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**Project #: R.065695.006**

**Iqaluit, Nunavut  
DFO Bunkhouse Building 1074,  
Hazardous Material Abatement  
Solicitation # E0208-151273/A**



## **DRAWINGS**

Sheet Size: A1 (841 mm x 594 mm)

PLOT: 350600-517-C-000.dwg

Saved by: Paul Fleming (new)



Public Works and  
Government Services  
Canada

Travaux publics et  
Services gouvernementaux  
Canada

REAL PROPERTY SERVICES  
Western Region

# HAZARDOUS MATERIALS ABATEMENT

DRAWING INDEX		
Sheet No.		TITLE
R.065695.006	C00	SHEET LIST
R.065695.006	C01	SITE LOCATION PLAN
R.065695.006	C02	LOCATIONS OF HAZARDOUS MATERIAL



**DFO BUNKHOUSE BUILDING 1074**  
**IQALUIT, NUNAVUT**

**ISSUED FOR REVIEW - SEPTEMBER 2014**


PLOT: 350047-501-C-001.dwg

Saved by: Paul Flemming (new)

Sep 18, 2014, 10:44am - USER: pflemming  
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Reference:  
FRANZ ENVIRONMENTAL INC. Fig 1, June 2012  
GOOGLE EARTH 2011



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SERVICES IMMOBILIERS  
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A	ISSUED FOR REVIEW	14/09/18
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PUBLIC WORKS  
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CANADA

Project title/Titre du projet

HAZARDOUS MATERIALS  
ABATEMENT - DFO  
BUNKHOUSE BUILDING 1074  
IQALUIT, NUNAVUT

Approved by/Approuvé par

Designed by/Conçu par  
K. SMITH

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PWGSC Project Manager/Administrateur de Projets TPWSC  
L. SMITH

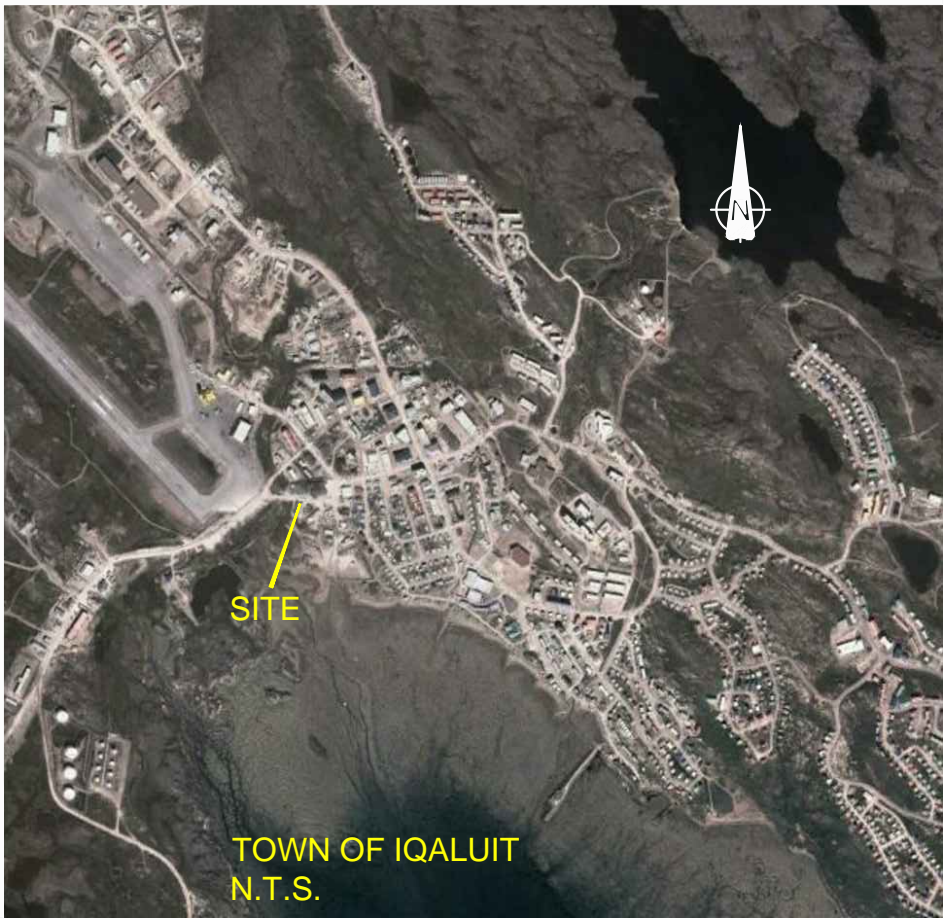
PWGSC Architectural and Engineering Resources Manager  
Ressources Architectural et en Génie TPWSC

Client/Client  
PWGSC

Drawing title/Titre du dessin

SITE LOCATION PLAN

Project No./ No. du projet R.065695.006	Sheet/Feuille C01 OF 2	Revision no./ La Révision no. A
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PLOT: 360047-501-C-0001.dwg

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Reference:  
FRANZ ENVIRONMENTAL INC. Fig 2, June 2012



LEGEND:

- OA ASBESTOS ROOFING MATERIALS
- CLK ASBESTOS WINDOW CAULKING
- FT ASBESTOS FLOORING
- VSF ASBESTOS VINYL SHEET FLOORING
- CP ASBESTOS CEMENT PRODUCT
- THROUGHOUT FUNCTIONAL AREA
- 1.025 ROOM LOCATION NUMBER

Not to scale / À l'échelle

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A	ISSUED FOR REVIEW	14/09/18
Revision/	Description/Description	Date/Date
Revision		

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PUBLIC WORKS  
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CANADA

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HAZARDOUS MATERIALS  
ABATEMENT - DFO  
BUNKHOUSE BUILDING 1074  
IQALUIT, NUNAVUT

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Drawing/Id de dessin

LOCATIONS OF  
HAZARDOUS MATERIALS

Project No./ No. du projet	Sheet No./ La Révision no.	Revision no./ La Révision no.
R.065695.006	CO2	A

## **APPENDIX A**

**Final – Designated Substances Survey, Bunkhouse Building –  
Department of Fisheries and Ocean, Iqaluit, Nunavut**

June 26, 2012

Project No. 2419-1201

Public Works and Government Services Canada  
Environmental Services – Edmonton Office  
10025 Jasper Avenue  
Edmonton, Alberta T5J 1S6  
Canada

**Private and Confidential**

**RE: FINAL - Designated Substance Survey  
Bunkhouse Building – Department of Fisheries and Oceans  
Iqaluit, Nunavut**

FRANZ Environmental inc. (FRANZ) Inc. was retained by Public Works Government Services Canada (PWGSC) to conduct a comprehensive Designated Substance Survey (DSS) of the CFO Bunkhouse Building located in Iqaluit, Nunavut (the site). The purpose of the DSS is to assemble a quantitative inventory of any potentially hazardous substances which may be present within the building prior to any scheduled demolition activities. The building was originally constructed circa 1962 for the Canadian Coast Guard (CCG) as a seasonal bunkhouse building. There have been several renovations completed since that time to suit the needs of the PWGSC. The entire building is vacant and is scheduled for complete demolition. This report summarizes the results of the DSS undertaken at the site by FRANZ on May 29 and 30, 2012.

## **1.0 INTRODUCTION**

This DSS was conducted in accordance with the requirements set under *Ontario Regulation 490/09, Designated Substances* (O. Reg. 490/09) and *Ontario Regulation 278/05, Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations* (O. Reg. 278/05). The Ontario regulations were used as there are no Nunavut regulations regarding the sampling of designated substances. At the time of the DSS, the single structure was vacant with no heat or electrical power. All doors and windows were boarded up to prevent unlawful entry.

The following substances are considered designated under O. Reg. 490/09: acrylonitrile, arsenic, asbestos, benzene, coke oven emissions, ethylene oxide, isocyanates, lead, mercury, silica, and vinyl chloride. Four (4) of these eleven substances are commonly encountered in structures such as the on-site building, and include:

- Asbestos in building insulation materials and boiler refractory;
- Lead in paint applications and in solder used in joints of copper pipe;
- Mercury in thermostats, pressure gauges, electrical switches and relays, and as a preservative in some paints; and
- Silica in concrete, masonry, paint, stone, and boiler refractory.

Section 30 (1) of the Ontario *Occupational Health and Safety Act* (OHSA) requires that an owner determine whether any designated substances are present at the project site. If so, a list of these substances must be compiled and provided to all bidders [Section 30(2)] at the tendering stage prior to demolishing or renovating a building. A DSS identifies the designated substances present, their locations, concentrations, and quantities. This information allows contractors involved in demolition or renovation activities to take the appropriate steps in controlling exposure of workers and the general public to designated substances that are present. For the purposes of this DSS survey, FRANZ will utilize legislation and regulations in the Province of Ontario as well as any applicable regulations and guidelines in Nunavut, that specifically address designated substances and hazardous materials management/disposal.

During the DSS, FRANZ staff collected samples of potential asbestos and lead-containing materials which were submitted for laboratory analysis. FRANZ also made observations of any potential mercury, polychlorinated biphenyls (PCBs), or Ozone Depleting Substances (ODS) for the purpose of identifying any additional substances which may be considered hazardous.

## **2.0 SITE INSPECTION / ANALYTICAL RESULTS**

FRANZ representative Mr. Brian Ryell and Simon Novalinga of Nunatta Environmental Services (Nunatta) conducted a visual inspection of the site on May 29 and 30, 2012. The site inspection was completed without escort. A representative selection of photographs taken during the site inspection are presented in Appendix B.

The site is located in the Town of Iqaluit, Nunavut (see Figure 1; Appendix A). Currently, on site is an “H” shaped vacated bunkhouse structure divided into east and west sections connected by an enclosed corridor. The single-storey building was originally constructed in 1962 for the Canadian Coast Guard (CCG) as a seasonal bunkhouse building. There have been several renovations completed since that time. The building is vacant and is scheduled for complete demolition. The single building is approximately 660 m<sup>2</sup> in size.

The building is constructed of wood framing with hardboard wood exterior siding. Windows are also constructed of wood. Roof and floor areas are supported by plywood box beams. The roof is sloped and finished with asphalt shingles.

In general, the interior floor surfaces of the building were finished with either exposed vinyl sheet flooring (VSF), vinyl floor tiles (VFTs), or carpeting. A few rooms had hardwood flooring under the carpeting. Walls were finished with drywall or wooden paneling and the ceiling areas were finished with either ceiling tiles (CTs) or drywall. Lighting is provided through a combination of suspended fluorescent lighting and single bulb fixtures.

As a component of this DSS, FRANZ completed selected destructive surveying in order to access behind ceiling and wall areas not normally accessed during DSS surveys. Holes were cut into a random number of drywall or panelled finished walls and ceilings in order to assess the presence of potential hidden hazardous materials (i.e., asbestos insulation). This destructive surveying was completed in addition to standard access of building features via existing ceiling access hatches, panels, or tiles. The roof area was accessed as part of the DSS.

### **3.0 ANALYTICAL RESULTS**

#### **3.1 Asbestos**

During the DSS, FRANZ observed several areas where asbestos-containing materials (ACMs) may be present. The following provides a brief summary of potential ACMs identified within the building at the site:

- Ceiling tiles (CTs) in several rooms throughout the west section of building;
- Drywall joint compound (DJC) along the drywall wall and ceiling areas throughout most of entire building;
- Vinyl Floor Tiles (VFTs) and Vinyl Sheet Flooring (VSF) in various offices, maintenance rooms, and bedrooms throughout building;
- Window caulking (CK) along windows of building;
- Vapour barrier insulating paper (PR) behind wall in one room;
- Roofing shingles (RF) along exterior roof area of entire building; and
- Non-Friable asbestos-containing cement Transite paneling (TR) in ceiling area of several rooms.

For the purposes of this DSS, FRANZ submitted 56 bulk samples for analysis of ACMs. During the survey, FRANZ identified four (4) visually distinct homogenous patterns of VFTs in the building. FRANZ collected representative samples of the VFTs material but did not submit them for analysis. Polarized Light Microscopy (PLM) analysis is the primary analytical technique used for asbestos determination; however, it can show significant bias leading to false negatives and

false positives for certain types of materials, including VFTs. PLM is limited by the visibility of the asbestos fibres. Many floor tiles contain fibres too small to be resolved by PLM. Should PWGSC remove any VFTs as part of the proposed demolition project, FRANZ can submit the tile samples for Transmission Electron Microscopy (TEM), which is a higher cost and more precise form of laboratory analysis. TEM analysis is not required under current legislation when dealing with bulk material issues. This level of analysis is recommended for sites where no other ACMs were documented and confirmation of non-ACM in VFTs would eliminate the requirement to prepare an Asbestos Management Plan (AMP) for a site. Otherwise, the regulation requires that these materials be assumed to contain asbestos; therefore, FRANZ is assuming the VFTs are asbestos.

The bulk asbestos samples were submitted to the EMSL Canada Inc. Laboratory in Mississauga, Ontario for PLM analysis. Table 1 presents the results of the laboratory asbestos testing on the bulk samples. The laboratory Certificates of Analysis are included in Appendix B. For Room Location Number references, see Figure 2: Sample Locations (Appendix B).

Table 1: Bulk Asbestos Sampling Results, CFO Bunkhouse, Iqaluit, Nunavut

Sample ID	Sample Description	Room Location Number	Asbestos Concentration (%) and Type	Condition
RF-01a	Roofing Tile	Exterior	None Detected	Good
RF-01b	Roofing Tile	Exterior	None Detected	Good
<b>RF-01c</b>	<b>Roofing Tile</b>	<b>Exterior</b>	<b>3% Chrysotile Asbestos</b>	<b>Good</b>
DJC-01a	Drywall Joint Compound	1-002	None Detected	Good
DJC-01b	Drywall Joint Compound	1-008	None Detected	Good
DJC-01c	Drywall Joint Compound	1-008	None Detected	Good
DJC-01d	Drywall Joint Compound	1-021	None Detected	Good
DJC-01e	Drywall Joint Compound	1-027	None Detected	Good
DJC-01f	Drywall Joint Compound	1-038	None Detected	Good
DJC-01g	Drywall Joint Compound	1-041	None Detected	Good
PR-01a	Cavity wall paper Insulation	1-025	None Detected	Good

Sample ID	Sample Description	Room Location Number	Asbestos Concentration (%) and Type	Condition
PR-01b	Cavity wall paper Insulation	1-025	None Detected	Good
PR-01c	Cavity wall paper Insulation	1-025	None Detected	Good
CT(1)-01a	Ceiling Tile	1-022	None Detected	Good
CT(1)-01b	Ceiling Tile	1-023	None Detected	Good
CT(1)-01c	Ceiling Tile	1-024	None Detected	Good
CT(2)-01a	Ceiling Tile	1-030	None Detected	Good
CT(2)-01b	Ceiling Tile	1-031	None Detected	Good
CT(2)-01c	Ceiling Tile	1-041	None Detected	Good
CK-01a	Window caulking	1-036	None Detected	Good
CK-01b	Window caulking	1-043	None Detected	Good
CK-01c	Window caulking	1-044	None Detected	Good
CK-01d	Window caulking	1-045	None Detected	Good
CK-01e	Window caulking	1-047	None Detected	Good
<b>CK-01f</b>	<b>Window caulking</b>	<b>1-045</b>	<b>4% Chrysotile Asbestos</b>	<b>Good</b>
CK-01g	Window caulking	Exterior window	Not Analysed	Good
VSF(1)-01a	Vinyl Sheet Flooring	1-001	None Detected	Good
VSF(1)-01b	Vinyl Sheet Flooring	1-001	None Detected	Good
VSF(1)-01c	Vinyl Sheet Flooring	1-023	None Detected	Good
VSF(2)-01a	Vinyl Sheet Flooring	1-002	None Detected	Good
VSF(2)-01b	Vinyl Sheet Flooring	1-005	None Detected	Good
VSF(2)-01c	Vinyl Sheet Flooring	1-008	None Detected	Good
VSF(3)-01a	Vinyl Sheet Flooring	1-004	None Detected	Good

Sample ID	Sample Description	Room Location Number	Asbestos Concentration (%) and Type	Condition
VSF(3)-01b	Vinyl Sheet Flooring	1-005	None Detected	Good
VSF(3)-01c	Vinyl Sheet Flooring	1-005	None Detected	Good
<b>VSF(4)-01a</b>	<b>Vinyl Sheet Flooring</b>	<b>1-020</b>	<b>20% Chrysotile Asbestos</b>	<b>Good</b>
VSF(4)-01b	Vinyl Sheet Flooring	1-008	Not Analysed	Good
VSF(4)-01c	Vinyl Sheet Flooring	1-005	Not Analysed	Good
VSF(5)-01a	Vinyl Sheet Flooring	1-026	None Detected	Good
VSF(5)-01b	Vinyl Sheet Flooring	1-038	None Detected	Good
VSF(5)-01c	Vinyl Sheet Flooring	1-041	None Detected	Good
VSF(6)-01a	Vinyl Sheet Flooring	1-031	None Detected	Good
VSF(6)-01b	Vinyl Sheet Flooring	1-031	None Detected	Good
VSF(6)-01c	Vinyl Sheet Flooring	1-031	None Detected	Good
VSF(7)-01a	Vinyl Sheet Flooring	1-035	None Detected	Good
VSF(7)-01b	Vinyl Sheet Flooring	1-035	None Detected	Good
VSF(7)-01c	Vinyl Sheet Flooring	1-035	None Detected	Good
VSF(8)-01a	Vinyl Sheet Flooring	1-048	None Detected	Good
VSF(8)-01b	Vinyl Sheet Flooring	1-048	None Detected	Good
VSF(8)-01c	Vinyl Sheet Flooring	1-048	None Detected	Good
VSF(9)-01a	Vinyl Sheet Flooring	1-039	None Detected	Good
VSF(9)-01b	Vinyl Sheet Flooring	1-039	None Detected	Good
VSF(9)-01c	Vinyl Sheet Flooring	1-050	None Detected	Good
<b>TR-01a</b>	<b>Cement Transite Panel</b>	<b>1-003</b>	<b>35% Chrysotile Asbestos</b>	<b>Good</b>
TR-01b	Cement Transite Panel	1-003	Not Analysed	Good

Sample ID	Sample Description	Room Location Number	Asbestos Concentration (%) and Type	Condition
TR-01c	Cement Transite Panel	1-003	Not Analysed	Good

Note: **Bold** indicated results above guidelines

As noted above, asbestos was detected in several materials submitted for analyses. According to O. Reg. 278/05, a material is considered an ACM if a bulk material sample contains 0.5% or more asbestos by dry weight. Under the Department of Environment, Government of Nunavut, *Environmental Guideline for Waste Asbestos (revised 2011)* (Waste Asbestos), asbestos waste is defined as a substance containing asbestos in a concentration greater than 1% by weight that is no longer wanted or is unusable for its intended purpose and is intended for disposal. Based on the review of the analytical results, the difference between the two regulations does not change the ACM designation of the materials documented at the site.

### 3.2 Lead

FRANZ observed potential lead-based paints in the following areas during the site visit on May 29 and 30, 2012:

- Grey paint along walls and ceilings of east wing;
- White paint along walls and ceilings of older west wing;
- Green and yellow paint along upper ceiling decks and cavity walls of building;
- Blue paint along window sills of east wing; and
- White paint along exterior of building.

FRANZ collected fifteen samples of interior and exterior paint material observed at the Site as potentially containing lead. The 15 paint samples were submitted to IATL in Mount Laurel, New Jersey for analysis of lead using the Atomic Absorption Spectroscopy (AAS) method. Table 2 presents the results of the laboratory lead testing on the paint samples. The laboratory Certificates of Analysis are provided in Appendix C.

Table 2: Lead Sampling Results – CFO Bunkhouse, Iqaluit, Nunavut

Sample ID	Paint Description and Sample Location	Lead Concentration by Weight (%)	Lead Concentration (ppm)
PT-01	1-002	<0.005	<50
<b>PT-02</b>	<b>1-003</b>	<b>11%</b>	<b>110,000</b>
<b>PT-03</b>	<b>1-007</b>	<b>11%</b>	<b>110,000</b>
PT-04	1-008	<0.005	<50
PT-05	1-012	<0.005	<50
<b>PT-06</b>	<b>1-013</b>	<b>2.2</b>	<b>22,000</b>
<b>PT-07</b>	<b>1-019</b>	<b>0.78</b>	<b>7,800</b>

Sample ID	Paint Description and Sample Location	Lead Concentration by Weight (%)	Lead Concentration (ppm)
<b>PT-08</b>	<b>1-025</b>	<b>6.4</b>	<b>64,000</b>
<b>PT-09</b>	<b>1-026</b>	<b>3.8</b>	<b>38,000</b>
PT-10	1-026	0.011	110
PT-11	1-030	<0.005	<50
PT-12	1-036	0.013	130
<b>PT-13</b>	<b>1-045</b>	<b>0.08</b>	<b>800</b>
PT-14	1-046	<0.005	<50
PT-15	Exterior	0.011	110

Note: **Bold** indicated results above guidelines

In 1976, the *Hazardous Products Act* limited the amount of lead in interior paint and in paint accessible to children to 0.5% by dry weight. In April 2005, the federal *Hazardous Products Act Surface Coating Materials Regulation (SOR/2005-109)* limited the allowable concentration of total lead present in a surface coating material (with some exceptions) to 90 mg/kg (or 90 ppm). According to the Department of Environment, Government of Nunavut, *Environmental Guideline for Waste Lead and Lead Paint (revised 2011)*, lead paint is defined as a paint or similar structural coating containing 0.06% lead by weight (600 ppm). Using this guideline, those surface coating materials with lead concentrations that exceed 600 ppm are considered to be lead-based.

The laboratory results indicated that seven (7) bulk paint samples collected from the site contained concentrations of lead in excess of the recommended limit of the Government of Nunavut. Samples PT-02 and PT-03 were green/yellow paint collected from the upper older ceiling areas along the east wing of the building and both contained 110,000 ppm of lead. These paint materials were most probably applied when the building was constructed during the 1960's. Samples PT-06 (22,000 ppm), PT-07 (7,800 ppm), PT-08 (64,000 ppm), and PT-09 (38,000 ppm) were older white/yellow/green materials from cavity walls and upper ceiling deck areas along the east wing and corridor of the building. Sample PT-13 (800) was older white window sill paint collected from the west wing of the building.

### 3.3 Mercury

The following is a summary of potential sources of mercury observed during the site inspection:

- Wall mounted mercury-containing thermostats (with mercury ampoules);
- Fluorescent light bulbs located throughout the on-site building may contain mercury; and
- Electrical components (including, but not limited to circuit breaker panels and heavy duty power switches) located throughout the site are potential sources of mercury.

No other potential sources of mercury were observed during the site inspection.

### **3.4 Silica**

In general, concrete, brick, stone, and mortar used in the construction of any building is assumed to contain silica. The building at the site is constructed of wood framing and does not contain any silica products. No other potential sources of silica were observed during the site inspection.

### **3.5 Other Designated Substances**

During the DSS, FRANZ did not encounter any of the following remaining designated substances in the building in any bulk form. These substances included: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

### **3.6 Ozone Depleting Substances**

During the DSS, FRANZ observed several pieces of refrigeration equipment been stored inside the building at the site. The equipment was not in use at the time of the DSS. FRANZ was unable to inspect the equipment to determine whether or not they were labelled as containing any refrigerant which may be considered ODS. There were no portable or window mounted air conditioners located in the building.

### **3.7 PCBs**

Fluorescent as well as single bulk light fixtures are present throughout the entire site. As a component of the DSS survey, FRANZ disassembled approximately a dozen fluorescent light fixtures located throughout the building. Most lamp ballasts inspected were marked as non-PCB; however, one (1) older light fixture located in one of the washrooms (Survey Area 1-045) was marked as a Sola unit and hand stamped with the code E69. FRANZ reviewed the document "*PCB Ballasts*", produced in 2009, by PCB Disposal in order to determine whether or not the ballast may contain PCBs. According to *Table 2 – Identification of Ballasts*, Sola manufactured ballasts are additionally marked with a hand stamped letter and number code in order to identify the year and month of manufacture. The letter E represent the month of the year, or May, and the last two (2) digits represents the year, or in this case 1969. PCBs are present in these ballasts up to and including December 1979 (L79); therefore, this ballast is assumed to contain PCBs. FRANZ estimates that there were approximately a dozen older fluorescent fixtures throughout several rooms of the west side of the building which are assumed to contain PCBs.

Under the new federal PCB Regulations passed on September 5, 2008 and published in the Canada Gazette September 17, 2008, ballasts are exempt from the deadlines that are imposed on in-service askarel transformers and PCB capacitors that must be removed and disposed of by December 31, 2009. All PCB ballasts are to be removed from service by Dec 31, 2025.

### **3.8 Mould**

As a component of this DSS, FRANZ did not inspect the building or building systems for the presence of mould or mould amplification sites.

## **4.0 DISCUSSION**

The results of the DSS and proposed remedial measures are summarized in the sections below.

### **4.1 Asbestos-Containing Materials**

ACMs are present in a limited amount of building materials throughout the building at the site. Confirmed as well as presumed ACM and asbestos that may be potentially concealed at the site are discussed below.

#### **4.1.1 Friable ACM**

##### Vinyl Sheet Flooring (VSF)

During the DSS, FRANZ observed nine (9) distinct types of friable VSF located throughout the east wing and connecting corridor of the building. Representative bulk sample [VSF(4)-01a] was found to contain 20% Chrysotile asbestos. In many areas, the flooring material was either completely exposed or covered with additional flooring material including carpeting and wood flooring. The VSF was observed to be in good condition. FRANZ estimates that there are approximately 200 m<sup>2</sup> of friable ACM VSF present throughout the building.

##### Window Caulking (CK)

Friable window caulking was observed along the interior areas of windows along the west side of the building. Windows along the east wing of the building had been replaced with wooden framed units. There was no caulking observed along the interior side of these units. A representative bulk sample [CK(1)-01f] collected from the exterior area of the building was found to contain 4% Chrysotile asbestos. The caulking was observed to be in good condition. FRANZ estimates that there is approximately 1 m<sup>2</sup> of friable ACM caulking present on each window along the west wing as well as along the exterior side of most windows of the entire building.

##### Roofing Tiles (RF)

Friable asphalt roofing shingles are present across the entire roof of the building. Representative sample [RF-01C] collected from the roof of the building was found to contain 3% Chrysotile asbestos. FRANZ estimates that there is approximately 750 m<sup>2</sup> of friable asphalt roofing shingles across the roof areas of the building.

#### **4.1.2 Non-Friable ACM**

##### Transite Cement Sheeting (TR)

Non-friable ACM Transite sheeting was observed along the ceiling areas of two (2) rooms in the east wing of the building. The Transite was used to insulate older vent pipes that appeared to previously vent the rooms. The metal vents were cut off at the lower ceiling but remained in place. The flat Transite panels were located along the upper deck of the ceiling surrounding the

pipng. Representative sample [TR-01(a)] was found to contain 35% Chrysotile asbestos. The material was in good condition. FRANZ estimates that there is approximately 0.3 to 0.5 m<sup>2</sup> of Transite material in the ceiling area between 2-3 rooms of the east wing of the building.

#### Vinyl Floor Tiles (VFTs)

During the DSS, FRANZ documented (4) visually distinct homogenous patterns of VFTs in the building. The VFTs were primarily located along the west wing of the building. Representative bulk samples were collected but were not submitted for analysis. Under current Ontario regulations (O. Reg. 278/05) and a review of Waste Asbestos guidelines as published by the Government of Nunavut, these materials are assumed to contain asbestos. FRANZ estimates that there is approximately 350 m<sup>2</sup> of assumed asbestos-containing VFTs along the west area of the building.

Prior to the demolition of the building, all documented and assumed friable and non-friable ACMs should be removed from the building in accordance with both O.Reg. 278/05 and the Waste Asbestos document published by the Department of Environment, Government of Nunavut. Ontario Regulation 278/05 applies a strict assessment and abatement protocol whereas the Nunavut Waste Asbestos document focuses on handling and disposal of waste asbestos locally, where local landfills permit it. FRANZ recommends that asbestos abatement specifications, merging the above mentioned documents, be prepared for use by the abatement/demolition contractor during the demolition/abatement project scheduled for the site.

## **4.2 Lead**

Based on the analytical results and on visual review, lead is found at the site in:

- Samples PT-02 and PT-03 were green/yellow paint collected from the upper older ceiling areas along the east wing of the building and both contained 110,000 ppm of lead. These paint materials were most probably applied when the building was constructed during the 1960's.
- Samples PT-06 (22,000 ppm), PT-07 (7,800 ppm), PT-08 (64,000 ppm), and PT-09 (38,000 ppm) were older white/yellow/green materials from cavity walls and upper ceiling deck areas along the east wing and corridor of the building.
- Sample PT-13 (800 ppm) was older white window sill paint collected from the west wing of the building.

Under the Department of Environment, Government of Nunavut, *Environmental Guideline for Waste Lead and Lead Paint* (Waste Lead), disposal options for waste lead and lead paint in Nunavut are limited. Disposal of lead waste in a local landfill is not an option. The disposal of waste lead paint may require physical stripping of the paint from the surface prior to disposal. Collected waste paint will most probably need to be shipped off site to a designated receiver as hazardous waste. In Ontario, the Ontario Ministry of Labour has published a document:

*Guideline for Lead on Construction Projects* (revised 2011) (Lead Guideline). This document lays out waste lead paint remediation and disposal options for construction/demolition projects.

FRANZ recommends that a waste lead paint abatement document be prepared to guide the demolition/abatement contractor utilizing O. Reg. 490/09, Waste Lead and Lead Guideline documents for use during the demolition/abatement project scheduled for the site.

#### 4.3 Mercury

Based on the results of the DSS the following potential and confirmed sources of mercury observed during the site inspection included:

- **Confirmed:** Approximately one half dozen wall mounted mercury-containing thermostats (with mercury ampoules);
- **Potential:** Fluorescent light bulbs located throughout the on-site building may contain mercury; and electrical components (including, but not limited to circuit breaker panels and heavy duty power switches) located throughout the site are potential sources of mercury.

No other potential sources of mercury were observed during the site inspection.

The Department of Environment, Government of Nunavut, *Environmental Guideline for Mercury-containing Products and Waste Mercury* (Waste Mercury), establishes mercury waste identification, assessment, disposal and transportation options for projects involving the handling of waste mercury. Recycling and disposal options for unwanted mercury-containing products and waste mercury in Nunavut are limited. Most waste will have to be separated and shipped to a registered receiver as hazardous waste.

FRANZ, therefore recommends that a waste mercury abatement document be prepared to guide the demolition/abatement contractor utilizing O. Reg. 490/09 and the Waste Mercury document for use during the demolition/abatement project scheduled for the site.

#### 4.4 PCBs

Fluorescent as well as single bulk light fixtures are present throughout the entire site. FRANZ estimates that there were approximately a dozen older fluorescent fixtures throughout several rooms of the west side of the building which most probably contain PCBs.

Under the new federal PCB Regulations passed on September 5, 2008 and published in the Canada Gazette September 17, 2008, all PCB ballasts are to be removed from service by Dec 31, 2025. The Department of Environment, Government of Nunavut, did not publish any documents specifically addressing the assessment, handling, and disposal of PCBs. However,

the Environmental Protection Act, RSNWT (Nu) 1988 (NUEPA) addresses environmental issues such as waste and protection of the environment.

FRANZ recommends that a PCB abatement document be prepared to guide the abatement/demolition contractor utilizing NUEPA, Ontario Regulation 362, R.R.O. 1990 of the Ontario Environmental Protection Act (PCBs), and Ontario Regulation 347 of the Ontario Environmental Protection Act (Waste Management) for use during the demolition/abatement project scheduled for the site.

#### **4.5 Ozone Depleting Substances**

During the DSS, FRANZ observed several pieces of refrigeration equipment been stored inside the building at the site. The equipment was not in use at the time off the DSS. FRANZ was unable to inspect the equipment to determine whether or not they were labelled as containing any refrigerant which may be considered ODS. There were no portable or window mounted air conditioners located in the building.

The Department of Environment, Government of Nunavut, *Environmental Guideline for Ozone Depleting Substances* (ODS Guideline) establishes updated ODS information on common ozone depleting substances, replacements, impacts of ozone depletion, and disposal of substances. Unwanted refrigeration and air conditioning equipment must be completely emptied of refrigerant. Household refrigeration and air conditioning equipment is exempt from this requirement as long as it is disposed of in a separate area of the landfill specifically set aside for the disposal of “white goods”: In Ontario, ODS are managed through Ontario Regulation 463/10 of the Ontario Environmental Protection Act (O. Reg. 463/10).

FRANZ, therefore recommends that a ODS abatement document be prepared to guide the abatement/demolition contractor utilizing the ODS Guidelines, Waste Management regulation, and O. Reg. 463/10 for use during the demolition/abatement project scheduled for the site.

#### **5.0 SUMMARY AND RECOMMENDATIONS**

Based on the findings of the DSS conducted at the vacated CFO Bunkhouse Building located in Iqaluit, Nunavut, the following designated substances have been identified:

- The results of the DSS survey confirmed the presence of both friable and non-friable asbestos-containing materials present at the site. These materials included friable roofing materials, vinyl sheet flooring and window caulking. Non-friable material included Transite cement boards and four (4) visually distinct homogenous patterns of VFTs. These materials are located throughout the entire building in varying amounts. Prior to the demolition of the building, all documented and assumed friable and non-friable ACMs should be removed from the building in accordance with both O. Reg. 278/05 and the Waste Asbestos document published by Department of Environment,

Government of Nunavut. FRANZ recommends that asbestos abatement specifications detailing asbestos waste removal and disposal options be prepared for use by the abatement/demolition contractor during the demolition/abatement project scheduled for the site.

- During the DSS survey, painted surfaces inside the building were sampled and found to contain lead. According to the Department of Environment Waste Lead document, lead paint is defined as a paint or similar structural coating containing 0.06% lead by weight (600 ppm). The laboratory results indicated that seven (7) bulk paint samples collected from the site contained concentrations of lead in excess of the recommended limit of 600 ppm. The lead paint was generally found on older painted wooden building materials located both above and behind newer drywall materials in the building as well as from window sills along the west wing of the building. FRANZ recommends that a waste lead paint abatement document detailing waste lead removal and disposal options be prepared to guide the demolition/abatement contractor for use during the demolition/abatement project scheduled for the site.
- The following potential and confirmed sources of mercury observed during the site inspection included approximately a half dozen wall mounted mercury-containing thermostats (with mercury ampoules). Additional potential sources included fluorescent light bulbs located throughout the on-site and electrical components (including, but not limited to circuit breaker panels and heavy duty power switches). FRANZ recommends that a waste mercury abatement document detailing waste mercury removal and disposal options be prepared to guide the demolition/abatement during the demolition/abatement project scheduled for the site.
- Fluorescent as well as single bulk light fixtures are present throughout the entire site. FRANZ estimates that there were approximately a dozen older fluorescent fixtures throughout several rooms of the west side of the building which most probably contain PCBs. FRANZ recommends that a PCB abatement document detailing waste PCB removal and disposal options be prepared to guide the abatement/demolition during the demolition/abatement project scheduled for the site.
- During the DSS, FRANZ observed several pieces of refrigeration equipment being stored inside the building at the site. There were no portable or window mounted air conditioners located in the building. FRANZ recommends that a ODS abatement document be prepared detailing waste ODS material handling and disposal options to guide the abatement/demolition contractor utilizing the ODS Guidelines during the demolition/abatement project scheduled for the site.

## 6.0 LIMITATIONS

This report has been prepared exclusively for Public Works and Government Services Canada and no other person or entity may rely upon the report without the express written consent of Franz Environmental Inc. Any use, which a third party makes of this report, or any reliance on

decisions made based on it, is the responsibility of such third parties. Franz Environmental Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this report.

Due to the nature of building construction, some limitations exist as to the scope of a Designated Substances Survey. The field observations, measurements and analysis are considered sufficient in detail and scope to form a reasonable basis for the findings and conclusions presented in this report. The findings and conclusions drawn by Franz Environmental Inc. are limited to the specific scope of work for which Franz Environmental Inc. was retained and are based solely on information generated as a result of the specific scope of work authorized by Public Works and Government Services Canada. The results of the survey are limited to visual assessment of areas made accessible to Franz Environmental Inc. personnel and information obtained from facility personnel.

The conclusions presented herein represent the best judgment of the assessor based on current environmental standards and on the site conditions observed during the site visit on May 29 and 30, 2012. Due to the nature of the investigation and the limited data available, the assessor cannot warrant against undiscovered environmental liabilities or conditions existing in inaccessible areas of the building at the site.

Should additional information become available, Franz Environmental Inc. requests that this information be brought to our attention so that we may re-assess the conclusions presented herein.

## 7.0 CLOSURE

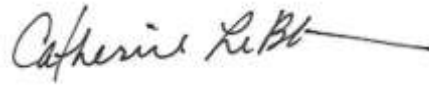
We trust that this report meets your current requirements. If you have any questions regarding this report, please contact the undersigned.

Yours truly,


**FRANZ Environmental Inc.**



Brian Ryell, B.A.A.  
Site Assessor



Catherine LeBlanc, B.Eng.  
Project Manager



Chris Ludwig, M.Eng., P.Eng., PMP  
Project Principal

Z:\Projects\2012\2419-1201 DSS Iqaluit\Final Report\FINAL DSS Bunkhouse Iqaluit Nunavut.doc


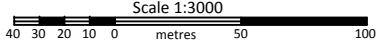
## **APPENDIX A**

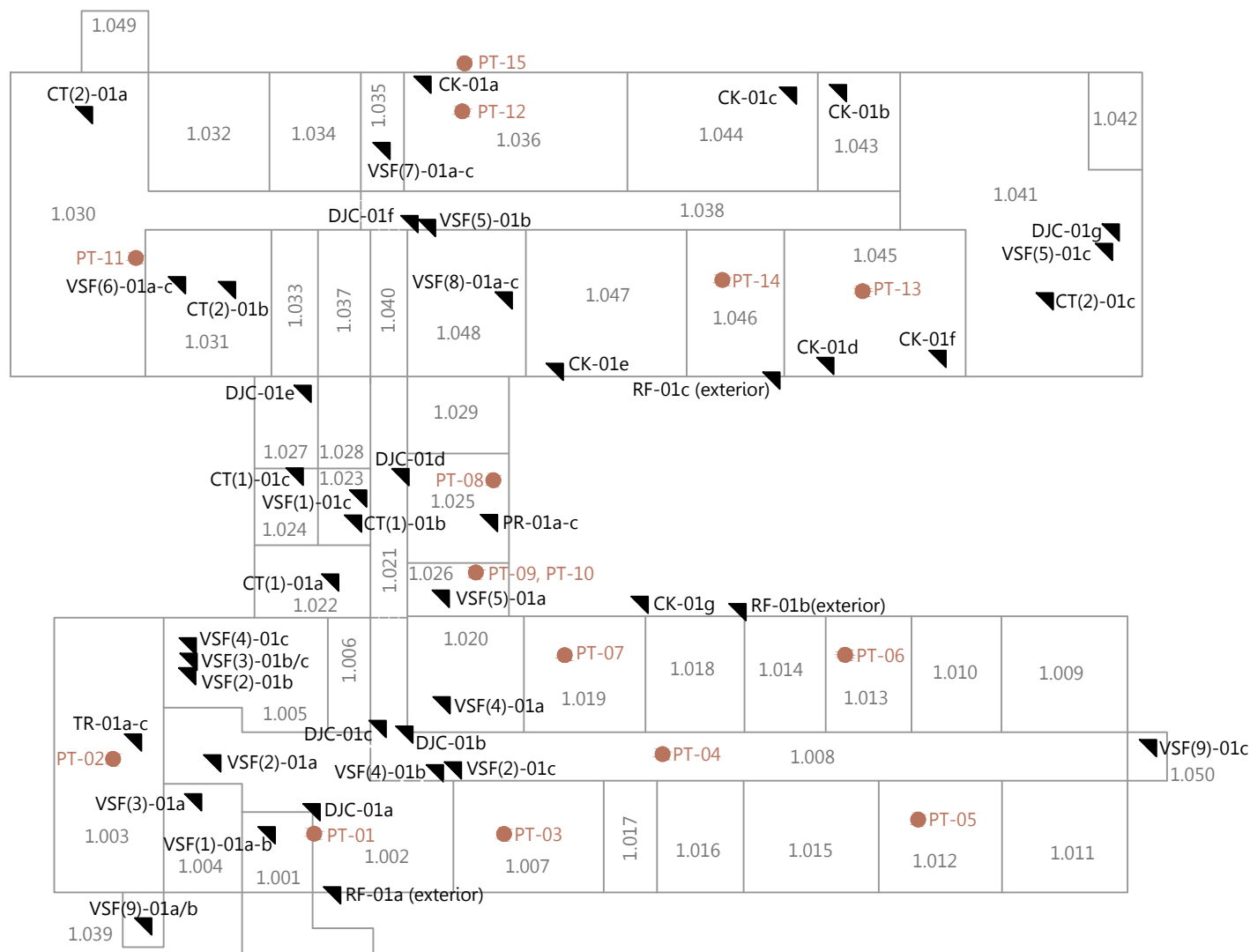
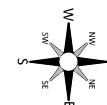
### **Figures**



Legend

Reference: Google Earth 2011

Title: <b>Site Location</b>	
 Project: Designated Substance Survey, Bunkhouse Building, Iqaluit, Nunavut	Client: PWGSC
	Date: June 2012
Scale 1:3000 	
Figure 1	



## Legend

▲ Asbestos Sample Location

● Paint Sample Location

1.039 Room Location Number

## Sample Locations



Date: June 2012

Project: Designated Substance Survey,  
Bunkhouse Building,  
Iqaluit, Nunavut

Client: PWGSC

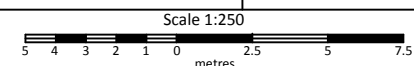


Figure 2

## **APPENDIX B**

### **Site Photographs**



**Photograph 1:** View of vacant CFO Bunkhouse building, Iqaluit, Nunavut.



**Photograph 2:** View of asbestos-containing asphalt roof shingles on building. Sample (RF-01c) contained 3% Chrysotile asbestos.



**Photograph 3:** View of asbestos-containing caulking along window sill of older window in west wing of building. Sample of caulking contained 4% Chrysotile asbestos.



**Photograph 4:** View of asbestos-containing vinyl sheet flooring (VSF4) (white speckled) along floor of east wing of building. Sample (VSF4-01a) contained 20% Chrysotile asbestos.



**Photograph 5:** View of asbestos-containing cement Transite panel along upper ceiling of in east wing of building. Sample of Transite contained 35% Chrysotile asbestos.



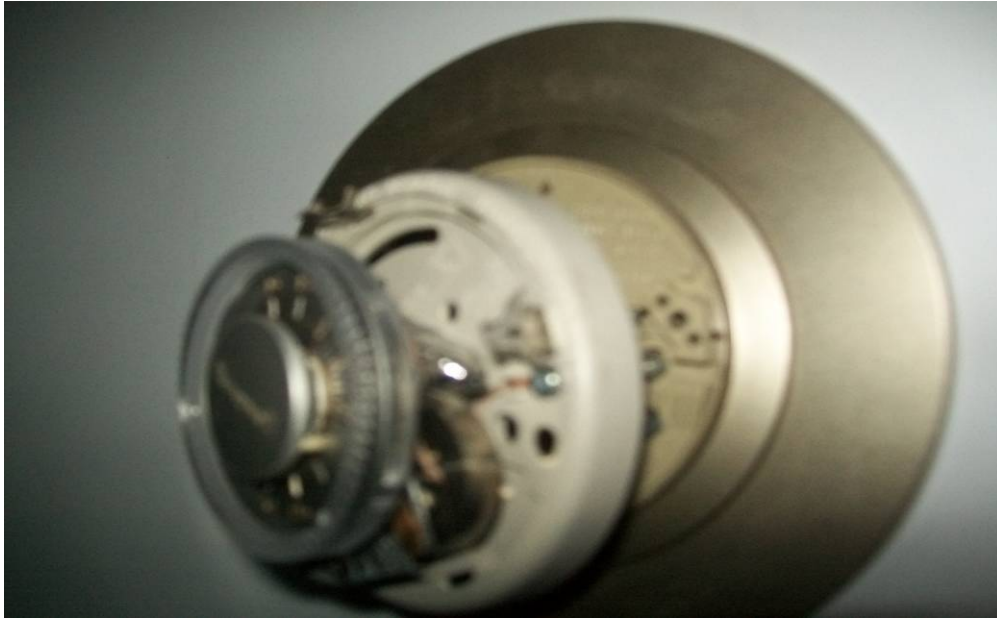
**Photograph 6:** View of older upper ceiling area of east wing of building. Paint samples collected from green paint of older ceiling contained 110,000 parts per million (ppm) of lead.



**Photograph 7:** View of older upper ceiling area of east wing of building. Paint samples collected from yellow paint of older ceiling contained between 7,800 – 64,000 ppm of lead.



**Photograph 8:** View of white paint along the exterior window sill along the west side of the building. Paint sample collected contained 800 ppm of lead.



**Photograph 9:** View of wall mounted thermostat with mercury-containing ampoules along east wing.



**Photograph 10:** View of assumed PCB-containing fluorescent lamp ballast along upper wall of washroom along west wing of building.



**Photograph 11:** View of typical assumed asbestos-containing vinyl floor tiles (“VFTs”) under carpeting along floor of west wing of building.



**Photograph 12:** View of additional typical assumed asbestos-containing VFTs under wood and other flooring material of building.

## **APPENDIX C**

### **Laboratory Certificates of Analysis**

# FRANZ ENVIRONMENTAL

## CHAIN OF CUSTODY – ASBESTOS ANALYSIS REQUEST FORM

Franz Environmental Inc., 4005 Hickory Drive, Mississauga, ON L4W 1L1, PH: 905 614 1978

Project #: DFO Iqaluit Bunkhouse  
 Inspector: Brian Ryell  
 Relinquished by: Brian Ryell  
 Report Results to: Brian Ryell (bryell@cogeco.ca)  
 and Chris Ludwig  
 (cludwig@franzenvironmental.com).

Received by: Madelon B  
 Sample Log-in: \_\_\_\_\_  
 Sample Prep: \_\_\_\_\_  
 Analyzed by: \_\_\_\_\_

Date: 12-05-31  
 Date: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Date: \_\_\_\_\_

temp: 21, 21, 21

QA/QC Review: \_\_\_\_\_ Date: \_\_\_\_\_

**INSTRUCTIONS** Proceed to next lettered sample (i.e. A, B, C, etc.), of each numbered sample set (i.e. 01, 02, 03, etc.), **only if previous sample is less than 0.5% asbestos content**  
 Please email results to bryell@cogeco.ca and cludwig@franzenvironmental.com  
**PLEASE SEND LAB RESULTS AS A SEPARATE (STAND ALONE) REPORT.**

Franz Sample No.	Lab Sample Number	Date Sampled	Sample Location	Sample Description	Analysis Required			Turnaround Time				
					PCM	PLM	TEM	5 Day	3 Day	2 Day	1 Day	Same Day
RF-01a		MAY 30	EXT. ROOF	tile		X		X				
RF-01b		I	"	"		X		X				
RF-01c		I	"	"		X		X				
DSC-01a		MAY 29	1002	DRY WALL COM.		X		X				
DSC-01b		"	1008	I		X		X				
DSC-01c		"	1008			X		X				
DSC-01d		"	1021			X		X				
DSC-01e		MAY 30	1027			X		X				
DSC-01f		"	1038			X		X				
DSC-01g		"	1041			X		X				
PR01a		MAY 29	1025	INSUL PAPER		X		X				

31-May-12 17:00

MARIJANE CRUZ



B280076

MBI

OTT-002

# FRANZ ENVIRONMENTAL

## CHAIN OF CUSTODY – ASBESTOS ANALYSIS REQUEST FORM

Franz Environmental Inc., 4005 Hickory Drive, Mississauga, ON L4W 1L1, PH: 905 614 1978

Project #: DFO Iqaluit Bunkhouse  
 Inspector: Brian Ryell  
 Relinquished by: Brian Ryell  
 Report Results to: Brian Ryell (bryell@cogeco.ca)  
 and Chris Ludwig  
 (cludwig@franzenvironmental.com).

Received by: *Morgan*  
 Sample Log-in: \_\_\_\_\_  
 Sample Prep: \_\_\_\_\_  
 Analyzed by: \_\_\_\_\_

Date: 12-05-31 17:00  
 Date: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Date: \_\_\_\_\_

temp: 21, 21, 21

QA/QC Review: \_\_\_\_\_ Date: \_\_\_\_\_

**INSTRUCTIONS** Proceed to next lettered sample (i.e. A, B, C, etc.), of each numbered sample set (i.e. 01, 02, 03, etc.), **only if previous sample is less than 0.5% asbestos content**  
 Please email results to bryell@cogeco.ca and cludwig@franzenvironmental.com  
**PLEASE SEND LAB RESULTS AS A SEPARATE (STAND ALONE) REPORT.**

Franz Sample No.	Lab Sample Number	Date Sampled	Sample Location	Sample Description	Analysis Required			Turnaround Time				
					PCM	PLM	TEM	5 Day	3 Day	2 Day	1 Day	Same Day
PRO1b		MAY 29	1025	INSUL PAPER		X		X				
PRO1c		"	1025	"		X		X				
CT(1)01a		MAY 29	1022	CEIL. TILE		X		X				
CT(1)01b		L	1023	L		X		X				
CT(1)01c		L	1024	L		X		X				
CT(2)01a		MAY 29	1030	CEIL. TILE		X		X				
CT(2)01b		MAY 30	1031	L		X		X				
CT(2)01c		"	1041	L		X		X				
CK01a			1036	window caulking		X		X				
CK01b			1043	L		X		X				
CK01c			1044	L		X		X				

# FRANZ ENVIRONMENTAL

## CHAIN OF CUSTODY – ASBESTOS ANALYSIS REQUEST FORM

Franz Environmental Inc., 4005 Hickory Drive, Mississauga, ON L4W 1L1, PH: 905 614 1978

Project #: DFO Iqaluit Bunkhouse  
 Inspector: Brian Ryell  
 Relinquished by: Brian Ryell  
 Report Results to: Brian Ryell (bryell@cogeco.ca)  
 and Chris Ludwig  
 (cludwig@franzenvironmental.com).

Received by: Madison B  
 Sample Log-in: \_\_\_\_\_  
 Sample Prep: \_\_\_\_\_  
 Analyzed by: \_\_\_\_\_

Date: 12-05-31  
 Date: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 temp: 21,21,21

QA/QC Review: \_\_\_\_\_ Date: \_\_\_\_\_

**INSTRUCTIONS** Proceed to next lettered sample (i.e. A, B, C, etc.), of each numbered sample set (i.e. 01, 02, 03, etc.), **only if** previous sample is less than 0.5% asbestos content  
 Please email results to bryell@cogeco.ca and cludwig@franzenvironmental.com  
**PLEASE SEND LAB RESULTS AS A SEPARATE (STAND ALONE) REPORT.**

Franz Sample No.	Lab Sample Number	Date Sampled	Sample Location	Sample Description	Analysis Required			Turnaround Time				
					PCM	PLM	TEM	5 Day	3 Day	2 Day	1 Day	Same Day
VSF(7)		MAY 30	1035	Vinylsheel		X						
VSF(7)		1	"	flooring		X						
VSF(7)			"			X						
VSF(8)			1048			X						
VSF(8)			"			X						
VSF(8)			"			X						
VSF(9)			1039			X						
VSF(9)			1039			X						
VSF(9)			1050			X						
TR-01a		MAY 29	1003	TRANSITE		X						
TR-01b			1003	"		X						
TR-01c			1003	"		X						

PLEASE ATTACH A COPY OF THIS REPORT TO EVERY LABORATORY ANALYSIS REPORT AND EVERY INVOICE.



# EMSL Canada Inc.

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

EMSL Canada Order 551202349  
Customer ID: 55PAS80C  
Customer PO: 280076  
Project ID:

**Attn:** Marijane Cruz  
Maxxam Analytics, Inc.  
32 Colonnade Road  
Unit 1000  
Nepean, ON K2E 7J6

**Phone:** (613) 274-3549  
**Fax:** (613) 274-0574  
**Collected:**  
**Received:** 6/02/2012  
**Analyzed:** 6/06/2012

**Proj:** JOB# B280076

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

**Client Sample ID:** NQ7640-01R\RF.01A

**Lab Sample ID:** 551202349-0001

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Black/Silver	0%	100%	None Detected	

**Client Sample ID:** NQ7641-01R\RF.01B

**Lab Sample ID:** 551202349-0002

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Black/Silver	0%	100%	None Detected	

**Client Sample ID:** NQ7642-01R\RF.01C

**Lab Sample ID:** 551202349-0003

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	rown/Various/Blac	0%	97%	3% Chrysotile	

**Client Sample ID:** NQ7643-01R\DJC.01A

**Lab Sample ID:** 551202349-0004

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	White	0%	100%	None Detected	

**Client Sample ID:** NQ7644-01R\DJC.01B

**Lab Sample ID:** 551202349-0005

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	White	0%	100%	None Detected	

**Client Sample ID:** NQ7645-01R\DJC.01C

**Lab Sample ID:** 551202349-0006

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	White	0%	100%	None Detected	

**Client Sample ID:** NQ7646-01R\DJC.01D

**Lab Sample ID:** 551202349-0007

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	White	0%	100%	None Detected	



# EMSL Canada Inc.

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

EMSL Canada Order 551202349  
Customer ID: 55PAS80C  
Customer PO: 280076  
Project ID:

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

**Client Sample ID:** NQ7647-01R\DJC.01E

**Lab Sample ID:** 551202349-0008

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	White	0%	100%	None Detected	

**Client Sample ID:** NQ7648-01R\DJC.01F

**Lab Sample ID:** 551202349-0009

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	White	0%	100%	None Detected	

**Client Sample ID:** NQ7649-01R\DJC.01G

**Lab Sample ID:** 551202349-0010

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	White	0%	100%	None Detected	

**Client Sample ID:** NQ7650-01R\PR.01A

**Lab Sample ID:** 551202349-0011

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Black	0%	100%	None Detected	

**Client Sample ID:** NQ7651-01R\PR.01B

**Lab Sample ID:** 551202349-0012

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Black	0%	100%	None Detected	

**Client Sample ID:** NQ7652-01R\PR.01C

**Lab Sample ID:** 551202349-0013

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Black	50%	50%	None Detected	

**Client Sample ID:** NQ7653-01R\CT(1).01A

**Lab Sample ID:** 551202349-0014

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Tan/White	80%	20%	None Detected	

**Client Sample ID:** NQ7654-01R\CT(1).01B

**Lab Sample ID:** 551202349-0015

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Tan/White	80%	20%	None Detected	



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

EMSL Canada Order 551202349  
Customer ID: 55PAS80C  
Customer PO: 280076  
Project ID:

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

**Client Sample ID:** NQ7655-01R\CT(1).01C

**Lab Sample ID:** 551202349-0016

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray	75%	25%	None Detected	

**Client Sample ID:** NQ7656-01R\CT(2).01A

**Lab Sample ID:** 551202349-0017

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Tan/White	80%	20%	None Detected	

**Client Sample ID:** NQ7657-01R\CT(2).01B

**Lab Sample ID:** 551202349-0018

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Tan/White	80%	20%	None Detected	

**Client Sample ID:** NQ7658-01R\CT(2).01C

**Lab Sample ID:** 551202349-0019

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray	30%	70%	None Detected	

**Client Sample ID:** NQ7659-01R\CK.01A

**Lab Sample ID:** 551202349-0020

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray/White	0%	100%	None Detected	

**Client Sample ID:** NQ7660-01R\CK.01B

**Lab Sample ID:** 551202349-0021

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray/White	0%	100%	None Detected	

**Client Sample ID:** NQ7661-01R\CK.01C

**Lab Sample ID:** 551202349-0022

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray/White	0%	100%	None Detected	

**Client Sample ID:** NQ7662-01R\CK.01D

**Lab Sample ID:** 551202349-0023

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray/White	0%	100%	None Detected	



# EMSL Canada Inc.

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

EMSL Canada Order 551202349  
Customer ID: 55PAS80C  
Customer PO: 280076  
Project ID:

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

**Client Sample ID:** NQ7663-01R\CK.01E

**Lab Sample ID:** 551202349-0024

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	White	0%	100%	None Detected	

**Client Sample ID:** NQ7664-01R\CK.01F

**Lab Sample ID:** 551202349-0025

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Brown	0%	96%	4% Chrysotile	

**Client Sample ID:** NQ7665-01R\CK.01G

**Lab Sample ID:** 551202349-0026

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012				Stop Positive (Not Analyzed)	

**Client Sample ID:** NQ7666-01R\VSF(1).01A

**Lab Sample ID:** 551202349-0027

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Tan/Blue	0%	100%	None Detected	

**Client Sample ID:** NQ7667-01R\VSF(1).01B

**Lab Sample ID:** 551202349-0028

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Tan/Blue	0%	100%	None Detected	

**Client Sample ID:** NQ7668-01R\VSF(1).01C

**Lab Sample ID:** 551202349-0029

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray	30%	70%	None Detected	

**Client Sample ID:** NQ7669-01R\VSF(2).01A

**Lab Sample ID:** 551202349-0030

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray	0%	100%	None Detected	

**Client Sample ID:** NQ7670-01R\VSF(2).01B

**Lab Sample ID:** 551202349-0031

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray	0%	100%	None Detected	



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EMSL Canada Order 551202349  
Customer ID: 55PAS80C  
Customer PO: 280076  
Project ID:

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

**Client Sample ID:** NQ7671-01R\VSF(2).01C

**Lab Sample ID:** 551202349-0032

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Brown/Gray	50%	50%	None Detected	

**Client Sample ID:** NQ7672-01R\VSF(3).01A

**Lab Sample ID:** 551202349-0033

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray/Various	0%	100%	None Detected	

**Client Sample ID:** NQ7673-01R\VSF(3).01B

**Lab Sample ID:** 551202349-0034

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray/Various	0%	100%	None Detected	

**Client Sample ID:** NQ7674-01R\VSF(3).01C

**Lab Sample ID:** 551202349-0035

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray	30%	70%	None Detected	

**Client Sample ID:** NQ7675-01R\VSF(4).01A

**Lab Sample ID:** 551202349-0036

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray/Tan/Various	0%	80%	20% Chrysotile	

**Client Sample ID:** NQ7676-01R\VSF(4).01B

**Lab Sample ID:** 551202349-0037

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012				Stop Positive (Not Analyzed)	

**Client Sample ID:** NQ7677-01R\VSF(4).01C

**Lab Sample ID:** 551202349-0038

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012				Stop Positive (Not Analyzed)	

**Client Sample ID:** NQ7678-01R\VSF(5).01A

**Lab Sample ID:** 551202349-0039

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray/Various	35%	65%	None Detected	



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EMSL Canada Order 551202349  
Customer ID: 55PAS80C  
Customer PO: 280076  
Project ID:

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

**Client Sample ID:** NQ7679-01R\VSF(5).01B

**Lab Sample ID:** 551202349-0040

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray/Various	35%	65%	None Detected	

**Client Sample ID:** NQ7680-01R\VSF(5).01C

**Lab Sample ID:** 551202349-0041

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray	40%	60%	None Detected	

**Client Sample ID:** NQ7681-01R\VSF(6).01A

**Lab Sample ID:** 551202349-0042

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Beige	35%	65%	None Detected	

**Client Sample ID:** NQ7682-01R\VSF(6).01B

**Lab Sample ID:** 551202349-0043

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Beige	35%	65%	None Detected	

**Client Sample ID:** NQ7683-01R\VSF(6).01C

**Lab Sample ID:** 551202349-0044

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray	40%	60%	None Detected	

**Client Sample ID:** NQ7684-01R\VSF(7).01A

**Lab Sample ID:** 551202349-0045

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Brown/White/Beige	35%	65%	None Detected	

**Client Sample ID:** NQ7685-01R\VSF(7).01B

**Lab Sample ID:** 551202349-0046

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Brown/White/Beige	35%	65%	None Detected	

**Client Sample ID:** NQ7686-01R\VSF(7).01C

**Lab Sample ID:** 551202349-0047

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray	20%	80%	None Detected	



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EMSL Canada Order 551202349  
Customer ID: 55PAS80C  
Customer PO: 280076  
Project ID:

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

**Client Sample ID:** NQ7687-01R\VSF(8).01A

**Lab Sample ID:** 551202349-0048

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray/Beige	35%	65%	None Detected	

**Client Sample ID:** NQ7688-01R\VSF(8).01B

**Lab Sample ID:** 551202349-0049

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray/Beige	35%	65%	None Detected	

**Client Sample ID:** NQ7689-01R\VSF(8).01C

**Lab Sample ID:** 551202349-0050

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray	0%	100%	None Detected	

**Client Sample ID:** NQ7690-01R\VSF(9).01A

**Lab Sample ID:** 551202349-0051

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray/Blue	0%	100%	None Detected	

**Client Sample ID:** NQ7691-01R\VSF(9).01B

**Lab Sample ID:** 551202349-0052

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray/Blue	0%	100%	None Detected	

**Client Sample ID:** NQ7692-01R\VSF(9).01C

**Lab Sample ID:** 551202349-0053

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Gray/Various	20%	80%	None Detected	

**Client Sample ID:** NQ7693-01R\TR.01A

**Lab Sample ID:** 551202349-0054

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012	Beige	0%	65%	35% Amosite	

**Client Sample ID:** NQ7694-01R\TR.01B

**Lab Sample ID:** 551202349-0055

**Sample Description:**

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012					Stop Positive (Not Analyzed)



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EMSL Canada Order 551202349  
Customer ID: 55PAS80C  
Customer PO: 280076  
Project ID:

## Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: NQ7695-01R\TR.01C

Lab Sample ID: 551202349-0056

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	6/06/2012				Stop Positive (Not Analyzed)	

### Analyst(s)

Matthew Davis	PLM	(34)
Merriam Haffar	PLM	(17)

Kevin Pang  
or other Approved Signatory

Any questions please contact Kevin Pang.

None Detected = <0.5%. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP of any agency of the U.S. Government.

Samples analyzed by EMSL Canada Inc. Mississauga, ON NVLAP Lab Code 200877-0

Initial report from: 06/06/2012 15:48:46

Your Project #: DFO IQALUIT BUNKHOUSE

**Attention: Chris Ludwig**

Franz Environmental Inc  
4005 Hickory Dr  
Mississauga, ON  
L4W 1L1

**Report Date: 2012/06/07**

## CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: B279973**

**Received: 2012/05/31, 17:00**

Sample Matrix: Paint  
# Samples Received: 15

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Metals in Paint (1)	10	2012/06/06	2012/06/06	CAM SOP-00408	SW-846 6010C
Metals in Paint (1)	5	2012/06/06	2012/06/07	CAM SOP-00408	SW-846 6010C

### Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited by SCC (Lab ID 97) for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

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

\* Results relate only to the items tested.

(1) This test was performed by Maxxam Analytics Mississauga

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

MARIJANE CRUZ, Project Manager

Email: MCruz@maxxam.ca

Phone# (905) 817-5756

=====

Maxxam Job #: B279973  
Report Date: 2012/06/07

Franz Environmental Inc  
Client Project #: DFO IQALUIT BUNKHOUSE

Sampler Initials: BR

-2-

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

Total cover pages: 2

Page 2 of 12

Maxxam Job #: B279973  
Report Date: 2012/06/07

Franz Environmental Inc  
Client Project #: DFO IQALUIT BUNKHOUSE

Sampler Initials: BR

### ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		NQ7236		NQ7237	NQ7238		NQ7239	NQ7240		NQ7241		NQ7242		
Sampling Date		2012/05/29		2012/05/29	2012/05/29		2012/05/29	2012/05/29		2012/05/29		2012/05/29		
	<b>Units</b>	<b>PT.01</b>	<b>RDL</b>	<b>PT.02</b>	<b>PT.03</b>	<b>RDL</b>	<b>PT.04</b>	<b>PT.05</b>	<b>RDL</b>	<b>PT.06</b>	<b>RDL</b>	<b>PT.07</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Metals</b>														
Lead (Pb)	mg/kg	<50	50	110000	110000	500	<50	<50	50	22000	500	7800	50	2872419

Maxxam ID		NQ7243	NQ7244		NQ7245	NQ7245	NQ7246	NQ7247	NQ7248	NQ7249	NQ7250		
Sampling Date		2012/05/29	2012/05/29		2012/05/29	2012/05/29	2012/05/30	2012/05/30	2012/05/30	2012/05/30	2012/05/30		
	<b>Units</b>	<b>PT.08</b>	<b>PT.09</b>	<b>RDL</b>	<b>PT.10</b>	<b>PT.10 Lab-Dup</b>	<b>PT.11</b>	<b>PT.12</b>	<b>PT.13</b>	<b>PT.14</b>	<b>PT.15</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Metals</b>													
Lead (Pb)	mg/kg	64000	38000	500	110	110	<50	130	800	<50	110	50	2872419

RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: B279973  
Report Date: 2012/06/07

Franz Environmental Inc  
Client Project #: DFO IQALUIT BUNKHOUSE

Sampler Initials: BR

### Test Summary

**Maxxam ID** NQ7236  
**Sample ID** PT.01  
**Matrix** Paint

**Collected** 2012/05/29  
**Shipped**  
**Received** 2012/05/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Metals in Paint	ICP	2872419	2012/06/06	2012/06/06	ARCHANA PATEL

**Maxxam ID** NQ7237  
**Sample ID** PT.02  
**Matrix** Paint

**Collected** 2012/05/29  
**Shipped**  
**Received** 2012/05/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Metals in Paint	ICP	2872419	2012/06/06	2012/06/07	ARCHANA PATEL

**Maxxam ID** NQ7238  
**Sample ID** PT.03  
**Matrix** Paint

**Collected** 2012/05/29  
**Shipped**  
**Received** 2012/05/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Metals in Paint	ICP	2872419	2012/06/06	2012/06/07	ARCHANA PATEL

**Maxxam ID** NQ7239  
**Sample ID** PT.04  
**Matrix** Paint

**Collected** 2012/05/29  
**Shipped**  
**Received** 2012/05/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Metals in Paint	ICP	2872419	2012/06/06	2012/06/06	ARCHANA PATEL

Maxxam Job #: B279973  
Report Date: 2012/06/07

Franz Environmental Inc  
Client Project #: DFO IQALUIT BUNKHOUSE

Sampler Initials: BR

### Test Summary

**Maxxam ID** NQ7240  
**Sample ID** PT.05  
**Matrix** Paint

**Collected** 2012/05/29  
**Shipped**  
**Received** 2012/05/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Metals in Paint	ICP	2872419	2012/06/06	2012/06/06	ARCHANA PATEL

**Maxxam ID** NQ7241  
**Sample ID** PT.06  
**Matrix** Paint

**Collected** 2012/05/29  
**Shipped**  
**Received** 2012/05/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Metals in Paint	ICP	2872419	2012/06/06	2012/06/07	ARCHANA PATEL

**Maxxam ID** NQ7242  
**Sample ID** PT.07  
**Matrix** Paint

**Collected** 2012/05/29  
**Shipped**  
**Received** 2012/05/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Metals in Paint	ICP	2872419	2012/06/06	2012/06/06	ARCHANA PATEL

**Maxxam ID** NQ7243  
**Sample ID** PT.08  
**Matrix** Paint

**Collected** 2012/05/29  
**Shipped**  
**Received** 2012/05/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Metals in Paint	ICP	2872419	2012/06/06	2012/06/07	ARCHANA PATEL

Maxxam Job #: B279973  
Report Date: 2012/06/07

Franz Environmental Inc  
Client Project #: DFO IQALUIT BUNKHOUSE

Sampler Initials: BR

### Test Summary

**Maxxam ID** NQ7244  
**Sample ID** PT.09  
**Matrix** Paint

**Collected** 2012/05/29  
**Shipped**  
**Received** 2012/05/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Metals in Paint	ICP	2872419	2012/06/06	2012/06/07	ARCHANA PATEL

**Maxxam ID** NQ7245  
**Sample ID** PT.10  
**Matrix** Paint

**Collected** 2012/05/29  
**Shipped**  
**Received** 2012/05/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Metals in Paint	ICP	2872419	2012/06/06	2012/06/06	ARCHANA PATEL

**Maxxam ID** NQ7245 Dup  
**Sample ID** PT.10  
**Matrix** Paint

**Collected** 2012/05/29  
**Shipped**  
**Received** 2012/05/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Metals in Paint	ICP	2872419	2012/06/06	2012/06/06	ARCHANA PATEL

**Maxxam ID** NQ7246  
**Sample ID** PT.11  
**Matrix** Paint

**Collected** 2012/05/30  
**Shipped**  
**Received** 2012/05/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Metals in Paint	ICP	2872419	2012/06/06	2012/06/06	ARCHANA PATEL



Maxxam Job #: B279973  
Report Date: 2012/06/07

Franz Environmental Inc  
Client Project #: DFO IQALUIT BUNKHOUSE

Sampler Initials: BR

### Test Summary

**Maxxam ID** NQ7247  
**Sample ID** PT.12  
**Matrix** Paint

**Collected** 2012/05/30  
**Shipped**  
**Received** 2012/05/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Metals in Paint	ICP	2872419	2012/06/06	2012/06/06	ARCHANA PATEL

**Maxxam ID** NQ7248  
**Sample ID** PT.13  
**Matrix** Paint

**Collected** 2012/05/30  
**Shipped**  
**Received** 2012/05/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Metals in Paint	ICP	2872419	2012/06/06	2012/06/06	ARCHANA PATEL

**Maxxam ID** NQ7249  
**Sample ID** PT.14  
**Matrix** Paint

**Collected** 2012/05/30  
**Shipped**  
**Received** 2012/05/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Metals in Paint	ICP	2872419	2012/06/06	2012/06/06	ARCHANA PATEL

**Maxxam ID** NQ7250  
**Sample ID** PT.15  
**Matrix** Paint

**Collected** 2012/05/30  
**Shipped**  
**Received** 2012/05/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Metals in Paint	ICP	2872419	2012/06/06	2012/06/06	ARCHANA PATEL

Maxxam Job #: B279973  
Report Date: 2012/06/07

Franz Environmental Inc  
Client Project #: DFO IQALUIT BUNKHOUSE

Sampler Initials: BR

Package 1	21.0°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

**GENERAL COMMENTS**

Maxxam Job #: B279973  
Report Date: 2012/06/07

Franz Environmental Inc  
Client Project #: DFO IQALUIT BUNKHOUSE

Sampler Initials: BR

# QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
2872419	Lead (Pb)	2012/06/06	90	75 - 125	<50	mg/kg	NC	35	101	75 - 125

N/A = Not Applicable

RPD = Relative Percent Difference

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

## Validation Signature Page

**Maxxam Job #: B279973**

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The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

A handwritten signature in black ink, appearing to read "Cristina Carriere".

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CRISTINA CARRIERE, Scientific Services

=====

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

# FRANZ ENVIRONMENTAL

## PAINT SAMPLE CHAIN OF CUSTODY/ANALYSIS REQUEST FORM

4005 Hickory Drive, Mississauga, Ontario, L4W 1L1, PH: 905 614 1978

Project #: DFO Iqaluit Bankhouse  
 Inspector: Brian Ryell  
 Relinquished by: Brian Ryell  
 Report Results to: Brian Ryell (bryell@franzenvironmental.ca) and Chris Ludwig (cludwig@franzenvironmental.com)

Received by: *Madison B*  
 Sample Log-in: \_\_\_\_\_  
 Sample Prep: \_\_\_\_\_  
 Analyzed by: \_\_\_\_\_

Date: 12.05.31  
 Date: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Date: \_\_\_\_\_

temp: 21, 21, 21

QA/QC Review: \_\_\_\_\_ Date: \_\_\_\_\_

INSTRUCTIONS: Please email all results to bryell@franzenvironmental.ca and Chris Ludwig (cludwig@franzenvironmental.com)

**PLEASE SEND LAB RESULTS AS A SEPARATE (STAND ALONE) REPORT.**

Franz Sample No.	Lab Sample Number	Date Sampled	Sample Location	Sample Description	Analysis Required			Turnaround Time				
					Lead			5 Day	3 Day	2 Day	1 Day	Same Day
Pt. 01		MAY 29/2012	1002		X			X				
Pt. 02			1003		X			X				
Pt. 03			1007		X			X				
Pt. 04			1008		X			X				
Pt. 05			1012		X			X				
Pt. 06			1013		X			X				
Pt. 07			1019		X			X				
Pt. 08			1025		X			X				
Pt. 09			1026		X			X				
Pt. 10			1026		X			X				
Pt. 11		MAY 30	1030		X			X				
Pt. 12		MAY 30	1036		X			X				

31-May-12 17:00

MARILANE CRUZ



B279973

MBI

OTT-002

PLEASE ATTACH A COPY OF THIS REPORT TO EVERY LABORATORY ANALYSIS REPORT AND EVERY INVOICE.

REC'D IN OTTAWA

Page 1 of 2

# FRANZ ENVIRONMENTAL

## PAINT SAMPLE CHAIN OF CUSTODY/ANALYSIS REQUEST FORM

4005 Hickory Drive, Mississauga, Ontario, L4W 1L1, PH: 905 614 1978

Project #:	DFO Iqaluit Bankhouse	Received by:	<u>medgenB</u>	Date:	<u>12.05.31</u>
Inspector:	Brian Ryell	Sample Log-in:		Date:	
Relinquished by:	Brian Ryell	Sample Prep:		Date:	
Report Results to:	Brian Ryell ( <a href="mailto:bryell@franzenv.com">bryell@franzenv.com</a> ) and Chris Ludwig ( <a href="mailto:cludwig@franzenv.com">cludwig@franzenv.com</a> )	Analyzed by:		Date:	
		QA/QC Review:		Date:	

temp: 21, 21, 21

INSTRUCTIONS Please email all results to [bryell@franzenv.com](mailto:bryell@franzenv.com) and Chris Ludwig ([cludwig@franzenv.com](mailto:cludwig@franzenv.com))

**PLEASE SEND LAB RESULTS AS A SEPARATE (STAND ALONE) REPORT.**

Pt. 013  
Pt. 014  
Pt. 015

MAY 30 1045  
" 1046  
" EXTERIOR

LEAD  
X  
X  
X

Turnaround  
5 DAY  
|

PLEASE ATTACH A COPY OF THIS REPORT TO EVERY LABORATORY ANALYSIS REPORT AND EVERY INVOICE.

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