3-336-126-01
P.O.:
Sample Type: Paint
Date Received: Feb 21/06
Date Analysed: Feb 23-24/06
Date Reported: Feb 28/06


Sam Sanyal, M.Sc., C. Chem.
Manager, Inorganic Analysis.

Certificate of Analysis

Data Pertain To Specific Sample(s) Tested

PARAMETER	Method Detection Limit (µg/g)	Abatement Level (µg/g) Interim Guidelines for Hazard Identification & Abatement in Public & Indian Housing*	CONTROL SAMPLE		SAMPLE DATA (µg/g)					
			Expected	Found	Recovery	Blank	47291	47293	47296	47298
			Conc. (µg/g)	Conc. (µg/g)	%		WWQS. UT(100). WP-1	WWQS. UT(100). WP-1	WWQS. UT(302). CP1	WWQS. UT(302). CP1 Duplicata
Lead in Paint Chips	20	5000	233	225	96	<20	<20	<20	<20	<20

Method:
Lead in Paint Chips - ICP-AES/Digestion

Sample Disposal: 30 Days from the Reporting Date
Analyte(s): Pb, Cu
Note: * - Department of Housing and Urban Development, Sept. 1990 (USA).

No noteworthy photographs were taken in WW36.

APPENDIX 49
WW37 – GUARD CONTROL POST

FLOOR PLANS
LABORATORY CERTIFICATES OF ANALYSES
SELECTED PHOTOGRAPHS

CHAIN OF CUSTODY RECORD [QC-2(2)]

Client: XG CONSULTANTS LTD
Address: 2620 BRISTOL CIRCLE SUITE 300 OAKVILLE, ON L6H 6T7
Contact: ANDREAS KOURBENIOS
Phone: 905 829 8880 x254 Fax: 905 829 8890
cc to (if other than the client)

Client P.O.#:
Client Project #: 3-336-128-01
Entech Quote#: AK
Sampled by: AK
Guidelines needed:

Total # of Samples:
Anticipated health or chemical hazard:

Page (1) of (1)

Sample #	Client Sample I.D.	Date Sampled	Sample Matrix *	Sampling Information (W)		Specify details if SDWA Le Reg. 170/03 applies	Analysis Required												Entech's Bottles: YES NO	Sample	Temp °C	Containers	Lab Number		
				Filtered Yes/No ***	Preserved Yes/No		Asbestos (PM)	Asbestos (TM)																	
1	WW37-101-PT1	FEB 10/05	Tile				X																		
2	WW37-101-CT1	FEB 10/05	Tile				X																		
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									
Turn Around Time		Relinquished to Entech (sign)		Received by Entech (sign)		Samples Logged By:														Date: Feb 11/05		Time: 4:40pm		Method of Shipment: Reg. off	
5-7 Working Days																				Date: Feb 18/05		Time: 4:40pm		Condition: OK	
Intact Lab																				Date:		Time:			

Charges Apply for <3 days Turnaround Time.
TE: Samples will only be retained for 30 days after reporting of results unless specifically requested by client. (Storage charges may then be applicable.)
Soil/Sediment/Groundwater/Surface Water/Effluent/Drinking Water etc. - Pla. Specify.
Please call the laboratory BEFORE submitting any samples which fall under Safe Drinking Water Act-2002/Reg. 169/03.
Please specify if water samples are to be filtered by lab before analysis.
Unless specified otherwise, all water samples will not be considered as Drinking Water as defined in R170/03.
4.0 (21 Apr. 2004)

Client: XCG-Oakville
 Attention: Andreas K.
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 18/05
 Date Analysed:
 Date Reported: Feb 25/05

ENTECH

A Division of Agri-Service Lab Inc.
 8820 Kilmel Rd., Unit #4
 Mississauga, ONT L5N 3M3
 TEL: (905) 821-1112
 FAX: (905) 821-2095

TEM Bulk Asbestos Test Report

Data Pertain To Specific Sample(s) Tested

ANALYSIS DATA

Calibration Date: 1/16/2005
 EDXA Resolution: 171.0 e.V
 Accelerating Voltage: 100 keV

Magnification: 9,600 X
 Calibration Constant: 1 cm = 1.04 μ m
 Camera Constant: 29.6 mm-k

SAMPLE ID				
Entech Sample ID	47146			
Client Sample ID	WW37-101-FT1			
MACROSCOPIC EXAMINATION				
Accepted/Rejected:	Accepted			
Homogeneity:	Homogeneous			
Color:	Blue			
Texture:	Compact			
Description:	Tile			
ASBESTIFORM MINERALS				
% Chrysotile				
% Amosite				
% Crocidolite				
% Tremolite-Actinolite:				
% Anthophyllite				
% TOTAL ASBESTOS	ND			

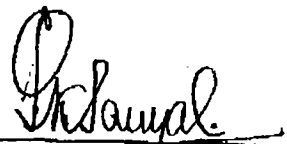
ND = None Detected

Trace = <0.30%

Method:

Samples Analysed by Transmission Electron Microscopy (TEM) using the method, EPA/600/R-93/116.

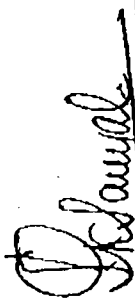
Analysed by: Pinchin Environmental Ltd.



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis

Client: XCG-Oakville
 Attention: Andreas K
 Project: 3-336-128-01
 P.O.:
 Sample Type: Tile
 Date Received: Feb 18/05
 Date Reported: Feb 25/05

A Division of Agri-Service Lab Inc.
 6820 Kilmad Rd., Unit #4
 Mississauga, ONT L5N 5W3
 TEL: (905) 821-1112
 FAX: (905) 821-2095



Sam Sanyal, M. Sc., C. Chem.
 Manager, Inorganic Analysis.

BULK SAMPLE ANALYSIS FOR ASBESTOS BY POLARIZED LIGHT MICROSCOPY AND DISPERSION STAINING

Data Pertains To Specific Sample(s) Tested

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)			COMMENTS
		ASBESTOS	OTHER		
47147 WW37-101-CT1	Homogeneous, beige, compressed fibrous material.	None detected	Cellulose 50-75% Mineral Wool 5-10% Perlite 25-50% Other non-fibrous material 0.5-5%		

None Detected = <0.5% (MDL)

Analysed by: *Pinchin Environmental*

In compliance with codes issued by: Occupation Health and Safety Division of the Ontario Ministry of Labour, dated 23 Aug 1985 and USEPA Method: 600/R-93/116 dated - July 1993.

No noteworthy photographs were taken in WW37.