PRE-RENOVATION

HAZARDOUS MATERIALS ASSESSMENT

REPORT

9525 WHARTON STREET
SUMMERLAND, BC V0H 1Z2

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PART 1 – EXECUTIVE SUMMARY

1.0 SCOPE OF PROJECT

Compass Environmental Solutions was retained by Angelique Wood of the District of Summerland to perform a Pre-Renovation Hazardous Material Assessment (HMA) of the building located at **9525 Wharton Street, Summerland**. HMA's can be done for public buildings built before 1991 to create a management plan for maintaining the health and safety of employees and the public who occupy the building while tracking any known or suspect Asbestos Containing Materials (ACM). Structures built before 1996 need to be tested for lead paint. This HMA was requested for Pre-Renovation purposes; therefore any ACMs identified during this assessment will need to be professionally abated by experienced, trained and qualified workers following the guidelines of WorkSafeBC for the removal of asbestos before this structure can be renovated.

Every effort was made to find all ACMs in this structure. The survey was performed as a moderate risk activity, using a ½ face respirator and wearing a Tyvek suit. Whenever destructive methods were used to access the samples, the surveyor made every effort to wet wipe or HEPA Vacuum debris after themselves to minimize any further contact with suspect asbestos debris and fibres.

The entire structure was constructed or renovated before 1991, so the HMA was done using careful destructive methods in order to access all layers of materials including flooring, roofing and walls. Materials which were examined included drywall compound, sound insulation, ceiling texture, exterior stucco, fire tape, ceiling tiles and window mastic. We also tested the paint for lead content. In all, 11 samples were taken to make sure we have a thorough and accurate survey. Materials not sampled include wood, metal, ceramic, concrete, and any obviously non-containing items and materials.

In addition to surveying for asbestos containing building materials, we also inspected for other possible hazardous and regulated materials. This included visually inspecting for PCBs and Mercury within electrical equipment, 4 lead based paint samples, any ozone depleting substances, and any potentially toxic, flammable, explosive or otherwise dangerous materials as per Part 20.112 of WorkSafeBC regulations.

If during the abatement or renovation process further hidden suspect materials are uncovered the project will need to be stopped, samples taken of the material (or we can always assume it is ACM) and abate it if necessary using proper procedures and safety measures according the WorkSafeBC guidelines.

All Asbestos Containing Building Materials (ACBMs) identified in this structure during this HMA survey are noted on the attached summary spread sheets by type, location, homogeneous grouping, and quantity. Please review these enclosed documents to ensure all Hazardous Materials are abated and dealt with in accordance to WorkSafeBC guidelines before a clearance letter is issued and this structure is renovated.

2.0 SUMMARY OF RESULTS

2.1 ASBESTOS CONTAINING MATERIALS IDENTIFIED @ 9525 WHARTON STREET:

NO ASBESTOS CONTAINING MATERIALS WERE FOUND DURING THIS SURVEY.

The following ACMs may be present but were not accessible during the survey:

- Electrical wiring insulation – keep site wet during renovation to minimize risk.
- Glues and adhesives if different than the adhesives attached to flooring tested.
- Floor leveling compound – none detected where the flooring was removed and tested.

2.2 OTHER HAZARDOUS MATERIALS IDENTIFIED @ 9525 WHARTON STREET:

PCB:

- PCB containing light ballasts were identified at the time of the survey.
    - All identified ballasts containing PCB's shall be packaged, transported and disposed of at an approved facility as per the Ministry of Environmental Waste Management Act-Hazardous Waste Regulations and by a qualified and licensed company.

Mercury:

- No lights containing mercury vapor were identified at the time of the survey.
- If there are any wall mounted thermostats containing liquid mercury in the switch mechanisms, I would recommend that they be packaged, transported and disposed of at an approved facility as per the Ministry of Environmental Waste Management Act-Hazardous Waste Regulations and by a qualified and licensed company and replaced with programmable digital ones. They are safer and far more energy effecient

Lead Based Paint:

- No lead painted surfaces were identified at the time of the survey.

Ozone Depleting Substances:

- No ozone depleting substances were identified at the time of the survey.

Toxic, Flammable, or Explosive Materials:

- No toxic, flammable or explosive materials were identified at the time of the survey.

Biological Contaminants:

- No underground tanks or other Biological Contaminants were noticed at the time of the survey. A Stage 1 & 2 has been done and this site has been cleared.

2.3 RECOMMENDATIONS FOR DEALING WITH ASBESTOS CONTAINING BUILDING MATERIALS

Identified Asbestos Containing Materials (ACMs) must be removed prior to the renovation of this structure. Renovating this residence will crush and break up many building materials creating some dust. If the ACMs are not removed prior to renovation asbestos fibres will be released into the air, creating a risk of worker and neighborhood exposure to airborne asbestos fibres. Asbestos containing materials and removal risk classifications are listed in **Appendix C**.

This abatement of all identified ACMs or contaminated materials must be performed in accordance with the Site Specific Exposure Control Plan which is created in accordance with Part 6 of the BC Occupational Health and Safety Regulation (BC Reg. 296/97.amended 312/2003).

Once removed ACMs must be transported by a registered hauler and disposed of in accordance with the Federal Transportation of Dangerous Goods Act and Regulations as well as Section 40 of the BC Ministry of Environmental Hazardous Waste Regulations.

2.4 RECOMMENDATIONS FOR DEALING WITH OTHER HAZARDOUS MATERIALS

If lead paint is found on the exterior or interior trim or soffits, etc. – these items must be removed separately with proper PPE and containment, transported to the landfill and disposed of following the RDOS mandated guidelines. Do not forget to keep this weigh bill from the landfill as proof this stage of the abatement has been completed.

The owner/manager is responsible to clean up the residence from most loose and unattached items such as fridges, stoves, paint cans or other possible Hazardous Material Containing items. You can typically bring these items to your local landfill and pay a disposal fee. They will then hire a local certified appliance mechanic to come periodically and remove any Freon or other regulated material.

PART 2 – ASBESTOS CONTAINING BUILDING MATERIALS

3.0 PROJECT SCOPE

Compass Environmental Solutions was retained by Angelique Wood of the District of Summerland to perform a Pre-Renovation Hazardous Materials Assessment at **9525 Wharton Street, Summerland** as required in Section 20.112 of the WorkSafeBC Occupational Health and Safety Regulations. The purpose of this Pre-Renovation survey is to identify any suspect ACMs, record locations samples are taken, quantify amounts of homogeneous ACMs to be removed, and quantify associated risks regarding the removal of the identified ACMs from the structure before renovation. This report will be very useful for an Abatement Contractor to estimate the actual cost of abating the ACMs. The consultant who completes the final air clearance sample and writes the clearance letter will also refer to this report to ensure all necessary procedures are completed.

The definition of the Scope and Exclusions of this Hazardous Materials Assessment is:

- Provide a list of all materials suspected to be ACMs.
- Collect and analyze bulk samples of all suspected ACMs and other Hazardous Materials in accordance with WorkSafeBC OH&S Regulation 20.112.
- Document all locations of confirmed ACMs – listed and on floor plan.
- Provide Quantities of all ACMs on whichever materials we can accurately measure. Destructive Sampling was used so quantities will be given on all materials. If another Suspect Material is come across during the abatement process – if it is minor it can be treated as an ACM and immediately abated or if it is major it can be sampled, analysed and then abated if necessary.
- Provide a recommended removal schedule and removal risk classification based on material types and risk factors for the abatement workers.
- Summarize all findings in a Hazardous Materials Assessment Report for the property owner which details results and recommendations.
- This Survey is completed in accordance with AHERA Inspection Requirements plus roofing materials were also sampled.

This Survey is limited to the building tested at **9525 Wharton Street, Summerland**. No confined or inaccessible spaces were identified while doing this HMA Survey. Therefore, every effort was made to find all ACMs, though something may still be hidden inside walls not opened, under the kitchen cabinets or other areas. I also wanted to leave the heating, water supply system and sewer system in tact so we could use them during the abatement process. Therefore, some of the materials not tested include:

- Packing and gasketing materials in boiler, heating, water supply and sewer system.
- Mastic and Mastic glues which are hidden and inaccessible.
- Insulation in any fire doors.
- Inaccessible pipes and pipe fittings.
- Inaccessible/hidden spaces where access was not observed.
- Concealed vermiculite in any possible concrete block walls covered by parging or other newer building materials.

This report will provide a General Abatement Risk Assessment, though the abatement contractor which is hired to do the actual removals can write a plan which may modify the risk levels and will need to write a detailed Work Action Plan / Exposure Control Plan to be submitted with the Notice of Project. This will complete the requirements for Parts 6.6 and 6.3 of the WorkSafeBC OH&S Regulations.

4.0 RECOMMENDATIONS FOR USING THIS ASBESTOS INVENTORY REPORT

Who should use this report?

Maintenance and Operations Staff / Business Owner

If this report was being completed to summarize all existing Hazardous Materials in a building which was going to have ongoing use, we would summarize all hazardous materials, locations of materials, quantities of materials, classification of materials, current condition and ongoing risk of interaction with materials, and a summary of recommendations of how to deal with existing ACMs and other Hazardous Materials. This however, is a Pre-Renovation Hazardous Material Assessment. As such, any ACMs discovered during the process of this site survey will need to be professionally abated before the residence can be removed from the property.

Abatement Contractors

Abatement contractors will find this report crucial to utilize in creating an accurate price based on ACMs identified to be removed, quantity of ACMs to be removed, pre-abatement removals to complete in order to have access to ACMs, General risk assessments based on ACMs to be removed – though they may have specialized methodologies or equipment which may modify or lower the risk assessment, and any other equipment required and costs related to it. Quantities of ACMs identified in this report will also affect the cost of hauling and tipping fees to get rid of the Hazardous Materials in accordance to WorkSafeBC guidelines and regulations.

Contractors

If you are doing any work in or around this structure which may potentially disturb or otherwise release dust or debris – ensure you have reviewed this report and are not going to create a risk of exposure to asbestos fibres for yourself, other workers on site or adjacent neighboring properties. Even after the identified ACMs are removed and the final clearance letter is received by the homeowner, it is highly recommended to do the renovation of this structure with constant wetting due to the close proximity of neighboring properties, the risk of undiscovered hazardous materials, dust and silica exposure, and best work practices utilized in the renovation industry.

Sign the Contractor Sign off Sheet enclosed at the end of this Report in Appendix A.

5.0 METHODOLOGY OF THIS SURVEY

This survey was carried out to identify any materials which were used in the construction and finishes of this residence and might be suspected of containing asbestos.

Based on site observations, information from the client and the experience of the building inspector doing this report, it is concluded that this structure was constructed in 1982 and will be treated completely as pre-1991 construction.

This is a Pre-Renovation Hazardous Materials Assessment so every effort utilizing careful destructive surveying methodologies was performed except on the heating system, hot water boiler, water supply system and the sewage system since we will need these to be functional in order to complete the abatements necessary to achieve clearance for this project. ACMs may still be discovered concealed within wall cavities, under kitchen cabinets or other hiding places that neither the home owner nor myself were readily able to identify or discover.

Any materials which are clearly not asbestos containing (ex. wood, metal, concrete, glass, ceramics, fibreglass, etc.) were not sampled. All conclusions based on age related hazards or non-hazards are based on this era of building construction.

All Materials determined to be Asbestos Containing (ACMs) were then classified as friable or non-friable. WorkSafeBC defines friable as “ACMs that can be crumbled or powdered by hand pressure”. Removal of highly friable ACMs are automatically labelled as a high risk activity unless the abatement contractor has a unique methodology or piece of equipment that will significantly reduce the risk of the work. An example of this is utilizing a truck mount HEPA Vac unit to remove vermiculite from an accessible attic space where it can be done without disturbing or impacting the vermiculite thereby minimizing the airborne fibres of this extremely friable material. Removal of Low Friability ACMs – ex. drywall compound or vinyl floor tile – is generally labelled a moderate risk activity. For more information on High Risk vs. Moderate Risk procedures please refer to the WorkSafeBC document entitled “Safe Handling of Asbestos Materials”.

Homogeneous areas were identified for each bulk sample of materials taken. Homogeneous area is defined as an area containing material that is “uniform in texture, colour, date of application and identical in every other way”. This is then clarified in the report as to how it pertains to each ACM identified by location and quantity.

Each Suspect material or application was then categorized using the following AHERA definitions:

- **Surfacing Material (SM):** Any material that is sprayed, trowelled or otherwise applied to surfaces (structural members, walls, ceilings, etc.) for acoustical, decorative, fireproofing or other purposes.

- **Thermal System Insulation (TSI):** Any material applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior component to prevent heat loss or gain, water condensation, or for other heating or protective purposes.

- **Miscellaneous (MIS):** Any material that doesn't fall into the two categories listed above. This typically includes flooring applications, ceiling tiles, siding, roofing and other manufactured items which can typically be removed utilizing moderate risk methods of abatement.

Once each Suspect material was categorized as SM, TSI or MIS a physical assessment was then carried out to determine the condition and potential for future disturbance for each material. In the case of using the Hazardous Material Assessment Report as an operational management tool we would then assess each ACM for removal priority or encapsulation or protection. Since this report is strictly for Pre-Renovation purposes we will list each ACM by generally acceptable Abatement Risk Category – though this could be modified by a highly experienced and specialized abatement contractor.

Inaccessible materials which may also need abatement (ex. pipe packing) are also listed.

Drywall Joint Compound, Plaster and Ceiling Texture

Bulk Samples were collected and analyzed for asbestos content for any of these materials identified in the building. For any building where multiple samples taken of the same homogeneous material return some positive and some negative results for asbestos content we either need to assume it is all ACMs or do more investigation and sampling to find out where the change in material usage may have taken place. This could be caused by renovations or alterations having been done but not being easily identifiable and well before the present owner knew what had occurred in the residence. If you can tell alterations have been done to a residence, we need to take samples from each homogeneous material from each area.

Vinyl Flooring and Ceiling Tiles

Bulk Samples of vinyl flooring and ceiling tiles are typically collected and analyzed for asbestos content based on homogeneous grouping. If differentiation of size, color, or pattern were noticed, more samples were collected and noted in the report. Destructive methods were used to get to any concealed flooring whenever necessary.

Vermiculite Insulation

Concrete block walls were drilled into and attic spaces were inspected for the presence of vermiculite insulation. All vermiculite insulation is assumed to be asbestos containing unless proven otherwise. To prove otherwise you would need to take four (4) Litre samples from different areas of the attic while digging right to the bottom of the vermiculite since the asbestos fibres tend to settle to the bottom over time. You also need to pay for a higher quality of sample analysis known as TEM which needs to come back absolutely clean of any ACMs. This is very rare. We will still take a sample to be analysed to figure out what asbestos type and content the vermiculite has to determine whether it can be modified down by using a truck mount HEPA Vac with Chrysotile asbestos content or not.

Known ACMs

Due to the age of the residence and the era of materials utilized in its construction, Visual identification of any corrugated paper pipe insulation, asbestos cement pipes, heat proof backing panels, and other pipe insulation will be noted as ACMs without collecting verification samples.

Suspected ACMs

Some items could not be sampled but are still included in the list of items to be abated since they are almost guaranteed to contain asbestos. This includes items such as pipe packing in the joints of the sewage system. The hot water tank looks to be from the mid to late 90's so therefore should be fine to dispose of as general waste. No ACMs were noticed during the visual inspection of the furnace.

Building Finishes and Membranes

Since this is a Pre-Renovation Hazardous Materials Assessment Report and destructive sampling methodologies were utilized in collecting bulk samples all siding, building paper and roofing materials were sampled and analyzed for asbestos content.

Laboratory Analysis

All bulk samples were sent to Caro Analytics – an accredited laboratory which uses Polarized Light Microscopy (PLM). PLM is done in accordance with the NIOSH 9002 method. WorkSafeBC specifies that all materials containing 0.5% or greater, and vermiculite containing any asbestos shall be considered as Asbestos Containing Material and must be abated before renovation of the structure.

Reporting and Removal Priority Classification

If this report was for ACM management purposes we would categorize items by the Asbestos Management Index (AMI) which is based on a matrix of several factors including Visibility, Friability, current Condition, Potential for contact and future Damage, and the Ease of Contact with the Material.

However, since this is strictly a Pre-Renovation HMA we will verify that all ACMs must be removed before renovation and the removal classifications will only have to deal with friability and Generally Acceptable Risk levels for the abatement process.

6.0 BUILDING OCCUPANT EXPOSURE RISK AND PROTECTION REQUIREMENTS

Since this structure is to be renovated in the imminently near future, all Asbestos Containing Materials identified during this Hazardous Materials Assessment Survey will need to be removed before the renovation proceeds.

It is assumed that the owner of this structure does not have an exposure plan for this site. Therefore, the abatement contractor chosen must create his own site specific safe work procedure or safe work plan as outlined in Part 6.8 of the WorkSafeBC OH&S Regulation before they can proceed with the abatement of the ACMs.

Highly Friable ACMs (ex. Ceiling textures, insulating cements, vermiculite insulation and asbestos paper backing on certain Vinyl Lino Flooring) pose the greatest risk to workers during the abatement process. The removal of these types of items is generally a High Risk Abatement Procedure unless the abatement contractor has a unique method or piece of equipment which can modify the risk to the worker to a lower category. None of these materials were found to be ACMs.

Low Friable ACMs (ex. VC Tile, drywall, ceiling tiles and concrete board) are typically not easily crumbled by hand and must be broken or ground to release asbestos fibres. These items typically represent less risk to the workers during the abatement process. The removal of these types of materials is generally a moderate risk activity unless the material is mechanically ground or broken during the removal process, or the volume and containment of the fibres makes it of severe risk to potential parties within proximity to the property.

Modified Risk can refer to bringing a high risk abatement procedure down such as utilizing a truck mounted HEPA Vac to remove and bag vermiculite insulation from an accessible attic space. It can also refer to bringing risk level up on a generally acceptable moderate risk removal with huge volumes and some overhead materials to be removed. Typically, Modified Risk Abatements are completed using a higher level of respiratory protection (ex. PAPR), a lot of encapsulant – as in the case of most Pre-Demolition abatements – since no one is going to re-occupy the residence, and involve aggressive air movement in the final clearance air sampling. The purpose of having a modified risk category is to allow highly experienced, professional and creative abatement contractors to remove ACM in as safe and efficient a manner as possible. Utilizing this category should NEVER place a worker or the public at increased risk.

7.0 AREAS OF RESTRICTED ENTRY DUE TO POOR CONDITION OF ACMs

No Areas of restricted entry due to poor condition of ACMs were identified during this survey. During the Abatement process the entire house will be considered an area of restricted entry.

8.0 REMEDIAL WORK

Remedial work typically refers to covering, enclosing, encapsulating, repairing or otherwise making it possible to leave ACMs in use on an active public building. All ACMs identified in the survey need to be removed before the building can be renovated.

PART III – OTHER HAZARDOUS AND REGULATED MATERIALS

9.0 SUMMARY OF SCOPE AND FINDINGS

A visual inspection was done during the survey to identify any Hazardous and Regulated Materials as well as any toxic, flammable or explosive materials.

A lead check kit was used to swab surfaces to see if the swab turns pink indicating lead is present in concentrations above 600 mg/kg. Samples of the exterior painted areas and interior homogeneous paint areas were swabbed to check the presence and level of lead.

No underground oil storage tanks were found during this survey and the property owner does not know of any. If a tank is found during the renovation or construction process it will be the property owner's responsibility to remove and remediate the area as per the BC Ministry of Environment Guidelines.

The following regulated materials are discussed within the scope of this report:

- **PCBs**
  - Known to cause cancer in humans – banned in 1979.
  - Primarily used as cooling oils in electrical equipment and light fixtures.

- **Mercury**
  - Known to cause poisoning through inhalation of vapours, ingestion of contaminated materials or absorption through the skin through direct contact with the liquid (ex. science class back in 1979).
  - Primarily used in older light fixtures and thermostats.

- **Lead Based Applications**
  - Lead was a common additive to paint to make it more durable.
  - Use of Lead in surface applications was banned in 1979.

- **Toxic, Flammable or Explosive Materials**
  - Common materials considered in this category include paint, fertilizers, pesticides, old fuel, waste oil, and other hydrocarbon based products.
  - No Toxic, Flammable or Explosive Materials observed during Survey.

- **Ozone Depleting Substances**
  - Includes Freon or Chlorofluorocarbons (CFCs). Commonly found in fridges, freezers and AC units. The improper handling of CFCs or Freon is banned under the Canadian Protection Act, 1999.

10.0 RECOMMENDATIONS

No other Hazardous or Regulated Materials were observed during the process of completing this Hazardous Materials Assessment Survey. My only recommendation would be to make sure if you did remove any of these other Hazardous or Regulated Materials that you handle them properly and bring them to the proper business or other material handler who can dispose of the substance or material in a safe and environmentally responsible way. I believe most landfills have recycling areas for CFC containing appliances, paint, pesticides, etc.

11.0 HAZARDOUS AND SPECIAL WASTE REGULATIONS

11.1 PROVINCIAL OH&S REGULATIONS

Workplace health and safety is regulated in BC by WorkSafeBC as per the Workers Compensation Act of Apr.15, 1998 and as amended by the Workers Compensation Amendment Act of Oct.1, 1999 incl. Part 3, Division 3, Sections 115–124 **General Duties of Employers, Workers and Others** and Part 5.54 **Exposure Control Plan**.

Specific actions and work practices are outlined in the WorkSafeBC OH&S Regulations. These Regulations contain legal requirements that must be met by all workplaces under the inspection jurisdiction of WorkSafeBC. Asbestos is governed by Section 6.1 through 6.32 and also by Section 20.112 – Hazardous Materials – Construction, Excavation and Renovation.

WorkSafeBC has published **Safe Handling of Asbestos,** a manual of standard safe practices. This manual outlines basic information on asbestos and asbestos products, health hazard requirements for worker protection, safe work procedures, and guidelines that should be followed in during the abatement process when removing Asbestos Containing Materials.

11.2 ENVIRONMENTAL REGULATIONS

Environmental Concerns in BC are regulated by the Ministry of the Environment (MoE) as per the Waste Management Act (RSBC) 1996, amended 1997. The waste regulation under the Waste Management Act relating to hazardous building materials is the Special Waste Regulation (SWR), BC Regulation 63/88, OC 268/88, amended BC Reg. 319/2004. This regulation outlines the requirements for the storage, transportation, treatment, recycling, and disposal of hazardous materials in BC. It also outlines the criteria to be used to characterize materials and waste as hazardous.

Ozone Depleting substances are regulated under Environment Canada under the Canadian Environmental Protection Acts Chlorofluorocarbon Regulations SOR/90-127, Ozone depleting Substances Regulations SOR/94-408 and Ozone depleting Substances Product Regulations SOR/90-584.

11.3 TRANSPORTATION OF HAZARDOUS OR REGULATED MATERIALS AND WASTE

The transportation of Hazardous Waste is governed under the Federal Transportation of Dangerous Goods Act and Regulations which outline the requirements for storage, handling and transportation of regulated products and waste.

All hazardous waste must be registered through the MoE, receive a waste generator number, and be transported by a properly licensed, registered and insured hauler to a landfill site which is also registered to receive hazardous waste. Super Save and BFI are the two registered haulers in the south Okanagan. Campbell Mountain Landfill is the designated Hazardous Materials receiving landfill in the South Okanagan.

12.0 EXCLUSIONS AND LIMITATIONS OF THIS REPORT

Compass Environmental Solutions was retained to do a Pre-Renovation Hazardous Material Assessment Report. We have done this report to fulfill the requirements of Section 20.112 Hazardous Materials in the OH&S Regulations prior to any salvage, cutting, damaging or renovating of any buildings or structures.

Site conditions and building construction may have not permitted the complete inspection into all wall cavities and void spaces. These cavities and spaces may contain asbestos applications not identified in this report. No further inspection of subflooring and flooring applications was performed once shiplap or plywood sheeting is encountered. Any suspect materials located within voids and wall spaces or under further layers of flooring should either be inspected and tested for asbestos content or abated as ACMs during the abatement process. As much as I would enjoy having Superman's Xray vision and be able to see through all layers and into all voids and wall cavities – I am only human. This will be the responsibility of the property owner.

Any ACM quantities listed in this document are an estimate only. We strive to be as accurate as possible, but accept no liability for quantities considered inaccurate or misleading. Abatement Contractors should verify quantities before submitting a contract price for completing the abatement.

Andrew Tiel, mba
NIOSH Certified, IICRC Certified
AHERA Certified #CABI-15-007

APPENDIX A

Asbestos Containing Materials (ACMs) Summary

Contractor Sign-Off Sheet

ASBESTOS CONTAINING MATERIALS (ACMS) SUMMARY

Asbestos Containing Materials Clearly Identified:

- No Asbestos Containing Materials were identified.

Suspect Materials:

- PCB containing lights and fixtures were observed at the time of this survey.
- If there are any wall mounted thermostats containing liquid mercury in the switch mechanisms, I would recommend that they be packaged, transported and disposed of at an approved facility as per the Ministry of Environmental Waste Management Act-Hazardous Waste Regulations and by a qualified and licensed company and replaced with programmable digital ones. They are safer and far more energy efficient

Inaccessible Areas or Potential ACMs:

- Wall Cavities
- Under Cabinets
- Electrical Wiring Insulation
- Packing in Bell-shaped Sewer Connection Points

Lead Paint:

- No lead paint was identified at this location at the time of this survey

CONTRACTOR SIGN-OFF SHEET

By signing below, you acknowledge that you have been informed as to the location of all known and suspected Asbestos Containing Materials (ACMs) and other hazardous and regulated materials within this structure. As an abatement contractor your job is to remove the ACMs utilizing proper and safe methodologies in accordance with WorkSafeBC guidelines and regulations. As a renovation contractor you realize that although every effort has been made to remove all ACMs before you do your work, you may still encounter some. Please keep the worksite wet during the renovation process to minimize any release of dust, ACMs or other hazardous materials – and for your own safety – wear a half face respirator until the entire structure is removed and hauled away and the site has been remediated and made ready to continue the construction process. It is never too late to take care of our lungs.

Company Name	Signature	Date

APPENDIX B

Analytical Sample Results

CERTIFICATE OF ANALYSIS

REPORTED TO	Compass Environmental Solutions BOX 173 Summerland, BC V0H 1Z0	**TEL** **FAX**	(250) 486-0818 -
ATTENTION	Andrew Tiel	**WORK ORDER**	7101906
PO NUMBER	AT17-DoS-Arts1018	**RECEIVED / TEMP**	2017-10-23 10:20 / NA
PROJECT	AT17-DoS-Arts1018	**REPORTED**	2017-10-24
PROJECT INFO	9525 Wharton - Arts & Culture Centre	**COC NUMBER**	No Number

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Authorized By: **Kristin McKeown**
Account Manager

If you have any questions or concerns, please contact me at kmckeown@caro.ca

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ANALYSIS INFORMATION

REPORTED TO	Compass Environmental Solutions	**WORK ORDER**	7101906
PROJECT	AT17-DoS-Arts1018	**REPORTED**	2017-10-24

Analysis Description	Method Reference	Technique	Location
Asbestos in Bulk Materials in Solid	EPA 600/R-93/116	Polarized Light Microscopy (PLM)	Kelowna

Method Reference Descriptions:

EPA	United States Environmental Protection Agency Test Methods

Glossary of Terms:

MRL	Method Reporting Limit
<	Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences
% dry	Percent (dry weight basis)

REPORTED TO	Compass Environmental Solutions	**WORK ORDER**	7101906
PROJECT	AT17-DoS-Arts1018	**REPORTED**	2017-10-24

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: AT17-DoS-Arts 1001 - DWC - Basement - Mens Bathroom (7101906-01) [Solid] Sampled: 2017-10-20						
Polarized Light Microscopy Analysis						
Asbestos Fibres	**None Found**	0.5	% dry	2017-10-23	2017-10-24	
Non-Asbestos Fibres	< 1	1.0	% dry	2017-10-23	2017-10-24	
Non-Fibrous Materials	**> 99**	1.0	% dry	2017-10-23	2017-10-24	
Sample ID: AT17-DoS-Arts 1002 - DWC - Basement - Utility Room (7101906-02) [Solid] Sampled: 2017-10-20						
Polarized Light Microscopy Analysis						
Asbestos Fibres	**None Found**	0.5	% dry	2017-10-23	2017-10-24	
Non-Asbestos Fibres	< 1	1.0	% dry	2017-10-23	2017-10-24	
Non-Fibrous Materials	**> 99**	1.0	% dry	2017-10-23	2017-10-24	
Sample ID: AT17-DoS-Arts 1003 - Sound Insulation - Basement - Ceilings (7101906-03) [Solid] Sampled: 2017-10-20						
Polarized Light Microscopy Analysis						
Asbestos Fibres	**None Found**	0.5	% dry	2017-10-23	2017-10-24	
Non-Asbestos Fibres	**70 - 80**	1.0	% dry	2017-10-23	2017-10-24	
Non-Fibrous Materials	**20 - 30**	1.0	% dry	2017-10-23	2017-10-24	
Sample ID: AT17-DoS-Arts 1004 - Stucco - Exterior - Beer Bottle stucco (7101906-04) [Solid] Sampled: 2017-10-20						
Polarized Light Microscopy Analysis						
Asbestos Fibres	**None Found**	0.5	% dry	2017-10-23	2017-10-24	
Non-Asbestos Fibres	< 1	1.0	% dry	2017-10-23	2017-10-24	
Non-Fibrous Materials	**> 99**	1.0	% dry	2017-10-23	2017-10-24	
Sample ID: AT17-DoS-Arts 1005 - Ceiling Texture - Basement - By West Side Stairs (7101906-05) [Solid] Sampled: 2017-10-20						
Polarized Light Microscopy Analysis						
Asbestos Fibres	**None Found**	0.5	% dry	2017-10-23	2017-10-24	
Non-Asbestos Fibres	**1 - 5**	1.0	% dry	2017-10-23	2017-10-24	
Non-Fibrous Materials	**95 - 99**	1.0	% dry	2017-10-23	2017-10-24	
Sample ID: AT17-DoS-Arts 1006 - Fire Taping - In Attic (7101906-06) [Solid] Sampled: 2017-10-20						
Polarized Light Microscopy Analysis						
Asbestos Fibres	**None Found**	0.5	% dry	2017-10-23	2017-10-24	
Non-Asbestos Fibres	< 1	1.0	% dry	2017-10-23	2017-10-24	
Non-Fibrous Materials	**> 99**	1.0	% dry	2017-10-23	2017-10-24	
Sample ID: AT17-DoS-Arts 1007 - Ceiling Tiles - Upstairs (7101906-07) [Solid] Sampled: 2017-10-20						

REPORTED TO	Compass Environmental Solutions	**WORK ORDER**	7101906
PROJECT	AT17-DoS-Arts1018	**REPORTED**	2017-10-24

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: AT17-DoS-Arts 1007 - Ceiling Tiles - Upstairs (7101906-07) [Solid] Sampled: 2017-10-20, Continued						
Polarized Light Microscopy Analysis						
Asbestos Fibres	**None Found**	0.5	% dry	2017-10-23	2017-10-24	
Non-Asbestos Fibres	**70 - 80**	1.0	% dry	2017-10-23	2017-10-24	
Non-Fibrous Materials	**20 - 30**	1.0	% dry	2017-10-23	2017-10-24	
Sample ID: AT17-DoS-Arts 1008 - DWC - Upstairs - Mens Bathroom (7101906-08) [Solid] Sampled: 2017-10-20						
Polarized Light Microscopy Analysis						
Asbestos Fibres	**None Found**	0.5	% dry	2017-10-23	2017-10-24	
Non-Asbestos Fibres	< 1	1.0	% dry	2017-10-23	2017-10-24	
Non-Fibrous Materials	**> 99**	1.0	% dry	2017-10-23	2017-10-24	
Sample ID: AT17-DoS-Arts 1009 - DWC - Upstairs - By West Side Stairs (7101906-09) [Solid] Sampled: 2017-10-20						
Polarized Light Microscopy Analysis						
Asbestos Fibres	**None Found**	0.5	% dry	2017-10-23	2017-10-24	
Non-Asbestos Fibres	< 1	1.0	% dry	2017-10-23	2017-10-24	
Non-Fibrous Materials	**> 99**	1.0	% dry	2017-10-23	2017-10-24	
Sample ID: AT17-DoS-Arts 1010 - Ceiling Texture - Upstairs - Central Area (7101906-10) [Solid] Sampled: 2017-10-20						
Polarized Light Microscopy Analysis						
Asbestos Fibres	**None Found**	0.5	% dry	2017-10-23	2017-10-24	
Non-Asbestos Fibres	**5 - 10**	1.0	% dry	2017-10-23	2017-10-24	
Non-Fibrous Materials	**90 - 95**	1.0	% dry	2017-10-23	2017-10-24	
Sample ID: AT17-DoS-Arts 1011 - Window Mastic (7101906-11) [Solid] Sampled: 2017-10-20						
Polarized Light Microscopy Analysis						
Asbestos Fibres	**None Found**	0.5	% dry	2017-10-23	2017-10-24	
Non-Asbestos Fibres	**5 - 10**	1.0	% dry	2017-10-23	2017-10-24	
Non-Fibrous Materials	**90 - 95**	1.0	% dry	2017-10-23	2017-10-24	

APPENDIX 1: QUALITY CONTROL DATA

REPORTED TO	Compass Environmental Solutions	**WORK ORDER**	7101906
PROJECT	AT17-DoS-Arts1018	**REPORTED**	2017-10-24

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup)**: Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- **Blank Spike (BS)**: A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- **Standard Reference Material (SRM)**: A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

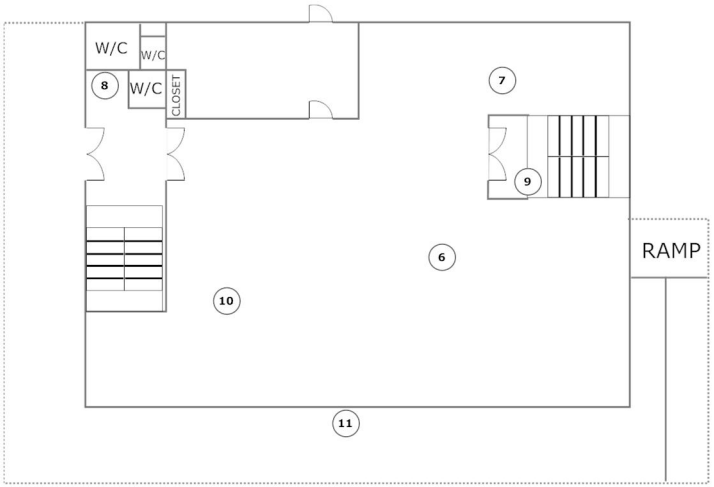
Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Polarized Light Microscopy Analysis, Batch B7J1759										
Blank (B7J1759-BLK1)				Prepared: 2017-10-23, Analyzed: 2017-10-24						
Asbestos Fibres	None Found	0.5	% dry							
Non-Asbestos Fibres	< 1.0	1.0	% dry							
Non-Fibrous Materials	> 99	1.0	% dry							
Blank (B7J1759-BLK2)				Prepared: 2017-10-23, Analyzed: 2017-10-24						
Asbestos Fibres	None Found	0.5	% dry							
Non-Asbestos Fibres	< 1.0	1.0	% dry							
Non-Fibrous Materials	> 99	1.0	% dry							
Blank (B7J1759-BLK3)				Prepared: 2017-10-23, Analyzed: 2017-10-24						
Asbestos Fibres	None Found	0.5	% dry							
Non-Asbestos Fibres	< 1.0	1.0	% dry							
Non-Fibrous Materials	> 99	1.0	% dry							
Duplicate (B7J1759-DUP1)		**Source: 7101906-01**		Prepared: 2017-10-23, Analyzed: 2017-10-24						
Asbestos Fibres	None Found	0.5	% dry		None Found				55	
Reference (B7J1759-SRM1)				Prepared: 2017-10-23, Analyzed: 2017-10-24						
Non-Asbestos Fibres	< 1.0	1.0	% dry	0.00			60-140			
Non-Fibrous Materials	95 - 99	1.0	% dry	98.0		99	60-140			
Reference (B7J1759-SRM2)				Prepared: 2017-10-23, Analyzed: 2017-10-24						
Non-Asbestos Fibres	< 1.0	1.0	% dry	0.00			60-140			
Non-Fibrous Materials	95 - 99	1.0	% dry	98.0		99	60-140			
Reference (B7J1759-SRM3)				Prepared: 2017-10-23, Analyzed: 2017-10-24						
Non-Asbestos Fibres	< 1.0	1.0	% dry	0.00			60-140			
Non-Fibrous Materials	95 - 99	1.0	% dry	98.0		99	60-140			

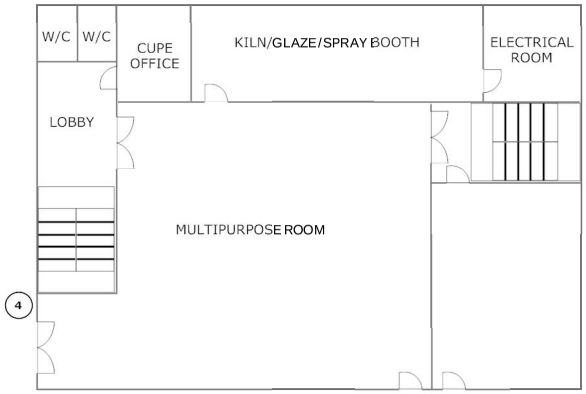
APPENDIX C

Site Drawing with Samples Labelled

Materials to be Abated

and Associated Risk Level with each ACM





N

SAMPLES COLLECTED

1. AT17-DoS-ARTS-1001-DWC
2. ATI7-DoS-ARTS-1002-DWC
3. ATI7-DoS-ARTS-1003 SOUND INSULATION
4. ATI7-DoS-ARTS-1004-STUCCO
5. ATI7-DoS-ARTS-1005-CEILING TEXTURE
6. ATI7-DoS-ARTS-1006-FIRE TAPING
7. AT17-DoS-ARTS-1007-CEILING TILES
8. AT17-DoS-ARTS-1008-DWC
9. AT17-DoS-ARTS-1009-DWC
10. AT17-DoS-ARTS-1010-CEILING TEXTURE
11. AT17-DoS-ARTS-1011-WINDOW MASTIC

NOTE:

SITE DIMENSIONS TBC
SITE DIMENSIONS WILL SUPERCEDE ALL DIMENSIONS ON THE DWG

Compass
Environmental Solutions
Box 173 Summerland, BC
250.486.0819

ANGELIQUE WOOD
DISTRICT OF SUMMERLAND

9525 WHARTON
SUMMERLAND, BC
V0H 1Z2

DRAWN	CHECKED	DATE	DRAWG NO.
TB		24-OCT-17	01

CARO Analytical Services
FINAL Analytical Testing Report
Work Order: 7101906
Report Date: 24/10/2017

Client Angelique Wood, District of Summerland
Attention Andrew Tiel
Project AT17-DoS-Arts-1018
Project Info 9525 Wharton Street, Summerland

Note: This is not the original data. Please refer to PDF / Hardcopy report.

LAB ID				7101906-01	7101906-02	7101906-03	7101906-04	7101906-05	7101906-06	7101906-07	7101906-08	7101906-09	7101906-10	7101906-11
CLIENT ID				AT17-DoS-Arts 1001-DWC-Basement-Mens Bathroom	AT17-DoS-Arts 1002-Basement-Utility Room	AT17-DoS-Arts 1003-Sound Insulation-Basement-Ceilings	AT17-DoS-Arts 1004-Stucco-Exterior-Beer Bottle Stucco	AT17-DoS-Arts 1005-Ceiling Texture-Basement-By West Side Stairs	AT17-DoS-Arts 1006-Fire Taping-In Attic	AT17-DoS-Arts 1007-Ceiling Tiles-Upstairs	AT17-DoS-Arts 1008-DWC-Upstairs-By Mens Bathroom	AT17-DoS-Arts 1009-DWC-Upstairs-By Westside Stairs	AT17-DoS-Arts 1010-Ceiling Texture-Upstairs-Central Area	AT17-DoS-Arts 1011-Window Mastic
DATE SAMPLED				2017-10-20	2017-10-20	2017-10-20	2017-10-20	2017-10-20	2017-10-20	2017-10-20	2017-10-20	2017-10-20	2017-10-20	2017-10-20
DATE RECEIVED				2017-10-23	2017-10-23	2017-10-23	2017-10-23	2017-10-23	2017-10-23	2017-10-23	2017-10-23	2017-10-23	2017-10-23	2017-10-23
MATRIX				Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid
General Method	**Analyte**	**Units**	**MRL**											
Polarized Light Microscopy Analysis	Asbestos Fibres	%		None Found	None Found	None Found	None Found	None Found	None Found	None Found	None Found	None Found	None Found	None Found
Polarized Light Microscopy Analysis	Chrysotile Asbestos	%	0.5											
Polarized Light Microscopy Analysis	Non-Asbestos Fibres	%		< 1 %	< 1 %	70 - 80%	< 1 %	1 - 5%	< 1 %	70 - 80%	< 1 %	< 1 %	5 - 10%	5 - 10%
Polarized Light Microscopy Analysis	Non-Fibrous Materials	%		> 99 %	> 99 %	20 - 30%	> 99 %	95 - 99%	> 99 %	20 - 30%	> 99 %	> 99 %	90 - 95%	90 - 95%
Quantity				-	-	-	-	-	-	-	-	-	-	-
Risk Level				-	-	-	-	-	-	-	-	-	-	-

APPENDIX D

SITE PHOTOGRAPHS

SITE PHOTOGRAPHS

Front sign. Exterior stucco of building

Sign showing date building was built

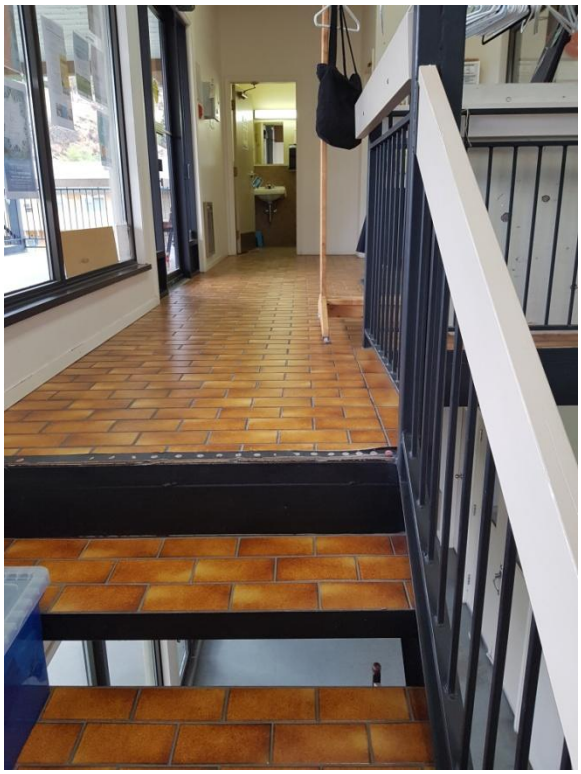
Bathrooms in the basement

Main open area in basement

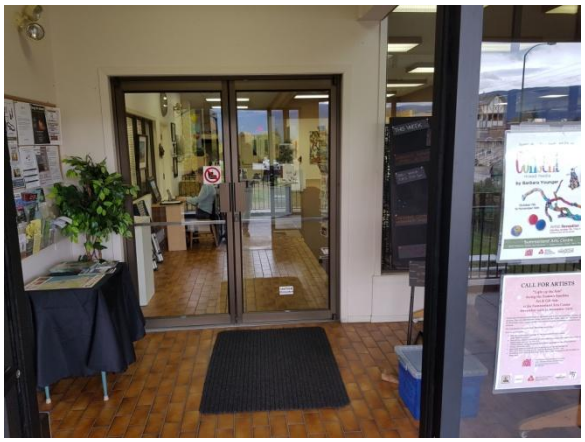
Storage Area in basement

NW Room in basement – sound insulation on the ceiling

Utility Room in basement – no white duct tape wrap on the heating ducts



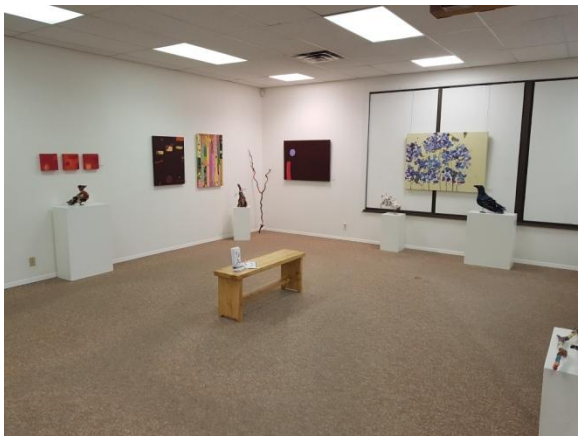
Stairs coming up from basement to main entrance area



Main Entrance Upstairs

Upstairs Bathrooms

Main Area Upstairs



Art display area

Above ceiling tiles – ducts do not have any mastic or tape on them

Attic has fiberglass insulation. Could definitely use another 6" for better long term energy efficiency.

Did not find any Vermiculite in this building.

WORK SAFE BC

WorkSafe Bulletin

Asbestos hazards in demolition, renovation, and salvage

Asbestos causes more worker deaths than any other workplace disease – what can you do?

Asbestos is extremely hazardous to people's health. Demolishing or renovating houses containing asbestos products can release asbestos fibres, which are extremely fine and can stay in the air for hours.

Unprotected workers exposed to asbestos-contaminated air can breathe in the fibres. This may cause serious health problems, such as lung disease and cancer.

What is asbestos?

Asbestos is a strong, fire-resistant mineral fibre. In the past, asbestos was used as insulation against heat or noise, and for fire protection. It was also added to materials such as cement and plaster to give them more structural strength.

Where was asbestos used in older homes?

Until the late 1980s, more than 3,000 products containing asbestos were used in house construction. The drawing on the back of this page shows potential sources of asbestos once commonly used in residential construction. When demolishing or renovating older houses, there is a high probability of encountering asbestos-containing materials, which may release asbestos fibres and put unprotected workers at risk.

What are my responsibilities as an employer or owner/builder?

You are responsible for ensuring the health and safety of all workers present at your workplace. You are also responsible for protecting the public from any asbestos-contaminated air.

When doing any demolition, renovation, or salvage work, you must follow WorkSafeBC OHS regulations, specifically Part 20: Demolition and Part 6: Asbestos.

What do I have to do before demolishing, renovating, or salvaging buildings or structures?

1. You must have a qualified person inspect the site to identify any asbestos that may be handled, disturbed, or removed. OHS Guideline G6.6-3 outlines the acceptable qualifications for persons conducting asbestos hazard assessments.
2. You must submit to WorkSafeBC a Notice of Project form for asbestos at least 24 hours before any asbestos removal or other work begins.
3. You must have trained and qualified asbestos-removal workers properly remove and dispose of all material containing asbestos.

You should receive written confirmation that the asbestos specified for removal on the Notice of Project form has been properly removed.

For more information, refer to OHS Guideline G20.112, which explains the hazards associated with the uncontrolled release of asbestos. It also provides information on the following topics:

- What constitutes a compliant asbestos inspection.
- Arranging for and confirming the safe removal of asbestos.
- What to do if you encounter more materials suspected to contain asbestos during demolition or salvage work.

What should I do if I find more asbestos-containing material once work has started?

Stop work immediately. Have trained and qualified asbestos-removal workers properly remove these materials before resuming work.

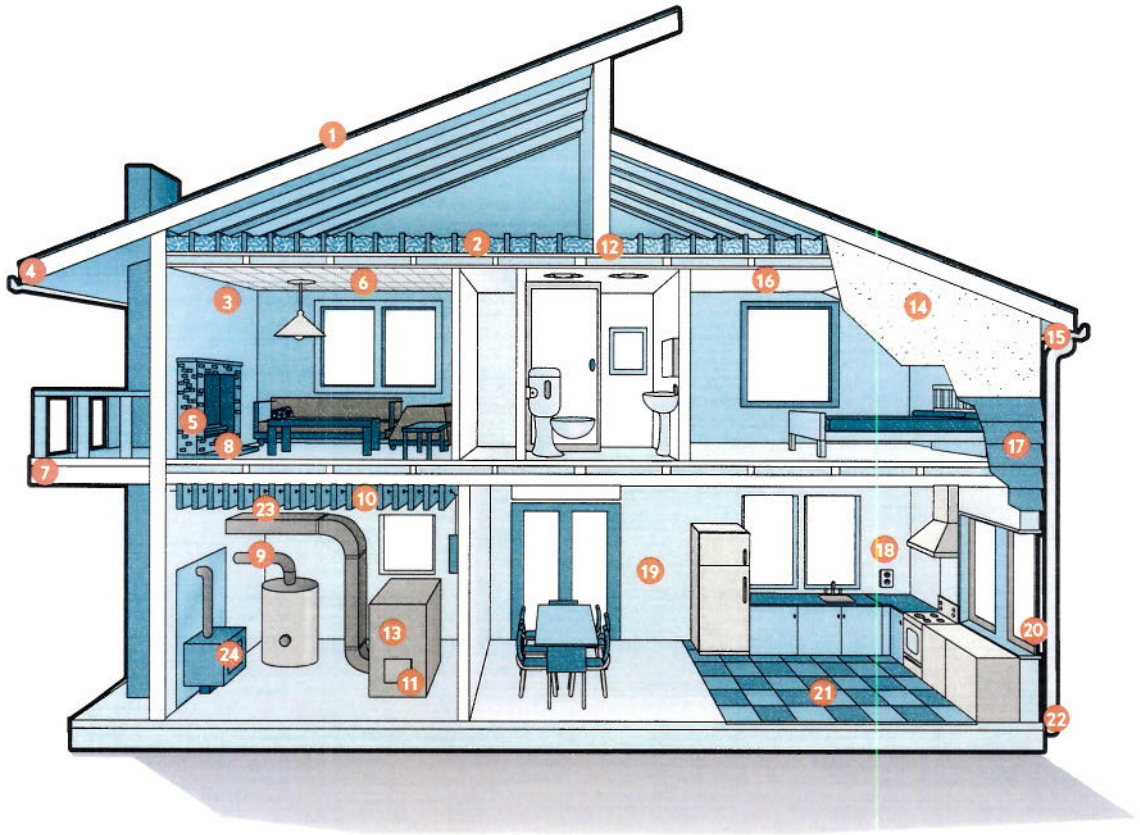
Where can I find additional information about asbestos and Notice of Project forms?

You can submit a Notice of Project form online at worksafebc.com. Asbestos survey and removal companies can be found in the Yellow Pages under Asbestos Abatement & Removal, Health & Safety Consultants, or Environmental Consultants.

For more information about asbestos and what your responsibilities are, check out hiddenkiller.ca or go to worksafebc.com for the following resources:

- *Safe Work Practices for Handling Asbestos* booklet
- Safety at Work Construction webpage
- OHS Guideline G6.8: Procedures for abatement of asbestos-containing material during house and building demolition/renovation

Potential sources of asbestos in the home.



1. Roof felt and shingles
2. Loose, blown-in insulation, such as vermiculite
3. Incandescent light fixture backing
4. Roof gutters can be made of asbestos cement
5. Artificial fireplace logs and ashes
6. Acoustic tiles
7. Deck under-sheeting
8. Asbestos pad under the fireplace hearth
9. Pipe insulation
10. Main panel and fuse box; each fuse wire has an individual asbestos flash guard
11. Door and gasket covers
12. Backing behind recessed lighting
13. Boiler and furnace insulation
14. Asbestos can be found in stucco
15. Soffit boards can be made of asbestos cement or asbestos insulating board
16. Textured or stipple-coated walls and ceilings
17. Asbestos cement (transite) board siding and undersheeting
18. Outlets and switches
19. Gypsum board filling compound, and patching and joint compound for walls and ceilings
20. Window putty
21. Flooring: vinyl tiles and linoleum sheet flooring; flooring adhesive
22. Downpipes can be made of asbestos cement
23. Insulation on electrical wires
24. Heat reflector for wood stove

Please note: This floor plan depicts a typical older home. Asbestos use has declined significantly; homes built before 1990 are more likely to contain asbestos products.