

**HAZARDOUS MATERIALS
REMOVAL SPECIFICATIONS
BEAVERLODGE RESEARCH CENTRE
PROJECT NO.: R.078150.002
BEAVERLODGE, ALBERTA**

Submitted to:

Public Works and Government Services Canada

26 JULY 2016

Section Number	Section Title	No. of Pages
00 01 01	Title Sheet	1
00 01 10	Table of Contents	1
01 11 00	Summary of Work	4
01 33 00	Submittal Procedures	2
01 35 29 06	Health and Safety Requirements	4
02 82 00 1	Asbestos Abatement – Minimum Precaution	6
02 82 00 2	Asbestos Abatement – Intermediate Precaution	9
02 82 00 3	Asbestos Abatement – Maximum Precaution	15
02 83 11	Lead Base Paint Abatement – Intermediate Precautions	9
02 84 00	Polychlorinate Biphenyl Remediation	3
02 85 00 02	Mould Remediation – Medium Precautions	7
02 90 00	Removal of Ozone Depleting Substances	5
02 95 00	Removal of Mercury	5
Annex A	Hazardous Materials List	
Annex B	Drawings	
Annex C	Hazardous Materials Investigation Lacombe, Beaverlodge and Fort Vermillion Research Centres. April 12, 2011	

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Not used.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- .1 Work of this Contract comprises hazardous materials abatement in three buildings located at the Beaverlodge Research Centre located near Beaverlodge Alberta.
 - .1 Soils Research Building (Building #14).
 - .2 Canola Laboratory (Building # 10).
 - .3 Storage Building (Building # 26).
- .2 Hazardous materials abatement will be completed at the following structures prior to demolition of the structures:
 - .1 Soils Research Centre Building (Building #14), two storeys building with an area of approximately 328 m².
 - .2 Canola Laboratory (Building #10), two storeys plus basement with an area of approximately 562 m².
- .3 The following structure will not be demolished and abatement of hazardous materials is required for the vermiculite in the attic, and other hazardous materials that are in poor condition or where it has been recommended that they be abated:
 - .1 Storage Building (Building #26), single storey with an area of approximately 985 m².
- .4 The materials to be abated are listed in Annex A with accompanying drawings found in Annex B.
- .5 Additional building information is presented in the hazardous materials investigation report provided in Annex C.
- .6 Departmental Representative – Within context of these specifications, the term Departmental Representative refers to the person exercising the roles and attributes of Canada under contract.

1.3 CONTRACT METHOD

- .1 Construct Work under lump sum contract.

1.4 WORK BY OTHERS

- .1 Not used.

1.5 FUTURE WORK

- .1 Not used.

1.6 WORK SEQUENCE

- .1 Construct Work in stages to accommodate use of premises during construction.
- .2 Co-ordinate Progress Schedule with and co-ordinate with Departmental Representative during construction.
- .3 Required stages:
 - .1 Abatement of Building # 14.
 - .2 Abatement of Building #10.
 - .3 Abatement of select materials from Building #26.
 - .4 Abatement to be completed in Buildings 10 and 14 first followed by Building 26.
- .4 Maintain fire access/control.

1.7 CONTRACTOR USE OF PREMISES

- .1 Unrestricted use of site buildings #10 and 14 until Substantial Performance.
- .2 Limited use of Building #26 for work, storage or access to allow:
 - .1 Partial owner occupancy.
- .3 Co-ordinate use of premises under direction of Departmental Representative.
- .4 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.
- .5 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.
- .6 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work.
- .7 At completion of operations condition of existing work: equal to or better than that which existed before new work started.

1.8 OWNER OCCUPANCY

- .1 Not used.

1.9 PARTIAL OWNER OCCUPANCY

- .1 Designated areas of Building 26 may be occupied during abatement. To be confirmed prior to start of work.

1.10 PRE-ORDERED PRODUCTS

- .1 Not used.

1.11 PRE-PURCHASED EQUIPMENT

- .1 Not used.

1.12 OWNER FURNISHED ITEMS

- .1 Not used.

1.13 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

- .1 Execute work with least possible interference or disturbance to building operations and normal use of premises. Arrange with Departmental Representative to facilitate execution of work.
- .2 Use only access points and equipment existing in buildings approved by Departmental Representative for moving workers and material.
- .3 Accept liability for damage, safety of equipment and overloading of existing equipment

1.14 EXISTING SERVICES

- .1 Existing services in buildings include:
 - .1 Building 10 – Power is available but no heat or water.
 - .2 Building 14 – Power is available but no heat or water.
 - .3 Building 26 – Power, heat and water are available.
- .2 Notify, Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .3 Where Work involves breaking into or connecting to existing services, give Departmental Representative 48 hours notice for necessary interruption of mechanical or electrical service throughout course of work. Minimize duration of interruptions. Carry out work at times as directed by governing authorities with minimum disturbance to tenant operations.
- .4 Provide alternative routes for personnel, pedestrian and vehicular traffic.
- .5 Establish location and extent of service lines in area of work before starting Work. Notify Departmental Representative of findings.
- .6 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.
- .7 Provide temporary services as necessary to maintain critical building and tenant systems.
- .8 Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.
- .9 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .10 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.
- .11 Record locations of maintained, re-routed and abandoned service lines.

1.15 DOCUMENTS REQUIRED

- .1 Maintain at job site, one copy each document as follows:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.

- .4 Reviewed Shop Drawings.
- .5 List of Outstanding Shop Drawings.
- .6 Change Orders.
- .7 Other Modifications to Contract.
- .8 Field Test Reports.
- .9 Copy of Approved Work Schedule.
- .10 Health and Safety Plan and Other Safety Related Documents.
- .11 Other documents as specified.

Part 2 Products

2.1 NOT USED

- .1 Not used.

Part 3 Execution

3.1 NOT USED

- .1 Not used.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 Not required.

1.2 ADMINISTRATIVE

- .1 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by submittal until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work are co-ordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .10 Keep one reviewed copy of each submission on site.

1.3 PHOTOGRAPHIC DOCUMENTATION

- .1 Submit electronic copy of colour digital photography in jpg format, standard resolution as directed by Departmental Representative.
- .2 Project identification: name and number of project and date of exposure indicated.
- .3 Number of viewpoints: 2 locations.
 - .1 Viewpoints and their location as determined by Departmental Representative.
- .4 Frequency of photographic documentation: as directed by Departmental Representative.
 - .1 Upon completion of: of Work, or as directed by Departmental Representative.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Not used.

1.2 REFERENCES

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2 Province of Alberta
 - .1 Occupational Health and Safety Act, R.S.A. - Updated 2013.
 - .2 Alberta Asbestos Abatement Manual. October 2012.
 - .3 Alberta Occupational Health and Safety Bulletin. Asbestos Containing Materials in Building to be Demolished. Revised October 2014
 - .4 Alberta Occupational Health and Safety Bulletin. Lead at The Work Site. November 2013.
 - .5 Alberta Best Practices - Mould at the Work Site. July 2009.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.
 - .2 Results of safety and health risk or hazard analysis for site tasks and operation.
- .3 Submit copies of Contractor's authorized representative's work site health and safety inspection reports to authority having jurisdiction and Departmental Representative.
- .4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors within 24 hours.
- .5 Submit copies of incident and accident reports within 24 hours.
- .6 Submit WHMIS MSDS - Material Safety Data Sheets prior to bring materials to work site.
- .7 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 7 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 3 days after receipt of comments from Departmental Representative.
- .8 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .9 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Departmental Representative.

- .10 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

1.4 FILING OF NOTICE

- .1 File Notice of Project with Provincial authorities prior to beginning of Work.
- .2 Work zone locations include:
 - .1 Soils Research Centre Building (Building #14).
 - .2 Canola Laboratory (Building #10).
 - .3 Storage Building (Building #26).
- .3 Contractor shall agree to install proper site separation and identification in order to maintain time and space at all times throughout life of project.

1.5 SAFETY ASSESSMENT

- .1 Perform site specific safety hazard assessment related to project.

1.6 MEETINGS

- .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.

1.7 REGULATORY REQUIREMENTS

- .1 Do Work in accordance with all applicable regulatory requirements.

1.8 PROJECT/SITE CONDITIONS

- .1 Work at site will involve contact with:
 - .1 Asbestos.
 - .2 Ozone Depleting Substances.
 - .3 Lead and Lead Containing Paint.
 - .4 Mould.
 - .5 Polychlorinated Biphenyls.
 - .6 Ozone Depleting Substances.
 - .7 Mercury.
 - .8 Suspect Visual Mould Growth.

1.9 GENERAL REQUIREMENTS

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.10 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.11 COMPLIANCE REQUIREMENTS

- .1 Comply with Occupational Health and Safety Act, General Safety Regulation, Alberta Reg. 2013.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

1.12 UNFORSEEN HAZARDS

- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Alberta having jurisdiction and advise Departmental Representative verbally and in writing.

1.13 HEALTH AND SAFETY CO-ORDINATOR

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator. Health and Safety Co-ordinator must:
 - .1 Have site-related working experience specific to activities associated with work.
 - .2 Have working knowledge of occupational safety and health regulations.
 - .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
 - .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
 - .5 Be on site during execution of Work and report directly to and be under direction of site supervisor.

1.14 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Alberta having jurisdiction, and in consultation with Departmental Representative.

1.15 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.

- .3 Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.

1.16 BLASTING

- .1 Blasting or other use of explosives is not permitted.

1.17 POWDER ACTUATED DEVICES

- .1 Use powder actuated devices only after receipt of written permission from Departmental Representative.

1.18 WORK STOPPAGE

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

Part 2 Products

2.1 NOT USED

- .1 Not used.

Part 3 Execution

3.1 NOT USED

- .1 Not used.

END OF SECTION

Part 1 General

1.1 SUMMARY

- .1 Comply with requirements of this Section when performing following work:
 - .1 Removing non-friable asbestos-containing materials, other than ceiling tiles, if the material is installed or removed without being broken, cut, drilled, abraded, ground, sanded or vibrated at locations indicated Annex A and B.
 - .2 Break, cut, grind, sand, drill, scrape, vibrate or abrade non-friable asbestos containing materials using non-powered hand-held tools, and the material is wetted to control the spread of dust or fibres.
 - .3 Asbestos Abatement Minimum Precautions meets the definition for Asbestos Abatement Low Risk per Alberta requirements.

1.2 RELATED REQUIREMENTS

- .1 Not used.

1.3 REFERENCE STANDARDS

- .1 Department of Justice Canada (Jus)
 - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .2 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .3 Province of Alberta.
 - .1 Occupational Health and Safety Code. 2009.
 - .2 Alberta Asbestos Abatement Manual. October 2012.
 - .3 Alberta Occupational Health and Safety Bulletin. Asbestos Containing Materials in Building to be Demolished. Revised October 2014
 - .4 Alberta Occupational Health and Safety Bulletin. Lead at The Work Site. November 2013.
 - .5 Guideline for Disposal of Asbestos Waste.

1.4 DEFINITIONS

- .1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .2 Amended Water: water with non-ionic surfactant wetting agent added to reduce water tension to allow thorough wetting of fibres.
- .3 Asbestos-Containing Materials (ACMs): materials that contain asbestos and are identified under Existing Conditions including fallen materials and settled dust.
- .4 Asbestos Work Area: area where work takes place which will, or may, disturb ACMs.

- .5 Authorized Visitors: Engineers, Consultants or designated representatives, and representatives of regulatory agencies.
- .6 Competent person: in relation to specific work, means a worker who:
 - .1 Is qualified because of knowledge, training and experience to perform the work.
 - .2 Is familiar with the provincial and federal laws and with the provisions of the regulations that apply to the work.
 - .3 Has knowledge of all potential or actual danger to health or safety in the work.
- .7 Friable material: means material that:
 - .1 When dry, can be crumbled, pulverized or powdered by hand pressure, or
 - .2 is crumbled, pulverized or powdered.
- .8 Non-Friable Material: material that when dry cannot be crumbled, pulverized or powdered by hand pressure.
- .9 Occupied Area: any area of the building or work site that is outside Asbestos Work Area.
- .10 Polyethylene: polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide protection and isolation.
- .11 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have appropriate capacity for work.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit proof satisfactory to Departmental Representative that suitable arrangements have been made to dispose of asbestos-containing waste in accordance with requirements of authority having jurisdiction.
- .3 Submit Provincial/Territorial and/or local requirements for Notice of Project Form.
- .4 Submit to Departmental Representative necessary permits for transportation and disposal of asbestos-containing waste and proof that asbestos-containing waste has been received and properly disposed.
- .5 Submit proof that all asbestos workers and/or supervisor have received appropriate training and education by a competent person in the hazards of asbestos exposure, good personal hygiene and work practices while working in Asbestos Work Areas, and the use, cleaning and disposal of respirators and protective clothing.
- .6 Submit proof satisfactory to Departmental Representative that employees have respirator fitting and testing. Workers must be fit tested (irritant smoke test) with respirator that is personally issued.

1.6 QUALITY ASSURANCE

- .1 Regulatory Requirements: comply with Federal, Provincial/Territorial, and local requirements pertaining to asbestos, provided that in case of conflict among these requirements or with these specifications, more stringent requirement applies. Comply with regulations in effect at time Work is performed.

- .2 Health and Safety:
 - .1 SPEC NOTE: Use the following paragraph for PSPC projects. Perform construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
 - .2 Safety Requirements: worker protection.
 - .1 Protective equipment and clothing to be worn by workers while in Asbestos Work Area include:
 - .1 Air purifying half-mask respirator with N-100, R-100 or P-100 particulate filter, personally issued to worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to Provincial Authority having jurisdiction. The respirator to be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet. The respirator to be cleaned, disinfected and inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker. The respirator to have damaged or deteriorated parts replaced prior to being used by a worker; and, when not in use, to be stored in a convenient, clean and sanitary location. The employer to establish written procedures regarding the selection, use and care of respirators, and a copy of the procedures to be provided to and reviewed with each worker who is required to wear a respirator. A worker not to be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator.
 - .2 Disposable-type protective clothing that does not readily retain or permit penetration of asbestos fibres. Protective clothing to be provided by the employer and worn by every worker who enters the work area, and the protective clothing shall consist of a head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing to include suitable footwear, and to be repaired or replaced if torn.
 - .2 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.
 - .3 Before leaving Asbestos Work Area, the worker can decontaminate his or her protective clothing by using a vacuum equipped with a HEPA filter, or by damp wiping, before removing the protective clothing, or, if the protective clothing will not be reused, place it in a container for dust and waste. The container to be dust tight, suitable for asbestos waste, impervious to asbestos, identified as asbestos waste, cleaned with a damp cloth or a vacuum equipped with a HEPA filter immediately before removal from the work area, and removed from the work area frequently and at regular intervals.
 - .4 Facilities for washing hands and face shall be provided within or close to the Asbestos Work Area.

- .5 Ensure workers wash hands and face when leaving Asbestos Work Area. Facilities for washing are located as indicated on drawings.
- .6 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for recycling or reuse as required.
- .2 Remove from site and dispose of packaging materials at appropriate facilities.
- .3 Place materials defined as hazardous or toxic in designated containers.
- .4 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
- .5 Fold up metal banding, flatten and place in designated area for recycling.
- .6 Disposal of asbestos waste generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Dispose of asbestos waste in sealed double thickness 6 mils bags or leak proof drums. Label containers with appropriate warning labels.
- .7 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

1.8 EXISTING CONDITIONS

- .1 Reports and information pertaining to ACMs to be handled, removed, or otherwise disturbed and disposed of during this project are appended to this specification.
- .2 Notify Departmental Representative of friable material discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material pending instructions from Departmental Representative.

1.9 SCHEDULING

- .1 Hours of Work: The asbestos abatement will commence at a date confirmed by the Departmental Representative.
- .2 Allow sufficient time for inspection of the site by Departmental Representative after site preparations and barriers are completed and before asbestos abatement work commences. **The Asbestos Abatement Contractor shall provide a minimum of 24 hours notification for all pre-contamination and final visual inspection requests** to the Departmental Representative.

1.10 PERSONNEL TRAINING

- .1 Before beginning Work, provide the authority having jurisdiction and the Departmental Representative satisfactory proof that every worker has had instruction and training in hazards of asbestos exposure, in personal hygiene and work practices, and in use, cleaning, and disposal of respirators and protective clothing.
- .2 Instruction and training related to respirators includes, following minimum requirements:
 - .1 Fitting of equipment.

- .2 Inspection and maintenance of equipment.
- .3 Disinfecting of equipment.
- .4 Limitations of equipment.
- .3 Instruction and training must be provided by a competent, qualified person.

Part 2 Products

2.1 MATERIALS

- .1 Drop Sheets:
 - .1 Polyethylene: 0.15 mm thick.
 - .2 FR polyethylene: 0.15 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.
- .2 Wetting Agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with water in a concentration to provide thorough wetting of asbestos-containing material.
- .3 Waste Containers: contain waste in two separate containers.
 - .1 Inner container: 0.15 mm thick sealable polyethylene waste bag.
 - .2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.
 - .3 Labelling requirements: affix pre-printed cautionary asbestos warning in both official languages that is visible when ready for removal to disposal site.
- .4 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual asbestos fibres.
- .5 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under both dry conditions and wet conditions using amended water.

Part 3 Execution

3.1 PROCEDURES

- .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .2 Before beginning Work, isolate Asbestos Work Area using, minimum, preprinted cautionary asbestos warning signs in both official languages that are visible at access routes to Asbestos Work Area.
 - .1 Remove visible dust from surfaces in the work area where dust is likely to be disturbed during course of work.
 - .2 Use HEPA vacuum or damp cloths where damp cleaning does not create a hazard and is otherwise appropriate.
 - .3 Do not use compressed air to clean up or remove dust from any surface.

- .3 Prevent spread of dust from Asbestos Work Area using measures appropriate to work to be done.
 - .1 Use FR polyethylene drop sheets over flooring such as carpeting that absorbs dust and over flooring in Asbestos Work Area where dust and contamination cannot otherwise be safely contained. Drop sheets are not to be reused.
- .4 Wet materials containing asbestos to be cut, ground, abraded, scraped, drilled, or otherwise disturbed unless wetting creates hazard or causes damage.
 - .1 Use garden reservoir type low - velocity fine - mist sprayer.
 - .2 Perform Work to reduce dust creation to lowest levels practicable.
 - .3 Work will be subject to visual inspection and air monitoring.
 - .4 Contamination of surrounding areas indicated by visual inspection or air monitoring will require complete enclosure and clean-up of affected areas.
- .5 Frequently and at regular intervals during Work and immediately on completion of work:
 - .1 Dust and waste to be cleaned up and removed using a vacuum equipped with a HEPA filter, or by damp mopping or wet sweeping, and placed in a waste container, and
 - .2 Drop sheets to be wetted and placed in a waste container as soon as practicable.
- .6 Cleanup:
 - .1 Place dust and asbestos containing waste in sealed dust-tight waste bags. Treat drop sheets and disposable protective clothing as asbestos waste; wet and fold these items to contain dust, and then place in plastic bags.
 - .2 Clean exterior of each waste-filled bag using damp cloths or HEPA vacuum and place in second clean waste bag immediately prior to removal from Asbestos Work Area.
 - .3 Seal waste bags and remove from site. Dispose of in accordance with requirements of Provincial/Territorial and Federal Authority having jurisdiction. Supervise dumping and ensure that dump operator is fully aware of hazardous nature of material to be dumped and that the appropriate guidelines and regulations for asbestos disposal are followed.
 - .4 Perform final thorough clean-up of Work areas and adjacent areas affected by Work using HEPA vacuum.

END OF SECTION

Part 1 General

1.1 SUMMARY

- .1 Comply with requirements of this Section when performing following Work:
 - .1 Removing all or part of a false ceiling to obtain access to a work area, if asbestos containing material is likely lying on the surface of the false ceiling.
 - .2 Removing of 9.3 square metres or less of contiguous asbestos containing suspended ceiling tiles, as indicated.
 - .3 Removal of asbestos containing material from piping.
 - .4 Removal or disturbance of less than 0.09 square metre or less of friable asbestos containing material during the repair, alteration, maintenance or demolition of all or part of machinery or equipment, or of a building.
 - .5 Enclosure of friable asbestos containing material.
 - .6 Application of tape or sealant or other covering to insulation containing asbestos.
 - .7 Removing non-friable asbestos containing materials by breaking, cutting, drilling, abrading, grounding, sanding or vibrating if:
 - .1 The material is not wetted to control the spread of dust or fibres, and
 - .2 The work is done only by means of non-powered hand-held tools.
 - .8 Removing non-friable asbestos containing materials by breaking, cutting, drilling, abrading, grounding, sanding or vibrating if the work is done by means of power tools that are attached to dust-collecting devices equipped with HEPA filters.
 - .9 Hand demolition or removal of drywall in which joint-filling compounds that are asbestos containing materials have been used.
 - .10 Removing of asbestos containing material from a pipe, duct or similar structure using a glove bag.
 - .11 Removing or cleaning filters used in an air handling unit in a building that has sprayed-on asbestos containing fireproofing.
 - .12 Asbestos Abatement Intermediate Precautions meets the definition for Asbestos Abatement Moderate Risk per Alberta requirements.

1.2 RELATED REQUIREMENTS

- .1 Not used.

1.3 REFERENCE STANDARDS

- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.205-94, Sealer for Application of Asbestos Fibre Releasing Materials.
- .2 Department of Justice Canada (Jus)
 - .1 Canadian Environmental Protection Act, 1999 (CEPA).

- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .4 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .5 Underwriters' Laboratories of Canada (ULC)
- .6 Province of Alberta.
 - .1 Occupational Health and Safety Code. 2009.
 - .2 Alberta Asbestos Abatement Manual. October 2012.
 - .3 Alberta Occupational Health and Safety Bulletin. Asbestos Containing Materials in Building to be Demolished. Revised October 2014
 - .4 Guideline for Disposal of Asbestos Waste.

1.4 DEFINITIONS

- .1 Amended Water: water with non-ionic surfactant wetting agent added to reduce water tension to allow wetting of fibres.
- .2 Asbestos Containing Materials (ACMs): materials that contain asbestos and are identified under Existing Conditions including fallen materials and settled dust.
- .3 Asbestos Work Area: area where work takes place which will, or may disturb ACMs.
- .4 Authorized Visitors: Engineers, or designated representatives, and representatives of regulatory agencies.
- .5 Competent person: in relation to specific work, means a worker who:
 - .1 Is qualified because of knowledge, training and experience to perform the work.
 - .2 Is familiar with the provincial and federal laws and with the provisions of the regulations that apply to the work.
 - .3 Has knowledge of all potential or actual danger to health or safety in the work.
- .6 Friable Materials: material that when dry can be crumbled, pulverized or powdered by hand pressure and includes such material that is crumbled, pulverized or powdered.
- .7 Glove Bag: prefabricated glove bag as follows:
 - .1 Minimum thickness 0.25 mm (10 mil) polyvinyl-chloride bag.
 - .2 Integral 0.25 mm (10 mil) thick polyvinyl-chloride gloves and elastic ports.
 - .3 Equipped with reversible double pull double throw zipper on top and at approximately mid-section of the bag.
 - .4 Straps for sealing ends around pipe.
- .8 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any dimension at 99.97% efficiency.
- .9 Non-Friable Material: material that when dry cannot be crumbled, pulverized or powdered by hand pressure.

- .10 Occupied Area: any area of building or work site that is outside Asbestos Work Area.
- .11 Polyethylene: polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide protection and isolation.
- .12 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have appropriate capacity for scope of work.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit proof satisfactory to Departmental Representative that suitable arrangements have been made to dispose of asbestos containing waste in accordance with requirements of authority having jurisdiction.
- .3 Submit Provincial/Territorial and/or local requirements for Notice of Project Form.
- .4 Submit to Departmental Representative necessary permits for transportation and disposal of asbestos containing waste and proof that asbestos containing waste has been received and properly disposed.
- .5 Submit proof satisfactory to Departmental Representative that all asbestos workers have received appropriate training and education by a competent person in the hazards of asbestos exposure, good personal hygiene, entry and exit from Asbestos Work Area, aspects of work procedures and protective measures while working in Asbestos Work Areas, and the use, cleaning and disposal of respirators and protective clothing.
- .6 Submit proof that supervisory personnel have attended asbestos abatement course, of not less than two days duration, approved by Departmental Representative. Minimum of one supervisor for every ten workers.
- .7 Submit documentation including test results, fire and flammability data, and Material Safety Data Sheets (MSDS) for chemicals or materials including:
 - .1 Encapsulants;
 - .2 Amended water;
 - .3 Slow drying sealer.
- .8 Submit proof satisfactory to Departmental Representative that employees have respirator fitting and testing. Workers must be fit tested (irritant smoke test) with respirator that is personally issued.

1.6 QUALITY ASSURANCE

- .1 Regulatory Requirements: comply with Federal, Provincial/Territorial and local requirements pertaining to asbestos, provided that in case of conflict among these requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at the time work is performed.
- .2 Health and Safety:
 - .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

- .2 Safety Requirements: worker and visitor protection.
 - .1 Protective equipment and clothing to be worn by workers while in Asbestos Work Area include:
 - .1 Air purifying half-mask respirator with N-100, R-100 or P-100 particulate filter, personally issued to worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to Provincial Authority having jurisdiction. The respirator to be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet. The respirator to be cleaned, disinfected and inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker. The respirator to have damaged or deteriorated parts replaced prior to being used by a worker; and, when not in use, to be stored in a convenient, clean and sanitary location. The employer to establish written procedures regarding the selection, use and care of respirators, and a copy of the procedures to be provided to and reviewed with each worker who is required to wear a respirator. A worker not to be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator.
 - .2 Disposable type protective clothing that does not readily retain or permit penetration of asbestos fibres. Protective clothing to be provided by the employer and worn by every worker who enters the work area, and the protective clothing to consist of a head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing. It includes suitable footwear, and it to be repaired or replaced if torn.
 - .3 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.
 - .4 Before leaving Asbestos Work Area, the worker can decontaminate his or her protective clothing by using a vacuum equipped with a HEPA filter, or by damp wiping, before removing the protective clothing, or, if the protective clothing will not be reused, place it in a container for dust and waste. The container to be dust tight, suitable for asbestos waste, impervious to asbestos, identified as asbestos waste, cleaned with a damp cloth or a vacuum equipped with a HEPA filter immediately before removal from the work area, and removed from the work area frequently and at regular intervals.
 - .5 Ensure workers wash hands and face when leaving Asbestos Work Area. Facilities for washing are located within or close to the asbestos work area.
 - .6 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.
 - .7 Visitor Protection:

- .1 Provide protective clothing and approved respirators to Authorized Visitors to work areas.
- .2 Instruct Authorized Visitors in the use of protective clothing, respirators and procedures.
- .3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Asbestos Work Area.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse or recycling as required.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Place materials defined as hazardous or toxic in designated containers.
- .4 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
- .5 Fold up metal banding, flatten and place in designated area for recycling.
- .6 Disposal of asbestos waste generated by removal activities must comply with Federal, Provincial/Territorial and Municipal regulations. Dispose of asbestos waste in sealed double thickness 6 mils bags or leak proof drums. Label containers with appropriate warning labels.
- .7 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

1.8 EXISTING CONDITIONS

- .1 Reports and information pertaining to ACMS to be handled, removed, or otherwise disturbed and disposed of during this Project are appended to this specification.
- .2 Notify Departmental Representative of friable material discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by Departmental Representative.

1.9 SCHEDULING

- .1 Hours of Work: The asbestos abatement will commence at a date confirmed by the Departmental Representative.
- .2 Allow sufficient time for inspection of the site by Departmental Representative after site preparations and barriers are completed and before asbestos abatement work commences. **The Asbestos Abatement Contractor shall provide a minimum of 24 hours notification for all pre-contamination and final visual inspection requests** to the Departmental Representative.

1.10 PERSONNEL TRAINING

- .1 Before beginning Work, provide Departmental Representative satisfactory proof that every worker has had instruction and training in hazards of asbestos exposure, in personal hygiene and work practices, in use of glove bag procedures, and in use, cleaning, and disposal of respirators and protective clothing.

- .2 Instruction and training related to respirators includes, at minimum:
 - .1 Fitting of equipment.
 - .2 Inspection and maintenance of equipment.
 - .3 Disinfecting of equipment.
 - .4 Limitations of equipment.
- .3 Instruction and training must be provided by competent, qualified person.

Part 2 Products

2.1 MATERIALS

- .1 Drop and Enclosure Sheets:
 - .1 Polyethylene: 0.15 mm thick.
 - .2 FR polyethylene: 0.15 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.
- .2 Wetting Agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with water in concentration to provide thorough wetting of asbestos containing material.
- .3 Waste Containers: contain waste in two separate containers.
 - .1 Inner container: 0.15 mm thick sealable polyethylene bag or where glove bag method is used, glove bag itself.
 - .2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.
 - .3 Labelling requirements: affix preprinted cautionary asbestos warning, in both official languages, that is visible when ready for removal to disposal site.
- .4 Glove bag:
 - .1 The glove bag to be equipped with:
 - .1 Sleeves and gloves that are permanently sealed to the body of the bag to allow the worker to access and deal with the insulation and maintain a sealed enclosure throughout the work period.
 - .2 Valves or openings to allow insertion of a vacuum hose and the nozzle of a water sprayer while maintaining the seal to the pipe, duct or similar structure.
 - .3 A tool pouch with a drain.
 - .4 A seamless bottom and a means of sealing off the lower portion of the bag.
 - .5 A high strength double throw zipper and removable straps, if the bag is to be moved during the removal operation.
- .5 Tape: tape suitable for sealing polyethylene to surfaces under both dry and wet conditions using amended water.

- .6 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual asbestos fibres.
 - .1 Sealer: flame spread and smoke developed rating less than 50 and be compatible with new fireproofing.
- .7 Encapsulant: surface film forming type conforming to CAN/CGSB-1.205.

Part 3 Execution

3.1 SUPERVISION

- .1 Minimum of one Supervisor for every ten workers is required.
- .2 Approved Supervisor must remain within Asbestos Work Area during disturbance, removal, or other handling of asbestos-containing materials.

3.2 PROCEDURES

- .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .2 Before beginning Work, at each access to Asbestos Work Area, install warning signs in both official languages in upper case 'Helvetica Medium' letters reading as follows, where number in parentheses indicates font size to be used: 'CAUTION ASBESTOS HAZARD AREA (25 mm) / NO UNAUTHORIZED ENTRY (19 mm) / WEAR ASSIGNED PROTECTIVE EQUIPMENT (19 mm) / BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM (7 mm)'.
 - .3 Before beginning Work remove visible dust from surfaces in work area where dust is likely to be disturbed during course of work.
 - .1 Use HEPA vacuum or damp cloths where damp cleaning does not create hazard and is otherwise appropriate.
 - .2 Do not use compressed air to clean up or remove dust from any surface.
 - .4 Prevent spread of dust from Asbestos Work Area using measures appropriate to work to be done.
 - .1 Use FR polyethylene drop sheets over flooring such as carpeting that absorbs dust and over flooring in work areas where dust or contamination cannot otherwise be safely contained.
 - .2 When removing asbestos containing material from piping or equipment and "glove bag" method is not used, where ceilings and walls themselves do not enclose work area, erect enclosure of polyethylene sheeting around work area, shut off mechanical ventilation system serving work area and seal ventilation ducts to and from work area.
- .5 Remove loose material by HEPA vacuum; thoroughly wet friable material containing asbestos to be removed or disturbed before and during Work unless wetting creates hazard or causes damage.

- .1 Use garden reservoir type low - velocity sprayer or airless spray equipment capable of producing mist or fine spray.
- .2 Perform Work in a manner to reduce dust creation to lowest levels practicable.
- .6 Pipe Insulation Removal Using Glove Bag:
 - .1 A glove bag not to be used to remove insulation from a pipe, duct or similar structure if:
 - .1 It may not be possible to maintain a proper seal for any reason including, without limitation:
 - .1 The condition of the insulation.
 - .2 The temperature of the pipe, duct or similar structure.
 - .2 The bag could become damaged for any reason including, without limitation.
 - .1 The type of jacketing.
 - .2 The temperature of the pipe, duct or similar structure.
 - .2 Upon installation of the glove bag, inspect bag for any damage or defects. If any damage or defects are found, the glove bag is to be repaired or replaced. The glove bag to be inspected at regular intervals for damage and defects, and repair or replaced, as appropriately. The asbestos containing contents of the damaged or defective glove bag found during removal are to be wetted and the glove bag and its contents are to be removed and disposed of in an appropriate waste disposal container. Any damaged or defective glove bags are not be reused.
 - .3 Place tools necessary to remove insulation in tool pouch. Wrap bag around pipe and close zippers. Seal bag to pipe with cloth straps.
 - .4 Place hands in gloves and use necessary tools to remove insulation. Arrange insulation in bag to obtain full capacity of bag.
 - .5 Insert nozzle of garden reservoir type sprayer into bag through valve and wash down pipe and interior of bag thoroughly. Wet surface of insulation in lower section of bag.
 - .6 To remove bag after completion of stripping, wash top section and tools thoroughly. Remove air from top section through elasticized valve using a HEPA vacuum. Pull polyethylene waste container over glove bag before removing from pipe. Release one strap and remove freshly washed tools. Place tools in water. Remove second strap and zipper. Fold over into waste container and seal.
 - .7 After removal of bag ensure that pipe is free of residue. Remove residue using HEPA vacuum or wet cloths. Ensure that surfaces are free of sludge which after drying could release asbestos dust into atmosphere. Seal exposed surfaces of pipe and ends of insulation with slow drying sealer to seal in any residual fibres.
 - .8 Upon completion of Work shift, cover exposed ends of remaining pipe insulation with polyethylene taped in place.
- .7 Work is subject to visual inspection and air monitoring. Contamination of surrounding areas indicated by visual inspection or air monitoring will require complete enclosure and clean-up of affected areas.
- .8 Cleanup:

- .1 Frequently during Work and immediately after completion of work, clean up dust and asbestos containing waste using HEPA vacuum or by damp mopping.
- .2 Place dust and asbestos containing waste in sealed dust tight waste bags. Treat drop sheets and disposable protective clothing as asbestos waste and wet and fold to contain dust and then place in waste bags.
- .3 Immediately before their removal from Asbestos Work Area and disposal, clean each filled waste bag using damp cloths or HEPA vacuum and place in second clean waste bag.
- .4 Seal and remove double bagged waste from site. Dispose of in accordance with requirements of Provincial/Territorial and Federal authority having jurisdiction. Supervise dumping and ensure that dump operator is fully aware of hazardous nature of material to be dumped and that guidelines and regulations for asbestos disposal are followed.
- .5 Perform final thorough clean-up of Asbestos Work Areas and adjacent areas affected by Work using HEPA vacuum.

3.3 AIR MONITORING

- .1 From beginning of Work until completion of cleaning operations, Departmental Representative to take air samples on daily basis outside of Asbestos Work Area enclosures in accordance with Provincial/Territorial Occupational Health and Safety Regulations.
 - .1 Contractor will be responsible for monitoring inside enclosure in accordance with applicable Provincial/Territorial Occupational Health and Safety Regulations.
- .2 If air monitoring shows that areas outside Asbestos Work Area enclosures are contaminated, enclose, maintain and clean these areas in same manner as that applicable to Asbestos Work Area.
- .3 Ensure that respiratory safety factors are not exceeded.

END OF SECTION

Part 1 General

1.1 SUMMARY

- .1 Comply with requirements of this Section when performing following Work:
 - .1 Removal or disturbance as specified of more than 0.09 square metre of friable asbestos containing material during the repair, alteration, maintenance or demolition of a building or any machinery or equipment located at site.
 - .2 The spray application of a sealant to friable asbestos containing material.
 - .3 Cleaning or removing air handling equipment, including rigid ducting but not including filters, in a building that has asbestos containing sprayed fireproofing.
 - .4 Repairing, altering or demolishing all or part of a kiln, metallurgical furnace or similar structure that is made in part of refractory materials that are asbestos containing materials.
 - .5 Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos containing material, if the work is done by means of power tools that are not attached to dust-collecting devices equipped with HEPA filters.
 - .6 Repairing, altering or demolishing all or part of any building in which asbestos is or was used in the manufacture of products.
 - .7 Asbestos Abatement Maximum Precautions meets the definition for Asbestos Abatement High Risk per Alberta requirements.

1.2 RELATED REQUIREMENTS

- .1 Not used.

1.3 REFERENCE STANDARDS

- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.205-94, Sealer for Application to Asbestos-Fibre-Releasing Materials.
- .2 Canadian Standards Association (CSA International)
- .3 Department of Justice Canada
 - .1 Canadian Environmental Protection Act (CEPA), 1999.
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .5 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .6 Underwriters' Laboratories of Canada (ULC)
- .7 U.S. Department of Health and Human Services/Centers for Disease Control and Prevention (CDC)/National Institute for Occupational Safety and Health (NIOSH)

- .1 NIOSH 94-113-August 1994, NIOSH Manual of Analytical Methods (NMAM), 4th Edition.
- .8 U.S. Department of Labour - Occupational Safety and Health Administration - Toxic and Hazardous Substances
 - .1 29 CFR 1910.1001-2001, Asbestos Regulations.
- .9 Province of Alberta.
 - .1 Occupational Health and Safety Code. 2009.
 - .2 Alberta Asbestos Abatement Manual. October 2012.
 - .3 Alberta Occupational Health and Safety Bulletin. Asbestos Containing Materials in Building to be Demolished. Revised October 2014
 - .4 Guideline for Disposal of Asbestos Waste.

1.4 DEFINITIONS

- .1 Airlock: system for permitting ingress or egress without permitting air movement between contaminated area and uncontaminated area, typically consisting of two curtained doorways at least 2 m apart.
- .2 Amended Water: water with a non-ionic surfactant wetting agent added to reduce water tension to allow wetting of fibres.
- .3 Asbestos Containing Materials (ACMs): materials that contain asbestos and are identified under Existing Conditions including fallen materials and settled dust.
- .4 Asbestos Work Areas: area where work takes place which will, or may disturb ACMs.
- .5 Authorized Visitors: Departmental Representatives, or designated representatives, and representatives of regulatory agencies.
- .6 Competent person: in relation to specific work, means a worker who:
 - .1 Is qualified because of knowledge, training and experience to perform the work.
 - .2 Is familiar with the federal and provincial laws and with the provisions of the regulations that apply to the work.
 - .3 Has knowledge of all potential or actual danger to health or safety in the work.
- .7 Curtained doorway: arrangement of closures to allow ingress and egress from one room to another while permitting minimal air movement between rooms, typically constructed as follows:
 - .1 Place two overlapping sheets of polyethylene over existing or temporarily framed doorway, secure each along top of doorway, secure vertical edge of one sheet along one vertical side of doorway, and secure vertical edge of other sheet along opposite vertical side of doorway.
 - .2 Reinforce free edges of polyethylene with duct tape and weight bottom edge to ensure proper closing.
 - .3 Overlap each polyethylene sheet at openings not less than 1.5 m on each side.
- .8 PAO Test: testing method used to determine integrity of Negative Pressure unit using polyalphaolefin (PAO) HEPA-filter leak test.

- .9 Friable Materials: material that when dry can be crumbled, pulverized or powdered by hand pressure and includes such material that is crumbled, pulverized or powdered.
- .10 Glove Bag: prefabricated glove bag as follows:
 - .1 Minimum thickness 0.25 mm (10 mil) polyvinyl-chloride bag.
 - .2 Integral 0.25 mm (10 mil) thick polyvinyl-chloride gloves and elastic ports.
 - .3 Equipped with reversible double pull double throw zipper on top and at approximately mid-section of the bag.
 - .4 Straps for sealing ends around pipe.
- .11 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with a filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .12 Negative pressure: system that extracts air directly from work area, filters such extracted air through High Efficiency Particulate Air filtering system, and discharges this air directly outside work area to exterior of building.
 - .1 System to maintain minimum pressure differential of 5 Pa relative to adjacent areas outside of work areas, be equipped with alarm to warn of system breakdown, and be equipped with instrument to continuously monitor and automatically record pressure differences.
- .13 Non-Friable Materials: material that when dry cannot be crumbled, pulverized or powdered by hand pressure.
- .14 Occupied Areas: any area of building or work site that is outside Asbestos Work Area.
- .15 Polyethylene sheeting sealed with tape: polyethylene sheeting of type and thickness specified sealed with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide continuous polyethylene membrane to protect underlying surfaces from water damage or damage by sealants, and to prevent escape of asbestos fibres through sheeting into clean area.
- .16 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must be appropriate capacity for scope of work.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Before beginning work:
 - .1 Obtain from appropriate agency and submit to Departmental Representative necessary permits for transportation and disposal of asbestos waste. Ensure that dump operator is fully aware of hazardous nature of material being dumped, and proper methods of disposal. Submit proof satisfactory to Departmental Representative that suitable arrangements have been made to receive and properly dispose of asbestos waste.
 - .2 Submit proof satisfactory to Departmental Representative that all asbestos workers have received appropriate training and education by a competent person on hazards of asbestos exposure, good personal hygiene, entry and exit from Asbestos Work Area, aspects of work procedures and protective measures while working in Asbestos Work Areas, and the use, cleaning and disposal of

- respirators and protective clothing. Submit proof of attendance in form of certificate.
- .3 Ensure supervisory personnel have attended asbestos abatement course, of not less than two days duration, approved by Departmental Representative. Submit proof of attendance in form of certificate. Minimum of one Supervisor for every ten workers.
 - .4 Submit layout of proposed enclosures and decontamination facilities to Departmental Representative for review.
 - .5 Submit documentation including test results for sealer proposed for use.
 - .6 Submit Provincial/Territorial and/or local requirements for Notice of Project form.
 - .7 Submit proof satisfactory to Departmental Representative that employees have respirator fitting and testing. Workers must be fit tested (irritant smoke test) with respirator that is personally issued.
 - .8 Submit documentation including test results, fire and flammability data, and Material Safety Data Sheets (MSDS) for chemicals or materials including but not limited to following:
 - .1 Encapsulants.
 - .2 Amended water.
 - .3 Slow drying sealer.

1.6 QUALITY ASSURANCE

- .1 Regulatory Requirements: comply with Federal, Provincial/Territorial and local requirements pertaining to asbestos, provided that in case of conflict among those requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at time work is performed.
- .2 Health and Safety:
 - .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
 - .2 Safety Requirements: worker and visitor protection.
 - .1 Protective equipment and clothing to be worn by workers while in Asbestos Work Area includes:
 - .1 Powered air purifying respirator (PAPR) with N-100, R-100 or P-100 particulate filter, personally issued to worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to Provincial Authority having jurisdiction. The respirator to be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet. The respirator to be cleaned, disinfected and inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker. The respirator to have damaged or deteriorated parts replaced prior to being used by a worker; and, when not in use, to be stored in a convenient, clean and sanitary location. The

employer to establish written procedures regarding the selection, use and care of respirators, and a copy of the procedures to be provided to and reviewed with each worker who is required to wear a respirator. A worker not to be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator.

- .2 Disposable type protective clothing that does not readily retain or permit penetration of asbestos fibres. Protective clothing to be provided by the employer and worn by every worker who enters the work area, and the protective clothing to consist of a head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing. It includes suitable footwear, and it to be repaired or replaced if torn.
Requirements for each worker:

- .1 Remove street clothes in clean change room and put on respirator with new filters or reusable filters that have been tested as satisfactory, clean coveralls and head covers before entering Equipment and Access Rooms or Asbestos Work Area. Store street clothes, uncontaminated footwear, towels, and similar uncontaminated articles in clean change room.
- .2 Remove gross contamination from clothing before leaving work area then proceed to Equipment and Access Room and remove clothing except respirators. Place contaminated work suits in receptacles for disposal with other asbestos - contaminated materials. Leave reusable items except respirator in Equipment and Access Room. Still wearing the respirator proceed naked to showers. Using soap and water wash body and hair thoroughly. Clean outside of respirator with soap and water while showering; remove respirator; remove filters and wet them and dispose of filters in container provided for purpose; and wash and rinse inside of respirator. When not in use in work area, store work footwear in Equipment and Access Room. Upon completion of asbestos abatement, dispose of footwear as contaminated waste or clean thoroughly inside and out using soap and water before removing from work area or from Equipment and Access Room.
- .3 After showering and drying off, proceed to clean change room and dress in street clothes at end of each day's work, or in clean coveralls before eating, smoking, or drinking. If re-entering work area, follow procedures outlined in paragraphs above.
- .4 Enter unloading room from outside dressed in clean coveralls to remove waste containers and equipment from Holding Room of Container and Equipment

Decontamination Enclosure system. Workers must not use this system as means to leave or enter work area.

- .2 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.
- .3 Ensure workers are fully protected with respirators and protective clothing during preparation of system of enclosures prior to commencing actual asbestos abatement.
- .4 Provide and post in Clean Change Room and in Equipment and Access Room the procedures described in this Section, in both official languages.
- .5 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.
- .6 Visitor Protection:
 - .1 Provide protective clothing and approved respirators to Authorized Visitors to work areas.
 - .2 Instruct Authorized Visitors in the use of protective clothing, respirators and procedures.
 - .3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Asbestos Work Area.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse or recycling as required.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Place materials defined as hazardous or toxic in designated containers.
- .4 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
- .5 Fold up metal banding, flatten and place in designated area for recycling.
- .6 Disposal of asbestos waste generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Dispose of asbestos waste in sealed double thickness 6 mils bags or leak proof drums. Label containers with appropriate warning labels.
- .7 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

1.8 EXISTING CONDITIONS

- .1 Results of tests of asbestos containing materials to be handled, removed, or otherwise disturbed and disposed of during this Project are appended to this specification. These are for general information only and are not necessarily representative of asbestos containing materials covered within scope of this Project.
- .2 Notify Departmental Representative of suspect asbestos containing material discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by Departmental Representative.

1.9 SCHEDULING

- .1 Not later than ten (10) days before beginning Work on this Project notify following in writing:
 - .1 Appropriate Regional or Zone Director of Medical Services Branch, Health Canada.
 - .2 Regional Office of Labour Canada.
 - .3 Provincial/Territorial, Department of Labour.
 - .4 Disposal Authority.
- .2 Inform sub-trades of presence of asbestos containing materials identified in Existing Conditions.
- .3 Submit to Departmental Representative copy of notifications prior to start of Work.
- .4 Hours of Work: The asbestos abatement will commence at a date confirmed by the Departmental Representative.
- .5 Allow sufficient time for inspection of the site by Departmental Representative after site preparations and barriers are completed and before asbestos abatement work commences. **The Asbestos Abatement Contractor shall provide a minimum of 24 hours notification for all pre-contamination and final visual inspection requests** to the Departmental Representative.

1.10 PERSONNEL TRAINING

- .1 Before beginning Work, provide to Departmental Representative satisfactory proof that every worker has had instruction and training in hazards of asbestos exposure, in personal hygiene including dress and showers, in entry and exit from Asbestos Work Area, in aspects of work procedures including glove bag procedures, and in use, cleaning, and disposal of respirators and protective clothing.
- .2 Instruction and training related to respirators includes, at minimum:
 - .1 Proper fitting of equipment.
 - .2 Inspection and maintenance of equipment.
 - .3 Disinfecting of equipment.
 - .4 Limitations of equipment.
- .3 Instruction and training must be provided by competent, qualified person.
- .4 Supervisory personnel to complete required training.

Part 2 Products

2.1 MATERIALS

- .1 Polyethylene: minimum 0.15 mm thick unless otherwise specified; in sheet size to minimize joints.
- .2 FR polyethylene: minimum 0.15 mm thick, woven fibre reinforced fabric bonded both sides with polyethylene.

- .3 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under both dry conditions and wet conditions using amended water.
- .4 Wetting agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether, or other material approved by DCC Representative Consultant Departmental Representative, mixed with water in concentration to provide adequate penetration and wetting of asbestos containing material.
- .5 Waste Containers: contain waste in two separate containers.
 - .1 Inner container: 0.15 mm thick sealable polyethylene bag or where glove bag method is used, glove bag itself.
 - .2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.
 - .3 Labelling requirements: affix preprinted cautionary asbestos warning, in both official languages, that is visible when ready for removal to disposal site. Label containers in accordance with Asbestos Regulations 29 CFR 1910.1001. Label in both official languages.
- .6 Glove bag:
 - .1 The glove bag to be equipped with:
 - .1 Sleeves and gloves that are permanently sealed to the body of the bag to allow the worker to access and deal with the insulation and maintain a sealed enclosure throughout the work period.
 - .2 Valves or openings to allow insertion of a vacuum hose and the nozzle of a water sprayer while maintaining the seal to the pipe, duct or similar structure.
 - .3 A tool pouch with a drain.
 - .4 A seamless bottom and a means of sealing off the lower portion of the bag.
 - .5 A high strength double throw zipper and removable straps, if the bag is to be moved during the removal operation.
- .7 Tape: tape suitable for sealing polyethylene to surfaces under both dry and wet conditions using amended water.
- .8 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual asbestos fibres.
- .9 Sealer: flame spread and smoke developed rating less than 50 and be compatible with new fireproofing.
- .10 Encapsulants: Type 2 surface film forming type Class A water based conforming to CAN/CGSB-1.205 and approved by the Fire Commissioner of Canada.

Part 3 Execution

3.1 PREPARATION

- .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .2 Work Areas:
 - .1 Shut off and isolate air handling and ventilation systems to prevent fibre dispersal to other building areas during work phase. Conduct smoke tests to ensure that duct work is airtight. Seal and caulk joints and seams of active return air ducts within Asbestos Work Area.
 - .2 Preclean moveable furniture and carpeting within proposed work areas using HEPA vacuum and remove from work areas to temporary location.
 - .3 Preclean fixed casework, plant, and equipment within proposed work areas, using HEPA vacuum and cover with polyethylene sheeting sealed with tape.
 - .4 Clean proposed work areas using, where practicable, HEPA vacuum cleaning equipment. If not practicable, use wet cleaning method. Do not use methods that raise dust, such as dry sweeping, or vacuuming using other than HEPA vacuum equipment.
 - .5 The spread of dust from the work area to be prevented by:
 - .1 Using enclosures of polyethylene or other suitable material that is impervious to asbestos (including, if the enclosure material is opaque, one or more transparent window areas to allow observation of the entire work area from outside the enclosure), if the work area is not enclosed by walls.
 - .2 Using curtains of polyethylene sheeting or other suitable material that is impervious to asbestos, fitted on each side of each entrance or exit from the work area.
 - .6 Put negative pressure system in operation and operate continuously from time first polyethylene is installed to seal openings until final completion of work including final cleanup. Provide continuous monitoring of pressure difference using automatic recording instrument. The system to maintain a negative air pressure of 0.02 inches 5 Pa of water, relative to the area outside the enclosed area. The system to be inspected and maintained by a competent person prior each use to ensure that there is no air leakage, and if the filter is found to be damaged or defective, it to be replaced before the ventilation system is used.
 - .7 Seal off openings such as corridors, doorways, windows, skylights, ducts, grilles, and diffusers, with polyethylene sheeting sealed with tape.
 - .8 Cover floor and wall surfaces with polyethylene sheeting sealed with tape. Use two layers of FR polyethylene on floors. Cover floors first so that polyethylene extends at least 300 mm up walls then cover walls to overlap floor sheeting.
 - .9 Build airlocks at entrances to and exits from work areas so that work areas are always closed off by one curtained doorway when workers enter or exit.
 - .10 At each access to work areas install warning signs in both official languages in upper case "Helvetica Medium" letters reading as follows where number in parentheses indicates font size to be used: "CAUTION ASBESTOS HAZARD

AREA (25 mm) NO UNAUTHORIZED ENTRY (19 mm) WEAR ASSIGNED PROTECTIVE EQUIPMENT (19 mm) BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM (7 mm)".

- .11 After work area isolation, remove heating, ventilating, and air conditioning filters, pack in sealed plastic bags 0.15 mm minimum thick and treat as contaminated asbestos waste. Remove ceiling - mounted objects such as lights, partitions, other fixtures not previously sealed off, and other objects that interfere with asbestos removal, as directed by Departmental Representative. Use localized water spraying during fixture removal to reduce fibre dispersal.
 - .12 Maintain emergency and fire exits from work areas, or establish alternative exits satisfactory to Authority having jurisdiction.
 - .13 Where application of water is required for wetting asbestos containing materials, shut off electrical power, provide 24 volt safety lighting and ground fault interrupter circuits on power source for electrical tools, in accordance with applicable CSA Standard. Ensure safe installation of electrical lines and equipment.
 - .14 After preparation of work areas and Decontamination Enclosure Systems, for the removal of all other asbestos containing materials, remove within work area and dispose of as contaminated waste in specified containers. Spray asbestos debris and immediate work area with amended water to reduce dust, as work progresses.
- .3 Worker Decontamination Enclosure System:
- .1 Worker Decontamination Enclosure System includes Equipment and Access Room, Shower Room, and Clean Room, as follows:
 - .1 Equipment and Access Room: build Equipment and Access Room between Shower Room and work areas, with two curtained doorways, one to Shower Room and one to work areas. Install portable toilet, waste receptor, and storage facilities for workers' shoes and protective clothing to be reworn in work areas. Build Equipment and Access Room large enough to accommodate specified facilities, other equipment needed, and at least one worker allowing him /her sufficient space to undress comfortably.
 - .2 Shower Room: build Shower Room between Clean Room and Equipment and Access Room, with two curtained doorways, one to Clean Room and one to Equipment and Access Room. Provide one shower for every five workers. Provide constant supply of hot and cold or warm water. Provide soap, clean towels, and appropriate containers for disposal of used respirator filters.
 - .3 Clean Room: build Clean Room between Shower Room and clean areas outside of enclosures, with two curtained doorways, one to outside of enclosures and one to Shower Room. Provide lockers or hangers and hooks for workers' street clothes and personal belongings. Provide storage for clean protective clothing and respiratory equipment. Install mirror to permit workers to fit respiratory equipment properly.
- .4 Container and Equipment Decontamination Enclosure System:
- .1 Container and Equipment Decontamination Enclosure System consists of Staging Area within work area, Washroom, Holding Room, and Unloading Room.

Purpose of system is to provide means to decontaminate waste containers, scaffolding, waste and material containers, vacuum and spray equipment, and other tools and equipment for which Worker Decontamination Enclosure System is not suitable.

- .1 Staging Area: designate Staging Area in work area for gross removal of dust and debris from waste containers and equipment, labelling and sealing of waste containers, and temporary storage pending removal to Washroom. Equip Staging Area with curtained doorway to Washroom.
 - .2 Washroom: build Washroom between Staging Area and Holding Room with two curtained doorways, one to Staging Area and one to Holding Room. Provide high - pressure low - volume sprays for washing of waste containers and equipment. Pump waste water through 5 micrometre filter system before directing into drains. Provide piping and connect to water sources and drains.
 - .3 Holding Room: build Holding Room between Washroom and Unloading Room, with two curtained doorways, one to Washroom and one to Unloading Room. Build Holding Room sized to accommodate at least two waste containers and largest item of equipment used.
 - .4 Unloading Room: build Unloading Room between Holding Room and outside, with two curtained doorways, one to Holding Room and one to outside.
- .5 Construction of Decontamination Enclosures:
- .1 Build suitable framing for enclosures or use existing rooms where convenient, and line with polyethylene sheeting sealed with tape. Use two layers of FR polyethylene on floors.
 - .2 Build curtained doorways between enclosures so that when people move through or when waste containers and equipment are moved through doorway, one of two closures comprising doorway always remains closed.
- .6 Separation of Work Areas from Occupied Areas:
- .1 Separate parts of building required to remain in use as indicated from parts of building used for asbestos abatement by means of airtight barrier system constructed as follows:
 - .1 Build suitable floor to ceiling lumber or metal stud framing, cover with polyethylene sheeting sealed with tape, and apply 9 mm minimum thick plywood. Seal joints between plywood sheets and between plywood and adjacent materials with surface film forming type sealer, to create airtight barrier.
 - .2 Cover plywood barrier with polyethylene sealed with tape, as specified for work areas.
- .7 Maintenance of Enclosures:
- .1 Maintain enclosures in tidy condition.
 - .2 Ensure that barriers and polyethylene linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.
 - .3 Visually inspect enclosures at beginning of each working period.

- .4 Use smoke methods to test effectiveness of barriers when directed by Departmental Representative.
- .8 Do not begin Asbestos Abatement work until:
 - .1 Arrangements have been made for disposal of waste.
 - .2 For wet stripping techniques, arrangements have been made for containing, filtering, and disposal of waste water.
 - .3 Work areas and decontamination enclosures and parts of building required to remain in use are effectively segregated.
 - .4 Tools, equipment, and materials waste containers are on hand.
 - .5 Arrangements have been made for building security.
 - .6 Warning signs are displayed where access to contaminated areas is possible.
 - .7 Notifications have been completed and other preparatory steps have been taken.

3.2 SUPERVISION

- .1 Minimum of one Supervisor for every ten workers is required.
- .2 Approved Supervisor must remain within Asbestos Work Area during disturbance, removal, or other handling of asbestos containing materials.

3.3 ASBESTOS REMOVAL

- .1 Before removing asbestos:
 - .1 Prepare site.
 - .2 Spray asbestos material with water containing specified wetting agent, using airless spray equipment capable of providing "mist" application to prevent release of fibres. Saturate asbestos material sufficiently to wet it to substrate without causing excess dripping. Spray asbestos material repeatedly during work process to maintain saturation and to minimize asbestos fibre dispersion.
- .2 Remove saturated asbestos material in small sections. Do not allow saturated asbestos to dry out. As it is being removed pack material in sealable plastic bags 0.15 mm minimum thick and place in labelled containers for transport.
- .3 Seal filled containers. Clean external surfaces thoroughly by wet sponging. Remove from immediate working area to Staging Area. Clean external surfaces thoroughly again by wet sponging before moving containers to decontamination Washroom. Wash containers thoroughly in decontamination Washroom, and store in Holding Room pending removal to Unloading Room and outside. Ensure that containers are removed from Holding Room by workers who have entered from uncontaminated areas dressed in clean coveralls.
- .4 After completion of stripping work, wire brushed and wet sponged surfaces from which asbestos has been removed to remove visible material. During this work keep surfaces wet.
- .5 Where Departmental Representative decides complete removal of asbestos containing material is impossible due to obstructions such as structural members or major service elements, and provides written direction, encapsulate material as follows:
 - .1 Apply surface film forming type sealer to provide 0.635 mm minimum dry film thickness over sprayed asbestos surfaces. Apply using airless spray equipment to

avoid blowing off fibres. . Apply penetrating type sealer to penetrate existing sprayed asbestos surfaces to uniform depth of 25 mm minimum. Apply penetrating type sealer to penetrate existing sprayed asbestos surfaces uniformly to substrate

- .6 After wire brushing and wet sponging to remove visible asbestos, and after encapsulating asbestos containing material impossible to remove, wet clean entire work area including Equipment and Access Room, and equipment used in process. After 24 hour period to allow for dust settling, wet clean these areas and objects again. During this settling period no entry, activity, or ventilation will be permitted. After second 24 hour period under same conditions, clean these areas and objects again using HEPA vacuum followed by wet cleaning. After inspection by Departmental Representative apply continuous coat of slow drying sealer to surfaces of work area. Allow at least 16 hours with no entry, activity, ventilation, or disturbance other than operation of negative pressure units during this period.
- .7 Work is subject to visual inspection and air monitoring. Contamination of surrounding areas indicated by visual inspection or air monitoring will require complete enclosure and clean-up of affected areas.
- .8 Cleanup:
 - .1 Frequently during Work and immediately after completion of work, clean up dust and asbestos containing waste using HEPA vacuum or by damp mopping.
 - .2 Place dust and asbestos containing waste in sealed dust tight waste bags. Treat drop sheets and disposable protective clothing as asbestos waste and wet and fold to contain dust and then place in waste bags.
 - .3 Immediately before their removal from Asbestos Work Area and disposal, clean each filled waste bag using damp cloths or HEPA vacuum and place in second clean waste bag.
 - .4 Seal and remove double bagged waste from site. Dispose of in accordance with requirements of Provincial/Territorial and Federal authority having jurisdiction. Supervise dumping and ensure that dump operator is fully aware of hazardous nature of material to be dumped and that guidelines and regulations for asbestos disposal are followed.
 - .5 Perform final thorough clean-up of Asbestos Work Areas and adjacent areas affected by Work using HEPA vacuum.

3.4 FINAL CLEANUP

- .1 Following cleaning specified in 3.3.8
- .2 Remove polyethylene sheet by rolling it away from walls to centre of work area. Vacuum visible asbestos containing particles observed during cleanup, immediately, using HEPA vacuum equipment.
- .3 Place polyethylene seals, tape, cleaning material, clothing, and other contaminated waste in plastic bags and sealed labelled waste containers for transport.
- .4 Include in clean-up Work areas, Equipment and Access Room, Washroom, Shower Room, and other contaminated enclosures.

- .5 Include in clean-up sealed waste containers and equipment used in Work and remove from work areas, via Container and Equipment Decontamination Enclosure System, at appropriate time in cleaning sequence.
- .6 Conduct final check to ensure that no dust or debris remains on surfaces as result of dismantling operations and carry out air monitoring again to ensure that asbestos levels in building do not exceed 0.01 fibres/cc. Repeat cleaning using HEPA vacuum equipment, or wet cleaning methods where feasible, in conjunction with sampling until levels meet this criteria.
- .7 As work progresses, and to prevent exceeding available storage capacity on site, remove sealed and labelled containers containing asbestos waste and dispose of to authorized disposal area in accordance with requirements of disposal authority. Ensure that each shipment of containers transported to dump is accompanied by Contractor's representative to ensure that dumping is done in accordance with governing regulations.

3.5 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS

- .1 When cleanup is complete:
 - .1 Re-establish objects and furniture moved to temporary locations in course of Work, in their proper positions.
 - .2 Re-secure mounted objects removed in course of Work in their former positions.
 - .3 Re-establish mechanical and electrical systems in proper working order. Install new filters.
 - .4 Repair or replace objects damaged in the course of Work, as directed by Departmental Representative.

3.6 AIR MONITORING

- .1 From beginning of Work until completion of cleaning operations, Departmental Representative to take air samples on daily basis outside of work area enclosure in accordance with Health Canada recommendations.
 - .1 Contractor will be responsible for monitoring inside enclosure in accordance with applicable Provincial/Territorial Occupational Health and Safety Regulations.
- .2 Use results of air monitoring inside work area to establish type of respirators to be used. Workers may be required to wear sample pumps for up to full-shift periods.
 - .1 If fibre levels are above safety factor of respirators in use, stop abatement, apply means of dust suppression, and use higher safety factor in respiratory protection for persons inside enclosure.
 - .2 If air monitoring shows that areas outside work area enclosures are contaminated, enclose, maintain and clean these areas, in same manner as that applicable to work areas.
- .3 Final air monitoring to be conducted as follows: After Asbestos Work Area has passed visual inspection and acceptable coat of lock-down agent has been applied to surfaces within enclosure, and appropriate setting period has passed, Departmental Representative will perform air monitoring within Asbestos Work Area by aggressive methods, where provincial regulations require.
 - .1 Final air monitoring results must show fibre levels of less than 0.01 f/cc.

- .2 If air monitoring results show fibre levels in excess of 0.01 f/cc, re-clean work area and apply another acceptable coat of lock-down agent to surfaces.
- .3 Repeat as necessary until fibre levels are less than 0.01 f/cc.

3.7 INSPECTION

- .1 Perform inspection of Asbestos Work Area to confirm compliance with specification and governing authority requirements. Deviations from these requirements that have not been approved in writing by Departmental Representative may result in Work stoppage, at no cost to Owner.
- .2 Departmental Representative will inspect Work for:
 - .1 Adherence to specific procedures and materials.
 - .2 Final cleanliness and completion.
 - .3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.
- .3 When asbestos leakage from Asbestos Work Area has occurred or is likely to occur Departmental Representative may order Work shutdown.
 - .1 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

END OF SECTION

Part 1 General

1.1 SUMMARY

- .1 Comply with requirements of this Section when performing following Work:
 - .1 Removal of lead based paint by scraping or sanding using non-powered hand tools.
 - .2 Manual demolition of lead-painted plaster walls or building components by striking wall with sledgehammer or similar tool.

1.2 RELATED REQUIREMENTS

- .1 Not used.

1.3 REFERENCE STANDARDS

- .1 Province of Alberta, Occupational Health and Safety Bulletin. Lead at The Work Site. November 2013.
- .2 Department of Justice Canada
 - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .3 Health Canada
 - .1 Workplace Hazardous Materials Information System (WHMIS), Material Safety Data Sheets (MSDS).
- .4 Human Resources and Social Development Canada (HRSDC)
 - .1 Canada Labour Code Part II, - SOR 86-304 - Occupational Health and Safety Regulations.
- .5 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .6 U.S. Environmental Protection Agency (EPA)
 - .1 EPA 747-R-95-007-1995, Sampling House Dust for Lead.
- .7 U.S. Department of Health and Human Services/Centers for Disease Control and Prevention/National Institute for Occupational Safety and Health (NIOSH)
 - .1 NIOSH 94-113 - NIOSH Manual of Analytical Methods (NMAM), 4th Edition (1994).
- .8 U.S. Department of Labour - Occupational Safety and Health Administration (OSHA) - Toxic and Hazardous Substances
 - .1 Lead in Construction Regulation - 29 CFR 1926.62-1993.
- .9 Underwriters' Laboratories of Canada (ULC)

1.4 DEFINITIONS

- .1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .2 Authorized Visitors: Departmental Representative or designated representatives and representatives of regulatory agencies.
- .3 Occupied Area: areas of building or work site that is outside Work Area.
- .4 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must be appropriate capacity for scope of work.
- .5 Airlock: ingress or egress system, without permitting air movement between contaminated area and uncontaminated area. Consisting of two curtained doorways at least 2 m apart.
- .6 Curtained doorway: arrangement of closures to allow ingress and egress from one room to another. Typically constructed as follows:
 - .1 Place two overlapping polyethylene sheets over existing or temporarily framed doorway, securing each along top of doorway, securing vertical edge of one sheet along one vertical side of doorway, and secure other sheet along opposite vertical side of doorway.
 - .2 Reinforce free edges of polyethylene with duct tape and add weight to bottom edge to ensure proper closing.
 - .3 Overlap each polyethylene sheet at openings 1.5 m on each side.
- .7 Action level: employee exposure, without regard to usage of respirators, to an airborne concentration of lead of 50 micrograms per cubic metre of air calculated as 8 hour time-weighted average (TWA). Intermediate precautions for lead abatement are based on airborne lead concentrations greater than 0.05 milligrams per cubic metre of air within Work Area.
- .8 Competent person: Individuals capable of identifying existing lead hazards in workplace and taking corrective measures to eliminate them.
- .9 Lead in Dust: wipe sampling on vertical and/or horizontal surfaces, dust and debris is considered to be lead contaminated if it contains more than 40 micrograms of lead in dust per square foot.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide proof satisfactory to Departmental Representative that suitable arrangements have been made to dispose of lead based paint waste in accordance with requirements of authority having jurisdiction.
- .2 Quality Control:
 - .1 Provide Departmental Representative necessary permits for transportation and disposal of lead based paint waste and proof that it has been received and properly disposed.

- .2 Provide proof satisfactory to Departmental Representative that employees have had instruction on hazards of lead exposure, respirator use, dress, entry and exit from Work Area, and aspects of work procedures and protective measures.
- .3 Provide proof that supervisory personnel have attended lead abatement course, of not less than two days duration, approved by Departmental Representative. Minimum of one supervisor for every ten workers.
- .3 Product data:
 - .1 Provide documentation including test results, fire and flammability data, and Material Safety Data Sheets (MSDS) for chemicals or materials including:
 - .1 Encapsulants.
 - .2 Amended water.
 - .3 Slow drying sealer.
- .4 Provide a proposed layout of decontamination systems enclosures and barrier systems to Departmental Representative.

1.6 QUALITY ASSURANCE

- .1 Regulatory Requirements: comply with Federal, Provincial/Territorial and local requirements pertaining to lead paint, in case of conflict among those requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at time work is performed.
- .2 Health and Safety:
 - .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
 - .2 Safety Requirements: worker and visitor protection.
 - .1 Protective equipment and clothing to be worn by workers and visitors in Work Area includes:
 - .1 Respirator NIOSH approved and equipped with filter cartridges with assigned protection factor of 50, acceptable to Authority having jurisdiction. Suitable for type of lead and level of lead dust exposure in Lead Work Area. Provide sufficient filters so workers can install new filters following disposal of used filters and before re-entering contaminated areas.
 - .2 Disposable type protective clothing that does not readily retain or permit skin contamination, consisting of full body covering including head covering with snug fitting cuffs at wrists, ankles, and neck.
 - .2 Requirements for workers:
 - .1 Remove street clothes in clean change room and put on respirator with new filters or reusable filters, clean coveralls and head covers before entering Equipment and Access Rooms or Work Area. Store street clothes, uncontaminated footwear, towels, and similar uncontaminated articles in clean change room.

- .2 Remove gross contamination from clothing before leaving work area. Place contaminated work suits in receptacles for disposal with other lead - contaminated materials. Leave reusable items except respirator in Equipment and Access Room. When not in use in Work Area, store work footwear in Equipment and Access Room. Upon completion of lead abatement, dispose of footwear as contaminated waste or clean thoroughly inside and out using soap and water before removing from Work Area or from Equipment and Access Room.
- .3 Enter unloading room from outside dressed in clean coveralls to remove waste containers and equipment from Holding Room of Container and Equipment Decontamination Enclosure system. Workers not to use this system as means to leave or enter work area.
- .3 Eating, drinking, chewing, and smoking are not permitted in Work Area.
- .4 Ensure workers are fully protected with respirators and protective clothing during preparation of system of enclosures prior to commencing actual lead abatement.
- .5 Ensure workers wash hands and face when leaving Work Area.
- .6 Provide and post in Clean Change Room and in Equipment and Access Room the procedures described in this Section, in both official languages.
- .7 Ensure no person required to enter Work Area has facial hair that affects seal between respirator and face.
- .8 Visitor Protection:
 - .1 Provide protective clothing and approved respirators to Authorized Visitors to Work Areas.
 - .2 Instruct Authorized Visitors in use of protective clothing, respirators and procedures.
 - .3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Work Area.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for recycling or reuse as required.
- .2 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal regulations.
- .3 Disposal of lead waste generated by removal activities must comply with Territorial, Federal, Municipal and Provincial, regulations. Dispose of lead waste in sealed double thickness 6 ml bags or leak proof drums. Label containers with appropriate warning labels.
- .4 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

1.8 EXISTING CONDITIONS

- .1 Reports and information pertaining to lead based paint to be handled, removed, or otherwise disturbed and disposed of during this Project are appended to this specification..
- .2 Notify Departmental Representative of lead based paint discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by Departmental Representative.

1.9 SCHEDULING

- .1 Not later than two days before beginning Work on this Project notify the following in writing, where appropriate:
 - .1 Appropriate Regional or Zone Director of Medical Services Branch, Health Canada.
 - .2 Provincial Ministry of Labour.
 - .3 Disposal Authority.
- .2 Inform sub trades of presence of lead-containing materials identified in Existing Conditions.
- .3 Provide Departmental Representative copy of notifications prior to start of Work.
- .4 Hours of Work: The abatement will commence at a date confirmed by the Departmental Representative.
- .5 Allow sufficient time for inspection of the site by Departmental Representative after site preparations and barriers are completed and before abatement work commences. **The Abatement Contractor shall provide a minimum of 24 hours notification for all pre-contamination and final visual inspection requests** to the Departmental Representative.

Part 2 Products

2.1 MATERIALS

- .1 Polyethylene: 0.15 mm unless otherwise specified; in sheet size to minimize joints.
- .2 FR polyethylene: 0.15 mm woven fibre reinforced fabric bonded both sides with polyethylene.
- .3 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under dry conditions and wet conditions using amended water.
- .4 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for trapping residual lead paint residue.
- .5 Lead waste containers: metal or fibre type acceptable to dump operator with tightly fitting covers and 0.15 mm sealable polyethylene liners.
 - .1 Label containers with pre-printed bilingual cautionary Warning Lead clearly visible when ready for removal to disposal site.

Part 3 Execution

3.1 SUPERVISION

- .1 Approved Supervisor must remain within Lead Work Area during disturbance, removal, or other handling of lead based paints.

3.2 PREPARATION

- .1 Remove and wrap items to be salvaged or reused, and transport and store in area specified by Departmental Representative.
- .2 Work Area:
 - .1 Shut off and isolate HVAC system to prevent dust dispersal into other building areas. Conduct smoke tests to ensure duct work is airtight.
 - .2 Pre-clean fixed casework, and equipment within work areas, using HEPA vacuum and cover with polyethylene sheeting sealed with tape.
 - .3 Clean work areas using HEPA vacuum. If not practicable, use wet cleaning method. Do not use methods that raise dust, such as dry sweeping, or vacuuming using other than HEPA vacuum.
 - .4 Seal off openings, corridors, doorways, windows, skylights, ducts, grilles, and diffusers, with polyethylene sheeting sealed with tape.
 - .5 Cover floor surfaces in work area from wall to wall with FR polyethylene drop sheets to protect existing floor during removal.
 - .6 Build airlocks at entrances and exits from work areas to ensure work areas are always closed off by one curtained doorway when workers enter or exit.
 - .7 At point of access to work areas install warning signs in both official languages in upper case "Helvetica Medium" letters reading as follows where number in parentheses indicates font size to be used:
 - .1 CAUTION LEAD HAZARD AREA (25 mm).
 - .2 NO UNAUTHORIZED ENTRY (19 mm).
 - .3 WEAR ASSIGNED PROTECTIVE EQUIPMENT AND RESPIRATOR (19 mm).
 - .4 BREATHING LEAD CONTAMINATED DUST CAUSES SERIOUS BODILY HARM (7 mm).
 - .8 Maintain emergency and fire exits from work areas, or establish alternative exits satisfactory to Authority having jurisdiction.
 - .9 Where water application is required for wetting lead containing materials, provide temporary water supply by use of appropriately sized hoses for application of water as required.
 - .10 Provide electrical power and shut off for operation of powered tools and equipment. Provide 24 volt safety lighting and ground fault interrupter circuits on power source for electrical tools, in accordance with applicable CSA Standard. Ensure safe installation of electrical lines and equipment.
- .3 Worker Decontamination Enclosure System:

- .1 Worker Decontamination Enclosure System includes Equipment and Access Room and Clean Room, as follows:
 - .1 Equipment and Access Room: construct between exit and work areas, with two curtained doorways, one to the rest of suite, and one to work area. Install waste receptor and storage facilities for workers' shoes and protective clothing to be re-worn in work areas. Build large enough to accommodate specified facilities, equipment needed, and at least one worker allowing sufficient space to change comfortably.
 - .2 Clean Room: construct with curtained doorway to outside of enclosures. Provide lockers or hangers and hooks for workers' street clothes and personal belongings. Provide storage for clean protective clothing and respiratory equipment. Install mirror to permit workers to fit respiratory equipment properly.
- .4 Construction of Decontamination Enclosures:
 - .1 Construct framing for enclosures or use existing rooms. Line enclosure with polyethylene sheeting and seal with tape, apply two layers of FR polyethylene on floor.
 - .2 Construct curtain doorways between enclosures so when people move through or waste containers and equipment are moved through doorway, one of two closures comprising doorway always remains closed.
- .5 Separation of Work Areas from Occupied Areas
 - .1 Barriers between Work Area and occupied area to be constructed as follows:
 - .1 Construct floor to ceiling metal or lumber stud framing, cover with polyethylene sheeting and seal with duct tape. Apply plywood over polyethylene sheeting. Seal plywood joints and between adjacent materials with surface film forming sealer, to create airtight barrier.
 - .2 Cover plywood with polyethylene sheeting and sealed with duct tape.
- .6 Maintenance of Enclosures:
 - .1 Maintain enclosures in clean condition.
 - .2 Ensure barriers and polyethylene linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately.
 - .3 Visually inspect enclosures at beginning of each work day.
 - .4 Use smoke test method to test effectiveness of barriers as directed by Departmental Representative.

3.3 LEAD - BASE PAINT ABATEMENT

- .1 Removal of lead based paint to be performed by scraping or sanding using non-powered hand tools, or manual demolition of lead-painted plaster walls or building components by striking a wall with sledgehammer or similar tool.
- .2 Remove lead based paint in small sections and pack as it is being removed in sealable 0.15 mm plastic bags and place in labelled containers for transport.

- .3 Seal filled containers. Clean external surfaces thoroughly by wet sponging. Remove from immediate working area to Staging Area. Clean external surfaces thoroughly again by wet sponging before moving containers to decontamination Washroom. Wash containers thoroughly in decontamination Washroom, and store in Holding Room pending removal to Unloading Room and outside. Ensure containers are removed from Holding Room by workers who have entered from uncontaminated areas dressed in clean coveralls.
- .4 After completion of stripping work, wire brush and wet sponge surface from which lead based paint has been removed to remove visible material. During this work keep surfaces wet.
- .5 After wire brushing and wet sponging to remove visible lead based paint, and after encapsulating lead containing material impossible to remove, wet clean work area including equipment and access room, and equipment used in process. After inspection by Departmental Representative, apply continuous coat of slow drying sealer to surfaces. Do not disturb work for 8 hours with no entry, activity, ventilation or disturbance during this period.
- .6 After enclosing lead painted surfaces, wet clean work area and equipment and access room. During settling period no entry, activity, or ventilation will be permitted.

3.4 INSPECTION

- .1 Perform inspection to confirm compliance with specification and governing authority requirements. Any costs incurred as a result of work stoppage due to deviations from the requirements will be the Contractor's responsibility.
- .2 Departmental Representative will inspect work for:
 - .1 Adherence to specific procedures and materials.
 - .2 Final cleanliness and completion.
 - .3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.
- .3 When lead dust leakage from Work Area occurs Departmental Representative may order Work shutdown.
 - .1 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

3.5 LEAD SURFACE SAMPLING - WORK AREAS

- .1 Final lead surface sampling to be conducted as follows:
 - .1 After Work Area has passed a visual inspection for cleanliness approved by Departmental Representative and acceptable coat of lock-down agent has been applied to surfaces within enclosure, and appropriate setting period of 8 hours has passed. Departmental Representative will perform lead wipe sampling in Work Area.
 - .1 Final lead wipe sampling results from horizontal and vertical surfaces where lead based paints have been removed must show lead levels of less than 40 micrograms of lead in dust per square foot. Samples must be collected and analyzed in accordance with EPA 747-R-95-007.

- .2 If wipe sampling results show levels of lead in excess of 40 micrograms per square foot, re-clean work area at contractor's expense and apply another acceptable coat of lock-down agent to surfaces.
- .3 Repeat as necessary until fibre levels are less than 40 micrograms per square foot.

3.6 FINAL CLEANUP

- .1 Following specified cleaning procedures, and when lead wipe sampling is below acceptable concentrations proceed with final cleanup.
- .2 Remove polyethylene sheet by rolling it away from walls to centre of work area. Vacuum visible lead containing particles observed during cleanup, immediately, using HEPA vacuum equipment.
- .3 Place polyethylene seals, tape, cleaning material, clothing, and other contaminated waste in plastic bags and sealed labelled waste containers for transport.
- .4 Clean-up Work Areas, Equipment and Access Room, and other contaminated enclosures.
- .5 Clean-up sealed waste containers and equipment used in Work and remove from work areas, via Container and Equipment Decontamination Enclosure System, at appropriate time in cleaning sequence.
- .6 Conduct final check to ensure no dust or debris remains on surfaces as result of dismantling operations.

3.7 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS

- .1 Repair or replace objects damaged in course of work to their original state or better, as directed by Departmental Representative.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Not used.

1.2 REFERENCE STANDARDS

- .1 Environment Canada
 - .1 Manual for Spills of Hazardous Materials-1985.
- .2 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .3 Chlorobiphenyls Regulations (SOR/91-152; Amended SOR/2000-102)
 - .1 Waste Management - PCBs, R.R.O. Regulation 362/90.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Prior to starting work, Contractor performing work of this section to provide:
 - .1 Certificate of Approval for Transportation of PCB Waste and Location of Destruction Facility.
 - .2 WHMIS Training Certificates for Personnel.

1.4 CONTROL SUBMITTALS

- .1 Record keeping: maintain and make available for review by environmental officer or Departmental Representative.
 - .1 Receipt of waste showing:
 - .1 Date of receipt of waste.
 - .2 Description of PCB waste including nameplate description, serial number, PCB registration number and quantity.
 - .3 Condition of PCB waste.
 - .4 Source of PCB waste.
 - .5 Name of carrier of PCB waste.
 - .6 Name of individual who accepted receipt of PCB waste.
 - .2 Removal of waste showing:
 - .1 Date of removal of PCB waste.
 - .2 Condition of PCB waste.
 - .3 Name of carrier of PCB waste.
 - .4 Destination of PCB waste.
 - .5 Name of individual authorizing transport of PCB waste.
- .3 Submit records to Departmental Representative as requested.

1.5 QUALITY ASSURANCE

- .1 Instruct personnel on dangers of PCB exposure, respirator use, decontamination and applicable Federal, Provincial/Territorial and Municipal Regulations.
- .2 Complete work so that at no time do PCB's contaminate building or site environment.

1.6 SUPERVISION

- .1 Provide on site, a supervisor, with authority to oversee health and safety, remediation methods, scheduling, labour and equipment requirements.
- .2 One supervisor for every 10 workers is required.

1.7 DELIVERY, STORAGE AND HANDLING

- .1 Place materials defined as hazardous or toxic in designated containers.
- .2 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.

Part 2 Products

2.1 STORAGE GENERAL

- .1 Storage of PCB materials in accordance with Authority having jurisdiction and CEPA SOR/92-507.

2.2 STORAGE CONTAINERS

- .1 Exterior containers:
 - .1 Structurally-sound and weather-sealed to hold PCB light ballasts.
- .2 PCB solid storage:
 - .1 Drums and containers:
 - .1 Designed with sufficient durability and strength to prevent PCB solids or liquids from being released into environment, affected by weather, or contaminated by external sources.
 - .2 Steel or other material approved by Departmental Representative.
 - .2 Drums:
 - .1 Capacity no greater than 205 litres.
 - .2 Ensure removable steel lid securely attached and complete with PCB-resistant gasket for solids for solids.
 - .3 Paint or treat exterior and interior to prevent rusting.
 - .3 Drum Liners:
 - .1 6 mil clear polyethylene bag, 914 mm x 1524 mm, with opening at 914 mm end.

2.3 WARNING SIGNS AND LABELS

- .1 Label containers of ballasts.

- .2 Maintain labels in clear and legible condition.

Part 3 Execution

3.1 GENERAL

- .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .2 Select PCB removal procedure to minimize contamination of work areas with PCB or other PCB-contaminated debris/waste. Handle PCBs such that no skin contact occurs.
- .3 Ensure that work operations or processes involving PCB or PCB-contaminated materials are conducted in accordance with Federal, Provincial/Territorial and Municipal Regulations and applicable requirements of this Section.

3.2 ACCESS TO STORAGE SITE

- .1 Not used.

3.3 ACCESS TO STORED MATERIAL

- .1 Not used.

3.4 STORAGE PRACTICES

- .1 Store material to prevent it catching fire.
- .2 Store material to prevent it being released.
- .3 Store PCB material together, and away from other stored materials.

3.5 HANDLING TRANSFORMERS

- .1 Not used.

3.6 EMERGENCY RESPONSES

- .1 General:
 - .1 Immediately report to Departmental Representative PCB spills or PCB leaks.

3.7 SANITATION

- .1 Promptly wash liquid-contaminated skin with soap or mild detergent and water.

3.8 PCB CONTAMINATED SOILS

- .1 Not used.

3.9 FIELD QUALITY CONTROL

- .1 Not used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Not used.

1.2 REFERENCE STANDARDS

- .1 Canadian Construction Association, Mould Guidelines for the Canadian Construction Industry, 2004.
- .2 Government of Alberta Employment and Immigration – Best Practices Mould at the Work Site (2009).
- .3 American Conference of Governmental Industrial Hygienists (ACGIH), Bioaerosols Assessment and Control 1999.
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .5 New York City Department of Health - Bureau of Environmental and Occupational Disease Epidemiology's Guidelines on the Assessment and Remediation of Fungi in Indoor Environment 2000
- .6 United States Department of Labor Occupational Safety and Health Administration (OSHA)
 - .1 29 CFR 1910.134 - Respiratory Protection.
 - .2 29 CFR 1910.1200 - Hazard Communication.
- .7 United States Environmental Protection Agency (EPA), Mould Remediation in Schools and Commercial Buildings, 2001.

1.3 DEFINITIONS

- .1 Authorized Visitors: Designated representatives, and representatives of regulatory agencies.
- .2 Cleaning solution: detergent solution.
- .3 Competent person: Individual who can demonstrate that mould remediation training has been obtained, is capable of identifying existing microbial hazards in workplace and selecting appropriate control strategy for microbial exposure.
- .4 Contractor: remediation contractor providing demolition and removal services as defined in specification.
- .5 Fibre Reinforced Polyethylene Sheet: rip-proof fibre reinforced polyethylene sheeting with added fibre reinforced adhesive tape along edges.
- .6 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.

- .7 HVAC: heating ventilating and air-conditioning systems which serve occupied areas. Includes but is not limited to air handling units, duct work, terminal boxes and vents.
- .8 Mould contaminated work area: specific area or location where actual work is being performed or other areas of facility where it has been determined that it may be hazardous to public health as result of mould remediation.
- .9 Occupied Area: areas of building or work site that is outside mould contaminated work area.
- .10 PPE: Personnel Protection Equipment.
- .11 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have a minimum of six litres capacity for work.

1.4 REGULATORY REQUIREMENTS

- .1 Comply with regulations in effect at time work is performed. In case of conflict among these requirements or with these specifications the more stringent requirement applies. If no regulations exist, follow guidelines most widely accepted by recognized professional organizations such as occupational hygienists, health professionals or environmental engineers as listed in paragraph 1.2 Referenced Standards.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit Provincial and/or local requirements for Notice of Project form.
- .2 Submit proof of attendance in form of certificate that supervisory personnel have trained in mould remediation course, approved by Departmental Representative. Minimum of one supervisor for every ten trained workers.

1.6 CLOSEOUT SUBMITTALS

- .1 Maintain general log to provide permanent record of project. Maintain logs and other required documentation as part of permanent project file.
- .2 Daily log must be available for inspection upon request by Departmental Representative.
- .3 Visitor log must be available for inspection upon request by Departmental Representative.

1.7 INSTRUCTION AND TRAINING

- .1 Before commencing work, provide Departmental Representative proof that worker had instruction and training in potential health hazards of mould exposure, handling of hazardous materials, in personal hygiene including protective clothing, in entry and exit from Mould Contaminated Work Area, and in use of disposal procedures including building materials.
- .2 Instruction and training related to respirators includes at minimum:
 - .1 Fitting of equipment.
 - .2 Inspection and maintenance of equipment.
 - .3 Disinfecting of equipment.
 - .4 Limitations of equipment.

- .3 Instruction and training must be provided by designated construction safety advisor.

1.8 WORKER PROTECTION

- .1 Respirators suitable for protection against mould and acceptable to Provincial Authority having jurisdiction. Non-powered disposable filter-type respirator, half-face equipped with replaceable HEPA filter cartridges, personally issued to work and marked as to efficiency and purpose.
- .2 Gloves and eye protection.
- .3 Disposable paper coveralls including head covering.
- .4 Ensure that no person required to enter Mould Contaminated Work Area has facial hair that affects seal between respirator and face.
- .5 Eating, drinking and chewing are not permitted in Mould Contaminated Work Area.
- .6 Before leaving Mould Contaminated Work Area, dispose of protective clothing as waste as specified.
- .7 Ensure workers wash hands and face after leaving Mould Contaminated Work Area. Facilities for washing are to be located close to the mould contaminated work area.

1.9 VISITOR PROTECTION

- .1 Protective clothing and approved respirators Non-powered disposable filter-type respirator of type ½ face with eye protection to be worn by Authorized Visitors to Mould Contaminated Work Area.
- .2 Instruct Authorized Visitors in use of protective clothing, respirators, and procedures.
- .3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Mould contaminated work area.

1.10 HOURS OF WORK

- .1 Hours of Work: The abatement will commence at a date confirmed by the Departmental Representative.
- .2 Allow sufficient time for inspection of the site by Departmental Representative after site preparations and barriers are completed and before mould abatement work commences. **The Abatement Contractor shall provide a minimum of 24 hours notification for all pre-contamination and final visual inspection requests** to the Departmental Representative.

Part 2 Products

2.1 MATERIALS

- .1 Drop Sheets: fibre reinforced polyethylene 0.15 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.
- .2 Disposal bags: dust-tight 0.15 mm clear polyethylene waste bags.
- .3 Wetting Agent: water to mist mould-containing material.
- .4 Cleaning solution: detergent solution for damp wipe and/or mop.
- .5 Fibre reinforced adhesive tape: used in sealing joints of fibre reinforced polyethylene sheets and for attachment of fibre reinforced polyethylene sheet to finished and unfinished surfaces. Fibre reinforced adhesive tape must be capable of adhering under both dry and wet conditions.
- .6 Materials: provide materials such as fibre reinforced polyethylene sheeting, lumber, nails and hardware necessary to construct and dismantle barriers that isolate Mould Contaminated Work Area.

2.2 TOOLS AND EQUIPMENT

- .1 Tools and equipment: suitable for use with microbial contamination and must be able to withstand de-contamination.
- .2 Personnel protective equipment (protective clothing, personal respiratory filter cartridges, HEPA air filters, etc.): to be provided in sufficient quantities for duration of project.
- .3 Vacuum cleaners: equipped with HEPA filters.
- .4 Ladders and/or scaffolds: adequate length, strength and sufficient quantity to support work schedule.
- .5 Exhaust air fan systems: equipped with HEPA filters and be capable of providing sufficient exhaust air to create a minimum pressure differential of 5 to 7 Pa and to allow sufficient flow of air through area.

Part 3 Execution

3.1 PREPARATION OF MOULD CONTAMINATED WORK AREA

- .1 Mould Contaminated Work Area and areas adjacent and around area to be unoccupied. Vacating is recommended in case of infants (less than 12 months old), elderly people, persons having undergone recent surgery, immune suppressed people or people with chronic inflammatory lung diseases.
- .2 One supervisor for every ten trained workers is required.
- .3 Approved supervisor must remain within Mould Contaminated Work Area at all times during disturbance, removal or other handling of mould-contaminated materials.

- .4 Turn off HVAC systems prior to starting remediation work to prevent contamination and dust dispersal to other areas of building.
- .5 Seal off windows, doorways, skylights, ducts, grilles, diffusers and other openings between Mould Contaminated Work Area and uncontaminated areas outside Mould Contaminated Work Area with fibre reinforced polyethylene sheeting and fibre reinforced adhesive tape to minimize migration of contaminants to other parts of building.
- .6 Clean movable objects within proposed Mould Contaminated Work Area using HEPA filtered vacuum equipment, damp wipe surfaces and remove such objects from Mould Contaminated Work Area to a secure and clean area.
- .7 Clean fixed objects within proposed Mould Contaminated Work Area using HEPA filtered vacuum, damp wipe surfaces and cover with one layer of fibre reinforced polyethylene sheeting securely fastened with fibre reinforced adhesive tape.
- .8 Remove visible dust from surfaces in Mould Contaminated Work Area where dust is likely to be disturbed during course of mould remediation work. Use HEPA vacuum and damp wipe the area.
- .9 Do not use compressed air to clean up or remove dust from any surface.
- .10 Erect critical barriers around perimeter of Mould Contaminated Work Area before remediation using single layer of 0.15 mm fibre reinforced polyethylene sheeting extending from floor slab to as close as possible to underside of above floor slab. Seal gaps due to ductwork, piping conduits with layer of 0.15 mm fibre reinforced polyethylene sheeting. For larger areas, a steel or wooden stud frame can be erected and fibre reinforced polyethylene sheeting attached to it.
- .11 Use 0.15 mm fibre reinforced drop sheets tightly sealed with fibre reinforced adhesive tape over flooring in work areas.
- .12 Ensure that containment area is under negative pressure. Use HEPA filtered fan exhausted outside of Mould Contaminated Work Area to create negative pressure.
- .13 In smaller easily contained areas, use HEPA vacuum cleaner nozzle within enclosure. Locate vacuum canister outside enclosure.
- .14 Before beginning work, at each access to contaminated work area, install warning signs in both official languages in upper case 'Helvetica Medium' letters reading as follows, where number in parentheses indicates font size to be used: 'CAUTION MOULD HAZARD AREA (25 mm) / NO UNAUTHORIZED ENTRY (19 mm) / WEAR ASSIGNED PROTECTIVE EQUIPMENT (19 mm) / BREATHING MOULD DUST MAY CAUSE SERIOUS BODILY HARM (7 mm)'.
CAUTION MOULD HAZARD AREA (25 mm) / NO UNAUTHORIZED ENTRY (19 mm) / WEAR ASSIGNED PROTECTIVE EQUIPMENT (19 mm) / BREATHING MOULD DUST MAY CAUSE SERIOUS BODILY HARM (7 mm)
- .15 Do not begin remediation work until barriers are inspected and authorization is given by Departmental Representative.

3.2 MICROBIAL REMEDIATION

- .1 Use sprayer (low-velocity, fine-mist) to mist (not wet) materials containing mould to be cut or scraped. Perform work to reduce dust creation to lowest levels practicable.

- .2 Non-porous and semi-porous materials can be cleaned using the cleaning solution and reused depending on depth to which microbial growth has penetrated substrate. Wood to be discarded if fungal growth has affected its soundness.
- .3 Porous materials such as wallboards, ceiling tiles and insulation with more than 1 square metre of mould contamination and/or dampness to be removed, discarded and replaced.
- .4 Porous materials identified as lightly contaminated that can be cleaned by HEPA vacuuming, washing or damp wiping can be reused, but to be discarded and replaced if possible.
- .5 Dispose of contaminated building materials as specified.
- .6 During mould remediation, should Departmental Representative suspect contamination of areas outside enclosed Mould Contaminated Work Area, contractor to stop remediation work and immediately decontaminate affected areas? Eliminate causes of such contamination. Prohibit unprotected individuals from entering these contaminated areas until air and swab sampling and a visual inspection determines areas are free from contamination.
- .7 Notify Departmental Representative of mould contaminated material discovered during work and not apparent from drawings, specifications or report pertaining to work. Do not disturb such material pending instructions from Departmental Representative.

3.3 REPAIR AND CLEAN-UP

- .1 During Mould Remediation and immediately after completion of mould remediation, clean enclosure starting within top of enclosure and working down to floor. Clean areas using HEPA vacuum and/or by damp mopping with cleaning solution.
- .2 Perform restoration of designated Mould Contaminated Work Area as specified.
- .3 Leave areas dry and visibly free from contamination, debris and dust.
- .4 After clean-up within barrier dismantle, barrier and dispose of as specified.
- .5 Perform final thorough clean-up of work areas and adjacent areas affected by work using HEPA vacuum and/or damp mopping with cleaning solution.

3.4 WASTE DISPOSAL

- .1 Place debris and mould-containing waste in doubled-bagged dust-tight 0.15 mm fibre reinforced clear polyethylene waste bags. Treat drop sheets and disposable protective clothing as waste; fold these items to contain dust, and place in plastic bags. Securely seal bags.
- .2 Cover large items that have heavy mould growth with fibre reinforced polyethylene sheeting and sealed with fibre reinforced adhesive tape before they are removed from enclosure.
- .3 Clean exterior of each waste-filled bag using damp cloths or HEPA vacuum prior to removal from Mould Contaminated Work Area.
- .4 Remove waste bags from site and dispose. There is no special requirements for disposal of mouldy materials, as such they can be disposed of in landfill.

3.5 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS

- .1 Return objects moved to temporary locations to their location. Ensure objects are cleaned before been moved into cleaned areas.
- .2 Remount objects removed to former positions.
- .3 Re-establish mechanical and electrical systems to proper working order. Install new filters into HVAC systems serving the affected area as part of remediation.

3.6 FINAL CLEARANCE

- .1 Departmental Representative to conduct thorough visual inspection to detect visible accumulations of dust or bulk materials remaining in work area. Should dust, debris, microbial contamination, or residue be detected repeat cleaning, until area meets approval.

END OF SECTION

Part 1 General

1.1 SUMMARY

- .1 Comply with requirements of this Section when performing following work:
 - .1 Removal and decommissioning of equipment with Ozone Depleting Substances (ODSs).

1.2 RELATED REQUIREMENTS

- .1 Not used.

1.3 REFERENCE STANDARDS

- .1 American Board of Industrial Hygiene (ABIH).
- .2 Environment Canada
 - .1 Manual for Spills of Hazardous Materials-1985.
- .3 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .4 Province of Alberta
 - .1 Alberta Reg. 132/2004, 2004 Ozone-Deleing Substance and Halocarbons Regulations
- .5 Federal Environmental Protection Act (1999)
 - .1 Halocarbon Regulations (SOR/2003-289 and amendment regulation SOR/2009-221.
- .6 Province of Alberta.
 - .1 Occupational Health and Safety Code. 2009.

1.4 DEFINITIONS

- .1 **Certified Person:** in respect of a refrigeration system or an air-conditioning system, means a service technician who holds a certificate.
- .2 **Disposal:** transportation to specified disposal facility for permanent disposal, or to an approved site for temporary storage and subsequent transportation to the specified permanent disposal facility.
- .3 **Ozone Depleting Substance (ODS):** Chemical substances including chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) and halons typically used as refrigerants, propellants and in the manufacture of items such as packaging, insulation, solvents and halon based fire extinguishing agents.
- .4 **Removal:** detachment or removal of equipment with known or suspect ODS from applicable fixtures and includes preparation for disposal as described in this section.
- .5 **Work Area:** immediate area in which the removal of ozone depleting substances is being conducted.

1.5 ACTION AND INFORMATION SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.
 - .1 Provide proof satisfactory to Departmental Representative that suitable arrangements have been made to dispose of ODSs in accordance with requirements of authority having jurisdiction.
 - .2 Provide detailed information to Departmental Representative for the purposes of reporting under the SOR/2003-289.
- .2 Quality Control:
 - .1 Provide Departmental Representative necessary permits for transportation and disposal of ODS and proof that it has been received and properly disposed.
 - .2 Provide proof satisfactory to Departmental Representative that employees have had instruction on hazards of ODS, including aspects of work procedures and protective measures.
 - .3 Provide proof that supervisory personnel are a Certified Person. Minimum of one supervisor for every ten workers.
- .3 Product data:
 - .1 Provide documentation including test results, fire and flammability data, and Material Safety Data Sheets (MSDS) for chemicals or materials.

1.6 QUALITY ASSURANCE

- .1 Regulatory Requirements: comply with Federal, Provincial/Territorial, and local requirements, provided that in case of conflict among these requirements or with these specifications, more stringent requirement applies. Comply with regulations in effect at time Work is performed.
- .2 Health and Safety:
 - .1 Perform construction occupational health and safety in accordance with Section 01 35 29.06.
 - .2 Safety Requirements: worker and visitor protection.
 - .1 Require workers to wear chemical resistant gloves in removing equipment with known or suspect ODSs where exposure risk is low.
 - .2 Provide workers with additional protective clothing and equipment where contact with ODS may occur. Provide clothing and equipment appropriate for the potential level of exposure.
 - .3 Establish a spill response plan to mitigate the release of any ODS-containing equipment occurs.
 - .4 Persons employed for the removal of energized electrical equipment shall be or overseen by qualified electricians.
 - .5 Workers and visitors shall be protected at all times when a possibility of ODS exposure exists.

- .6 A copy of the procedures described under Worker and Visitor Protection shall be posted at access points to the work area.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for recycling or reuse as required..
- .2 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal regulations.
- .3 Handle, store transport, recycle or dispose ODSs in accordance with Alberta and Federal legislation and regulations.

1.8 EXISTING CONDITIONS

- .1 Reports and information pertaining to lead based paint to be handled, removed, or otherwise disturbed and disposed of during this Project are appended to this specification.
- .2 Notify Departmental Representative of ODSs discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by Departmental Representative.

1.9 SCHEDULING

- .1 Hours of Work: The work will commence at a date confirmed by the Departmental Representative.

Part 2 Products

2.1 MATERIALS

- .1 Not used.

Part 3 Execution

3.1 SUPERVISION

- .1 Approved Supervisor must remain within Work Area during disturbance, removal, or other handling of ODSs.

3.2 PREPARATION

- .1 Before commencing any work, ensure that the power supply to the designated work area has been isolated and locked out to prevent re-energizing of electrical circuits.
- .2 Inspect all refrigeration, air-conditioning and fire extinguishing equipment to identify possible ODS content. Take care to accurately identify equipment as ODS-containing or non-ODS containing. All suspect ODS-containing equipment shall be considered as ODS-containing.
- .3 Erect appropriate worker and waste decontamination facilities, as appropriate, at locations approved by the Departmental Representative.

- .4 Provide emergency spill containment supplies in work area in accordance to approved emergency spill response plan.
- .5 Establish a storage area for all equipment with ODS until the materials can be transported off-site or decommissioned.

3.3 ODS REMOVAL:

- .1 Perform ODS removal in accordance with applicable regulatory requirements.
- .2 Do not commence work until:
 - .1 Arrangements have been made for disposal of waste.
 - .2 Tools, equipment and waste materials receptors are on hand.
- .3 Locate all ODS-containing equipment.
- .4 All ODS-containing equipment must be inspected by a Certified Person who shall recover any ODSs from the equipment prior to dismantling, decommissioning or destroying the systems.
- .5 Any re-use or re-sale of ODS-containing equipment must be in compliance with the appropriate regulations.
- .6 In the event of a spill or release, isolate the work area, absorb any liquid materials with an appropriate absorptive material and ventilate area immediately.

3.4 INSPECTION AND AIR MONITORING

- .1 From commencement of work until completion of clean-up operations, the Departmental Representative to inspect for compliance with the requirements of the governing authorities, adherence to specifications and to inspect for cleanliness and completion both inside and outside work area(s).
- .2 The Departmental Representative will inspect both inside and outside the work area during work.
- .3 The Departmental Representative is empowered to shut-down all work activities when leakage of ODSs from the work area has occurred or is likely to occur.
 - .1 The Contractor is to allow inspection by the Departmental Representative and provide full access to the work area. The Contractor shall make good on any work disturbed by the inspection at no cost to the Departmental Representative.
 - .2 The contractor shall provide all information to the Departmental Representative required to complete a release report per the requirements of SOR/2003-289.
- .4 If work is found unacceptable in accordance with standards specified or required by authorities having jurisdiction, correct such deficiencies at no cost to the Departmental Representative.
- .5 Pay cost to provide re-inspection of work found not to be in accordance with these specifications and requirements of authorities having jurisdiction.
- .6 Air monitoring is not required.

3.5 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS

- .1 Repair or replace objects damaged in course of work to their original state or better, as directed by Departmental Representative.

END OF SECTION

Part 1 General

1.1 SUMMARY

- .1 Comply with requirements of this Section when performing following work:
 - .1 Removal and decommissioning of equipment with mercury including thermostats, switches and lamps.

1.2 RELATED REQUIREMENTS

- .1 Not used.

1.3 REFERENCE STANDARDS

- .1 American Board of Industrial Hygiene (ABIH).
- .2 Environment Canada
 - .1 Manual for Spills of Hazardous Materials-1985.
- .3 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .4 Canadian Council of Ministers of the Environment (CCME) “*Canada-Wide Standard for Mercury Containing Lamps*” (2001).
- .5 Government of Alberta, Occupational Health and Safety Code. 2009.
- .6 Province of Alberta.
 - .1 Occupational Health and Safety Code. 2009.

1.4 DEFINITIONS

- .1 **Disposal:** transportation to specified disposal facility for permanent disposal, or to an approved site for temporary storage and subsequent transportation to the specified permanent disposal facility.
- .2 **Mercury Equipment:** equipment that contains mercury.
- .3 **Recycling:** collection of mercury bulbs or other equipment for processing by an approved system which will collect mercury without loss to the environment. System may be used on or off-site with collected mercury recycled or disposed of according to Provincial and Federal regulations.
- .4 **Removal:** detachment or removal of equipment with known or suspect mercury from applicable fixtures and includes preparation for disposal as described in this section.

1.5 ACTION AND INFORMATION SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.
 - .1 Provide proof satisfactory to Departmental Representative that suitable arrangements have been made to dispose of mercury equipment in accordance with requirements of authority having jurisdiction.
- .2 Quality Control:

- .2 Provide Departmental Representative necessary permits for transportation and disposal of mercury equipment and proof that it has been received and properly disposed.
 - .3 Provide copies of training certificates to Departmental Representative that employees and supervisory personnel have had instruction on hazards of mercury equipment including aspects of work procedures and protective measures. Minimum of one supervisor for every ten workers is required.
 - .4 Provide a written plan indicating the methods of waste containment during transportation of removed hazardous materials from the site to the designated waste disposal location for acceptance by the Departmental Representative.
- .3 Product data:
- .1 Provide documentation including test results, fire and flammability data, and Material Safety Data Sheets (MSDS) for chemicals or materials.

1.6 QUALITY ASSURANCE

- .1 Regulatory Requirements: comply with Federal, Provincial/Territorial, and local requirements pertaining to mercury, provided that in case of conflict among these requirements or with these specifications, more stringent requirement applies. Comply with regulations in effect at time Work is performed.
- .2 Health and Safety:
 - .1 Perform construction occupational health and safety in accordance with Section 01 35 29.06.
 - .2 Install worker decontamination facilities at locations approved by the Departmental Representative. Worker decontamination facilities to consist of a worker wash bucket filled with water, disinfectant soap and towel.
 - .3 Safety Requirements: Worker and visitor protection.
 - .1 Workers and visitors shall wear body protection and safety equipment appropriate to hazards present at the worksite.
 - .2 Provide workers with additional protective clothing and equipment where contact with liquid mercury may occur. Provide clothing and equipment appropriate for the potential level of exposure.
 - .3 Establish a spill response plan to mitigate the release of any mercury should any breakage of mercury containing equipment occurs.
 - .4 Persons employed for the removal of thermostats and other energized electrical equipment shall be or overseen by qualified electricians.
 - .5 Do not eat, drink, smoke or chew gum or tobacco in designated work areas.
 - .6 Workers and visitors shall be protected at all times when a possibility of mercury exposure exists.
 - .7 A copy of the procedures described under Worker and Visitor Protection shall be posted at access points to the work area.

- .4 Maintain one set of protective clothing and post emergency access procedures at access point to the mercury work area for use by Departmental Representative or authorized visitors.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for recycling reuse as required.
- .2 Handle, store transport and recycle mercury in accordance with Alberta and Federal legislation and regulations.

1.8 EXISTING CONDITIONS

- .1 Reports and information pertaining to mercury equipment to be handled, removed, or otherwise disturbed and disposed of during this Project are appended to this specification.
- .2 Notify Departmental Representative of mercury equipment discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by Departmental Representative.

1.9 SCHEDULING

- .1 Hours of Work: The work will commence at a date confirmed by the Departmental Representative.
- .2 Require workers to wear mercury impervious gloves in addition to normal work clothing where exposure risk is low.

Part 2 Products

2.1 MATERIALS

- .1 **Absorbent Material:** mercury absorbent material. Proof of suitability of the absorbent material as a mercury absorbent must be provided to the Departmental Representative on request.
- .2 **Impervious container:** an airtight, leak proof container suitable for the storage and transportation of mercury containing thermostats meeting Transportation of Dangerous Goods Regulations and applicable provincial requirements.

Part 3 Execution

3.1 SUPERVISION

- .1 Approved Supervisor must remain within Work Area during disturbance, removal, or other handling of mercury equipment.

3.2 PREPARATION

- .1 Before commencing any work involving thermostats, ensure that the power supply to the designated work area has been isolated and locked out to prevent re-energizing of electrical circuits.
- .2 Inspect all thermostats and applicable equipment to identify possible mercury content. Take care to accurately identify thermostats as mercury type or non-mercury type. All

suspect mercury containing thermostats and equipment shall be considered as mercury type.

- .3 All fluorescent lamps or bulbs shall be considered a mercury containing.
- .4 Erect appropriate worker and waste decontamination facilities, as appropriate, at locations approved by the Departmental Representative.
- .5 Provide emergency spill containment supplies in work area in accordance to approved emergency spill response plan.
- .6 Establish a storage area for all equipment with mercury until the materials can be transported off-site, recycled or decommissioned.

3.3 MERCURY REMOVAL OR RECYCLING:

- .1 Do not commence work until:
 - .1 Arrangements have been made for disposal of waste.
 - .2 Tools, equipment and waste materials receptors are on hand.
- .2 Locate all mercury-containing equipment.
- .3 Wear personal protection at all times when disturbing lamps, equipment and items that contain mercury.
- .4 Place all mercury containing equipment into an impervious container packed with absorptive material.
- .5 Place contaminated materials into plastic bags. Close bags securely using ties. Handle bags containing material to prevent bag puncture.
- .6 Place absorbent material in bottom of container.
- .7 Package any mercury contaminated gloves, work clothes and rags in plastic bags and place in container.
- .8 Fill voids between mercury materials with absorbent material. Once container is full, cover materials with absorbent material.
- .9 Seal container and store in a designated storage area pending transportation and disposal.
- .10 Each container must be marked in accordance with the Dangerous Goods Transportation and Handling Act, showing the shipping name (mercury), the product identification number and proper waste class and hazard labels.
- .11 Fluorescent lamps and bulbs shall be collected for disposal in accordance with disposal site requirements or recycled by a means approved by the Departmental Representative.
- .12 Dispose of non-mercury containing equipment as construction waste.
- .13 Any re-use or re-sale of mercury-containing equipment must be in compliance with the appropriate regulations.
- .14 In the event of a spill or release, isolate the work area, absorb any liquid materials with an appropriate absorptive material and ventilate area immediately.
- .15 Handle, store transport and recycle mercury in accordance with Alberta and Federal legislation and regulations.
- .16 The facility used to process and recycle the mercury shall be approved by Alberta Environment, or local jurisdictional authority, and shall have valid Certificates of Approval to carry out the work outlined herein.

3.4 INSPECTION AND AIR MONITORING

- .1 From commencement of work until completion of clean-up operations, the Departmental Representative to inspect for compliance with the requirements of the governing authorities, adherence to specifications and to inspect for cleanliness and completion both inside and outside work area(s).
- .2 If work is found unacceptable in accordance with standards specified or required by authorities having jurisdiction, correct such deficiencies.

3.5 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS

- .1 Repair or replace objects damaged in course of work to their original state or better, as directed by Departmental Representative.

END OF SECTION

ANNEX A
HAZARDOUS MATERIALS LIST

Building # 14, Soils Research Centre			
Building description: Two storey, approximately 328 m ² .			
<i>Complete abatement of hazardous building materials. Building is scheduled to be demolished.</i>			
Location	Material	Estimated Quantity	Notes
Southwest lab on the main floor	Vinyl floor tile (VFT) and mastic White/Grey (228mm X 228mm)	170 m ²	-
2 nd floor northeast office	VFT and mastic White/Grey (228mm X 228mm)		-
Northwest lab and under the stair well on the main floor	VFT and mastic Light and dark brown 228mm X 228 mm)	55 m ²	-
First floor entry of building and 2 nd floor panel room	Grey VFT (non-ACM mastic) (304mm X 304mm)	20 m ²	-
Floor of power panel room	Grey VFT (non-ACM mastic) (228mm X 228mm)	8 m ²	VFTs are affixed to ACM cement board
Floor, walls and ceiling on the second floor	Cement board (Transite)	600 m ²	-
Main floor in the north east lab, hallway, growth chamber, entry, porch, stairs and washroom	Brown square pattern vinyl sheet (linoleum) flooring	84 m ²	-
Underside of sinks in the southwest and northeast labs on the first floor	Sink insulation, bronze and grey coloured	4 sinks	-
Southwest lab, northwest lab and furnace room.	Gypsum board and ACM joint compound	200 m ²	-
Located in remainder of building	Gypsum board and presumed ACM joint compound	885 m ²	Quantity is a very rough estimate.
Window trim throughout the building	Lead containing paint (LCP)	10 windows	-
Door frames on exterior doors	Presumed LCP	3 doors	-
Main floor southwest lab and second floor labs 1 and 2	Fluorescent lighting ballasts (suspected to contain Polychlorinated Biphenyls (PCBs)	8 ballasts	-
Main floor southwest lab and second floor labs 1 and 2	Mercury associated with fluorescent bulbs	8 fixtures	-
First floor hallway, growth chamber and lab 1.	Mercury thermostat	4 Thermostats	-
First floor growth chamber room, NW lab and lab 2.	Ozone depleting substances (ODS)	3 fridges and 1 growth chamber	-
Second floor in the hallway	Smoke detector	1 smoke detector	-

Notes:

1. Information summarized from "Hazardous Materials Investigation, Lacombe, Beaverlodge and Fort Vermillion Research Centres." Ballast Environmental Consulting Ltd. Report dated April 12, 2011 revised March 2013. Report used with permission by PWGSC.
2. Information was not verified by Amec Foster Wheeler.
3. Refer to attached drawings, Annex B.

Building # 10, Canola Laboratory			
Building description: Two storey plus basement, approximately 562 m ² . <i>Complete abatement of hazardous building materials. Building is scheduled to be demolished.</i>			
Location	Material	Estimated Quantity	Notes
Office 5	Brown VFT (non-ACM mastic) (304mm X 304mm)	20 m ²	-
Basement storage 6 and 7, two small rooms within basement storage 7 and hallway between storage 7 and 8.	Light and dark brown floor tile (non-ACM mastic) (228mm X 228mm)	45 m ²	-
Throughout building	Gypsum board and joint compound (joint compound confirmed ACM in select locations and presumed ACM in remainder of building)	2400 m ²	-
Basement coolers (storage 4 and 5)	Pipe insulation	8 liner meters	-
Various	Heat shield associated to incandescent lighting fixture	7 light fixtures	-
Basement coolers (storage 4 and 5)	Interior caulking around wiring	1m	-
Basement furnace room	Insulation on furnace	1.5 m ³	-
Storage 4 and 5	Interior caulking around incandescent light fixtures	4 fixtures	-
Basement storage rooms 1,2,3 and 9	LCP (interior white/yellow)	120 m ²	-
Door frames and window trim throughout the building	LCP (exterior white)	4 doors and 29 Windows	-
Southwest office and lunch room on the second floor	Fluorescent lighting ballasts (suspected to contain PCBs)	3 Ballasts	-
Located throughout the building	Mercury associated with fluorescent bulbs	3 Fixtures	-
First floor hallway	Mercury containing thermostat	1 thermostat	-
Office 2, main floor east hallway and main floor storage area	Ozone depleting substances (ODS)	2 refrigerators and 3 incubators	-
Various locations	Suspect visual mould growth (SVG)	Not quantified	Removal not anticipated prior to demolition

Notes:

1. Information summarized from "Hazardous Materials Investigation, Lacombe, Beaverlodge and Fort Vermillion Research Centres." Ballast Environmental Consulting Ltd. Report dated April 12, 2011 revised March 2013. Report used with permission by PWGSC.
2. Information was not verified by Amec Foster Wheeler.
3. Refer to attached drawings, Annex B.

Building # 26, Storage Building			
Building description: Single storey, approximately 985 m ² .			
<i>Complete selective abatement of hazardous building materials in poor condition or where removal has been recommended</i>			
Location	Material	Estimated Quantity	Notes
Northwest corner of the threshing room and northeast corner of the furnace room	Cement board (Transite)	11 m	To be removed
Located in lab 1 and offices 2, 3 and 4	VFT (various size and colour)	90 m ²	To be removed
Located in the attic and present as debris in the occupied space	Attic insulation (vermiculite)	540 m ² <i>(within the attic)</i>	To be removed
Located in lab 2 and office 3	Cement board counter tops	14 m ²	To be removed
South wall of threshing room and southwest area of women's washroom	SVG on pipe and walls	Not quantified	To be removed
Located throughout the building (approximately 10 locations)	Gypsum board and joint compound	15 m ²	Removal/repairs to be conducted based on existing site condition
<i>The following hazardous building materials are not anticipated to be removed from Building # 26</i>			
Located in the washrooms, hallway and office 1	VFT (various sizes and colours)	Not quantified	To remain in place
Located in various areas	Fluorescent lighting ballasts (suspected to contain PCBs)	28 ballasts	To remain in place
Cooler area	Mercury containing thermostat	1 thermostat	To remain in place
Located throughout the building	Mercury associated with fluorescent bulbs	28 fixtures	To remain in place
Walk in cooler	Presumed ODS	1 cooler	To remain in place

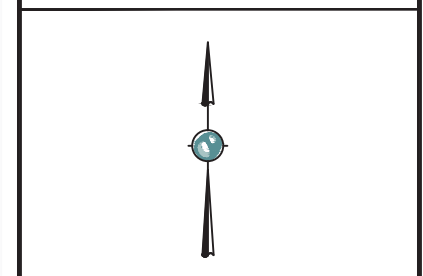
Notes:

1. Information summarized from "Hazardous Materials Investigation, Lacombe, Beaverlodge and Fort Vermillion Research Centres." Ballast Environmental Consulting Ltd. Report dated April 12, 2011 revised March 2013. Report used with permission by PWGSC.
2. Information was not verified by Amec Foster Wheeler.
3. Refer to attached drawings, Annex B.

ANNEX B
DRAWINGS

LEGEND:

- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
- Floor Covering containing Asbestos
- Drywall Mud/Stipple/Wall covering containing Asbestos
- Wall and/or Attic Insulation containing Asbestos
- Pipe/tank insulation containing Asbestos
- Ozone Depleting Substance (ODS)
- ACM Sink Coating
- Radioactive Items
- Mercury
- Lead paint
- Window caulking containing Asbestos
- Asbestos insulation in light fixture



NO.	REVISION	DATE	BY

HAZARDOUS MATERIALS ASSESSMENT

BEAVERLODGE RESEARCH CENTRE
 BEAVERLODGE, ALBERTA

SITE SAMPLING DIAGRAM:
 #10 CANOLA LABORATORY
 (MAIN FLOOR)

SCALE:	NOT TO SCALE	ANNEX B
DATE:	MAY 2016	
DRAWN BY:	MD	FIGURE 1
PROJECT NO.:	WX17835	



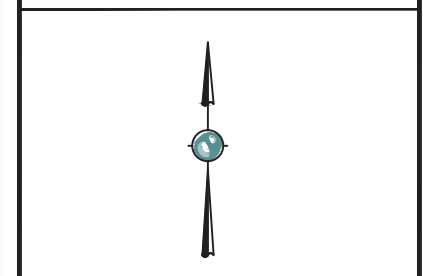
NOTE:

- SITE FEATURE LOCATIONS ARE APPROXIMATE.
- BASE DRAWING FROM HAZARDOUS MATERIALS INVESTIGATION REPORT. BALLAST ENVIRONMENTAL CONSULTING LTD. (APRIL 12, 2011 REV. MARCH 2013). REFER TO REPORT FOR DETAILS.
- INFORMATION NOT VERIFIED BY AMEC FOSTER WHEELER.
- POLYCHLORINATED BIPHENYLS, MERCURY CONTAINING LAMPS, AND SUSPECT VISUAL MOULD ARE NOT SHOWN.

P:\JOB\SIT\7800\SIT\7835\PRW - BEAVERLODGE ABDRAWINGS - MATT\WX17835.DWG

LEGEND:

- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
- Floor Covering containing Asbestos
- Drywall Mud/Stipple/Wall covering containing Asbestos
- Wall and/or Attic Insulation containing Asbestos
- Pipe/tank insulation containing Asbestos
- Ozone Depleting Substance (ODS)
- ACM Sink Coating
- Radioactive Items
- Mercury
- Lead paint
- Window caulking containing Asbestos
- Asbestos insulation in light fixture



NO.	REVISION	DATE	BY

HAZARDOUS MATERIALS ASSESSMENT

BEAVERLODGE RESEARCH CENTRE
 BEAVERLODGE, ALBERTA

SITE SAMPLING DIAGRAM:
 #10 CANOLA LABORATORY
 (2nd FLOOR)

SCALE:	NOT TO SCALE	ANNEX B
DATE:	MAY 2016	
DRAWN BY:	MD	FIGURE 2
PROJECT NO.:	WX17835	



NOTE:
 - SITE FEATURE LOCATIONS ARE APPROXIMATE.
 - BASE DRAWING FROM HAZARDOUS MATERIALS INVESTIGATION REPORT. BALLAST ENVIRONMENTAL CONSULTING LTD. (APRIL 12, 2011 REV. MARCH 2013). REFER TO REPORT FOR DETAILS.
 - INFORMATION NOT VERIFIED BY AMEC FOSTER WHEELER.
 - POLYCHLORINATED BIPHENYLS, MERCURY CONTAINING LAMPS, AND SUSPECT VISUAL MOULD ARE NOT SHOWN.

P:\JOB\S1780\S1780\S17835\PRW - BEAVERLODGE ABDRAWINGS - MATT\WX17835.DWG



LEGEND:

- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
- Floor Covering containing Asbestos
- Drywall Mud/Stipple/Wall covering containing Asbestos
- Wall and/or Attic Insulation containing Asbestos
- Pipe/tank insulation containing Asbestos
- Ozone Depleting Substance (ODS)
- ACM Sink Coating
- Radioactive Items
- Mercury
- Lead paint
- Window caulking containing Asbestos
- Asbestos insulation in light fixture



NO.	REVISION	DATE	BY

HAZARDOUS MATERIALS ASSESSMENT

BEAVERLODGE RESEARCH CENTRE
 BEAVERLODGE, ALBERTA

SITE SAMPLING DIAGRAM:
 #10 CANOLA LABORATORY
 (BASEMENT)

SCALE:	NOT TO SCALE	ANNEX B
DATE:	MAY 2016	
DRAWN BY:	MD	FIGURE 3
PROJECT NO.:	WX17835	



NOTE:

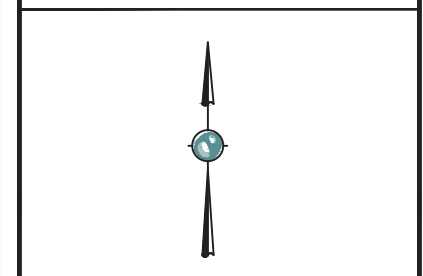
- SITE FEATURE LOCATIONS ARE APPROXIMATE.
- BASE DRAWING FROM HAZARDOUS MATERIALS INVESTIGATION REPORT. BALLAST ENVIRONMENTAL CONSULTING LTD. (APRIL 12, 2011 REV. MARCH 2013). REFER TO REPORT FOR DETAILS.
- INFORMATION NOT VERIFIED BY AMEC FOSTER WHEELER.
- POLYCHLORINATED BIPHENYLS, MERCURY CONTAINING LAMPS, AND SUSPECT VISUAL MOULD ARE NOT SHOWN.

P:\JOB\S1780\S17835\DRAWINGS - BEAVERLODGE ABDRAWINGS - MATTTWX17835.DWG



LEGEND:

- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
- Floor Covering containing Asbestos
- Drywall Mud/Stipple/Wall covering containing Asbestos
- Wall and/or Attic Insulation containing Asbestos
- Pipe/tank insulation containing Asbestos
- Ozone Depleting Substance (ODS)
- ACM Sink Coating
- Radioactive Items
- Mercury
- Lead paint
- Caulking containing Asbestos



NO.	REVISION	DATE	BY

HAZARDOUS MATERIALS ASSESSMENT

BEAVERLODGE RESEARCH CENTRE
 BEAVERLODGE, ALBERTA

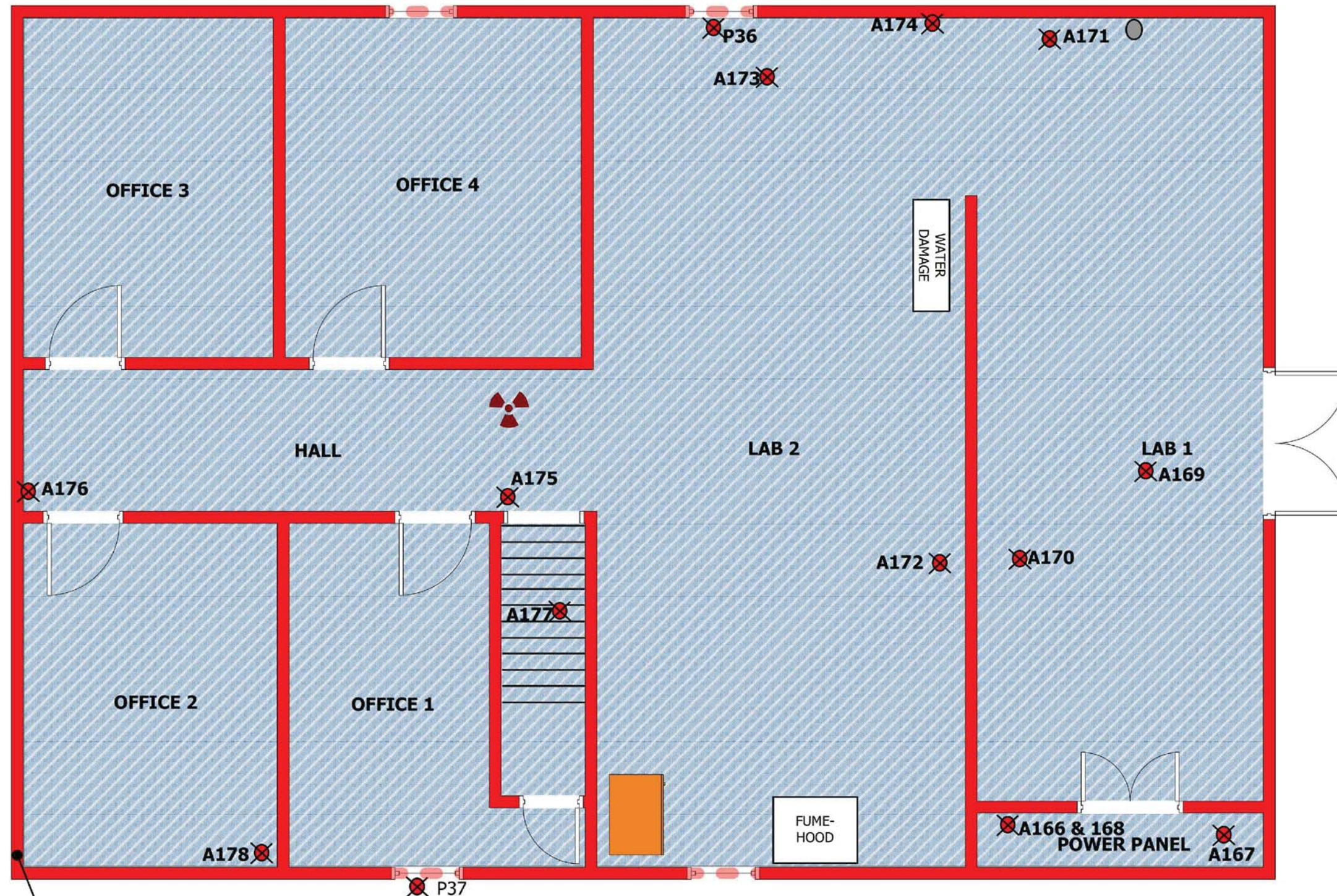
SITE SAMPLING DIAGRAM:
 #14 SOIL RESEARCH BUILDING
 (MAIN FLOOR)

SCALE:	NOT TO SCALE	ANNEX B
DATE:	MAY 2016	
DRAWN BY:	MD	FIGURE 4
PROJECT NO.:	WX17835	



NOTE:
 - SITE FEATURE LOCATIONS ARE APPROXIMATE.
 - BASE DRAWING FROM HAZARDOUS MATERIALS INVESTIGATION REPORT. BALLAST ENVIRONMENTAL CONSULTING LTD. (APRIL 12, 2011 REV. MARCH 2013). REFER TO REPORT FOR DETAILS.
 - INFORMATION NOT VERIFIED BY AMEC FOSTER WHEELER.
 - POLYCHLORINATED BIPHENYLS, MERCURY CONTAINING LAMPS, AND SUSPECT VISUAL MOULD ARE NOT SHOWN.

P:\J0851780\517835\DRAWINGS - BEAVERLODGE ABIDRAWINGS - MATTTWX17835.DWG



LEGEND:

- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
- Floor Covering containing Asbestos
- Drywall Mud/Stipple/ Wall covering containing Asbestos
- Wall and/or Attic Insulation containing Asbestos
- Pipe/tank insulation containing Asbestos
- Ozone Depleting Substance (ODS)
- ACM Sink Coating
- Radioactive Items
- Mercury
- Lead paint
- Caulking containing Asbestos



NO.	REVISION	DATE	BY

HAZARDOUS MATERIALS ASSESSMENT

BEAVERLODGE RESEARCH CENTRE
 BEAVERLODGE, ALBERTA

SITE SAMPLING DIAGRAM:
 #14 SOIL RESEARCH BUILDING
 (2nd FLOOR)

SCALE: NOT TO SCALE
 DATE: MAY 2016
 DRAWN BY: MD
 PROJECT NO.: WX17835

ANNEX B
 FIGURE 5

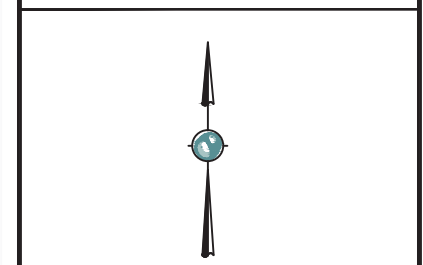
ASBESTOS TRANSITE BOARD
 (WALLS, CEILING AND FLOOR)



NOTE:
 - SITE FEATURE LOCATIONS ARE APPROXIMATE.
 - BASE DRAWING FROM HAZARDOUS MATERIALS INVESTIGATION REPORT. BALLAST ENVIRONMENTAL CONSULTING LTD. (APRIL 12, 2011 REV. MARCH 2013). REFER TO REPORT FOR DETAILS.
 INFORMATION NOT VERIFIED BY AMEC FOSTER WHEELER.
 - POLYCHLORINATED BIPHENYLS, MERCURY CONTAINING LAMPS, AND SUSPECT VISUAL MOULD ARE NOT SHOWN.

LEGEND:

- Sample ID
A = asbestos sample
P = paint sample
- Sampling Location
- Floor Covering containing Asbestos
- Drywall Mud/Stipple/Wall covering containing Asbestos
- Wall and/or Attic Insulation containing Asbestos
- Pipe/tank insulation containing Asbestos
- Ozone Depleting Substance (ODS)
- ACM Sink Coating
- Radioactive Items
- Mercury
- Lead paint
- Caulking containing Asbestos



NO.	REVISION	DATE	BY

HAZARDOUS MATERIALS ASSESSMENT

BEAVERLODGE RESEARCH CENTRE
BEAVERLODGE, ALBERTA

SITE SAMPLING DIAGRAM:
#26 STORAGE

SCALE:	NOT TO SCALE	ANNEX B
DATE:	MAY 2016	
DRAWN BY:	MD	FIGURE 6
PROJECT NO.:	WX17835	



NOTE:
- SITE FEATURE LOCATIONS ARE APPROXIMATE.
- BASE DRAWING FROM HAZARDOUS MATERIALS INVESTIGATION REPORT. BALLAST ENVIRONMENTAL CONSULTING LTD. (APRIL 12, 2011 REV. MARCH 2013). REFER TO REPORT FOR DETAILS.
- INFORMATION NOT VERIFIED BY AMEC FOSTER WHEELER.
- POLYCHLORINATED BIPHENYLS, MERCURY CONTAINING LAMPS, AND SUSPECT VISUAL MOULD ARE NOT SHOWN.

P:\JOB\S11780\S117835\PRW - BEAVERLODGE ABDRAWINGS - MATT\WX17835.DWG

ANNEX C

HAZARDOUS MATERIALS INVESTIGATION

**HAZARDOUS MATERIALS INVESTIGATION
LACOMBE, BEAVERLODGE AND FORT VERMILLION
RESEARCH CENTRES**



Prepared for:

PUBLIC WORKS & GOVERNMENT SERVICES CANADA

Room 1650, 635 8th Ave SW
Calgary, AB T2P 3M3
Tel: (403) 292-4782

Prepared by:



Ballast Environmental Consulting Ltd.
212 Initiative Avenue SE
Calgary, AB T3S 0B7
Tel: 403-452-3110
Fax: 403-452-3133

www.ballastenvironmental.com

(Printed on 100% recycled paper)

April 12, 2011 Revised March 2013

File No. 11166

TABLE OF CONTENTS

	Page No.
EXECUTIVE SUMMARY	v
1.0 INTRODUCTION	
1.1 Study Objective	1
1.2 Scope of Work	1
1.3 Site Description	2
2.0 METHODOLOGY	
2.1 Health and Safety	3
2.2 Asbestos Containing Material	3
2.3 Lead Products	4
2.4 Polychlorinated Biphenyls	5
2.5 Mercury	5
2.6 Ozone Depleting Substances	5
2.7 Radioactive Materials	5
2.8 Miscellaneous Chemicals	6
2.9 Mould	6
3.0 LACOMBE	
3.1 Scope of Work	7
3.2 Site Description	7
3.3 Results	
3.3.1 Asbestos Containing Material	10
3.3.2 Lead Products	17
3.3.3 Polychlorinated Biphenyls	20
3.3.4 Mercury	20
3.3.5 Ozone Depleting Substances	21
3.3.6 Radioactive Materials	21
3.3.7 Miscellaneous Chemicals	21
3.3.8 Mould	22
3.3.9 Phenols	22
3.3.10 Other	22
3.3.11 Summary of Results by Building	23
3.4 Assessing Risk Exposure for Asbestos	28
3.5 Conclusions	31
3.6 Recommendations	35
4.0 BEAVERLODGE	
4.1 Scope of Work	41
4.2 Site Description	41
4.3 Results	
4.3.1 Asbestos Containing Material	49
4.3.2 Lead Products	61
4.3.3 Polychlorinated Biphenyls	64
4.3.4 Mercury	66
4.3.5 Ozone Depleting Substances	66
4.3.6 Radioactive Materials	67
4.3.7 Miscellaneous Chemicals	67
4.3.8 Mould	68



	4.3.9 Other	69
	4.3.10 Summary of Results by Building	70
4.4	Assessing Risk Exposure for Asbestos	78
4.5	Conclusions	85
4.6	Recommendations	92
5.0	FORT VERMILLION	
	5.1 Scope of Work	103
	5.2 Site Description	103
	5.3 Results	
	5.3.1 Asbestos Containing Material	106
	5.3.2 Lead Products	112
	5.3.3 Polychlorinated Biphenyls	114
	5.3.4 Mercury	114
	5.3.5 Ozone Depleting Substances	115
	5.3.6 Radioactive Materials	115
	5.3.7 Miscellaneous Chemicals	115
	5.3.8 Mould	116
	5.3.9 Other	118
	5.3.10 Summary of Results by Building	119
5.4	Assessing Risk Exposure for Asbestos	123
5.5	Conclusions	126
5.6	Recommendations	129
6.0	LIMITATIONS	134

APPENDICES

- Appendix 1: LACOMBE
 - Detailed Room List of Construction Materials
 - Site Diagrams
 - Photographic Log
 - Laboratory Results

- Appendix 2: BEAVERLODGE
 - Detailed Room List of Construction Materials
 - Site Diagrams
 - Photographic Log
 - Laboratory Results

- Appendix 3: FORT VERMILLION
 - Detailed Room List of Construction Materials
 - Site Diagrams
 - Photographic Log
 - Laboratory Results

- Appendix 4: Reference Material



Appendix 5: QA/QC Procedures

Appendix 6: Class C Cost Estimates for Abatement
Lacombe
Beaverlodge
Fort Vermillion

LIST OF TABLES	Page No.
Table 1: Asbestos Analysis Results Summary for Lacombe	10
Table 2: Lead in Paint Analysis Results Summary for Lacombe	17
Table 3: Mercury Results Summary for Lacombe	20
Table 4: ODS Results Summary for Lacombe	21
Table 5: Radioactive Materials Results Summary for Lacombe	21
Table 6: Miscellaneous Chemicals Summary for Lacombe	21
Table 7: Water Damage Results Summary for Lacombe	22
Table 8: Phenols Results Summary for Lacombe	22
Table 9: #2 Residence Hazardous Materials Summary for Lacombe	23
Table 10: #2A Garage Hazardous Materials Summary for Lacombe	23
Table 11: #10 Machine Pole Barn Hazardous Materials Summary for Lacombe	23
Table 12: #21 Administration Hazardous Materials Summary for Lacombe	24
Table 13: #38 Pump House Hazardous Materials Summary for Lacombe	24
Table 14: #38A Beef Unit Garage Hazardous Materials Summary for Lacombe	24
Table 15: #40 Beef Unit Test Barn Hazardous Materials Summary for Lacombe	25
Table 16: #41 Beef Unit Residence Hazardous Materials Summary for Lacombe	25
Table 17: #41A Shed Hazardous Materials Summary for Lacombe	25
Table 18: #52 Machine & Vehicle Repair Hazardous Materials Summary for Lacombe	26
Table 19: #53 Header House Hazardous Materials Summary for Lacombe	26
Table 20: #54 Animal Hospital Hazardous Materials Summary for Lacombe	27
Table 21: Assessing Risk Exposure	28
Table 22: Determining Level of Control Required	29
Table 23: ACM Risk of Exposure for Lacombe	29
Table 24: Extent and Recommendations of ACM for Lacombe	35
Table 25: Extent and Recommendations of Lead Based Paint for Lacombe	37
Table 26: Asbestos Analysis Results Summary for Beaverlodge	44
Table 27: Lead in Paint Analysis Results Summary for Beaverlodge	61
Table 28: PCB Results Summary for Beaverlodge	65
Table 29: Mercury Results Summary for Beaverlodge	66
Table 30: ODS Results Summary for Beaverlodge	66
Table 31: Radioactive Results Summary for Beaverlodge	67
Table 32: Miscellaneous Chemicals Summary for Beaverlodge	67
Table 33: Mould/Water Damage Results Summary for Beaverlodge	68
Table 34: #1 Administration Office Hazardous Materials Summary for Beaverlodge	70
Table 35: #10 Canola Laboratory Hazardous Materials Summary for Beaverlodge	71
Table 36: #14 Soils Research Building Hazardous Materials Summary for Beaverlodge	72
Table 37: #15 Ecology Building Hazardous Materials Summary for Beaverlodge	73
Table 38: #17 Carpenter Shop Hazardous Materials Summary for Beaverlodge	74
Table 39: #18 Apiculture Laboratory Hazardous Materials Summary for Beaverlodge	74
Table 40: #25 Honey Extraction Building Hazardous Materials Summary for Beaverlodge	75
Table 41: #26 Storage Hazardous Materials at Summary for Beaverlodge	75
Table 42: #35 Garage Hazardous Materials Summary for Beaverlodge	76
Table 43: #36 Forage Building Hazardous Materials Summary for Beaverlodge	76
Table 44: #45 Chemical Storage Hazardous Materials Summary for Beaverlodge	77
Table 45: Assessing Risk Exposure	78



LIST OF TABLES	Page No.
Table 46: Determining Level of Control Required	79
Table 47: ACM Risk of Exposure for Beaverlodge	79
Table 48: Extent and Recommendations of ACM for Beaverlodge	92
Table 49: Extent and Recommendations of Lead Based Paint for Beaverlodge	97
Table 50: Extent and Recommendations of PCB Containing Light Ballasts for Beaverlodge	98
Table 51: Extent and Recommendations of Mercury Containing Materials for Beaverlodge	99
Table 52: Extent and Recommendations of Ozone Depleting Substances for Beaverlodge	100
Table 53: Extent and Recommendations of Radioactive Materials for Beaverlodge	100
Table 54: Extent and Recommendations of Mould Growth and Water Damage for Beaverlodge	101
Table 55: Asbestos Analysis Results Summary for Fort Vermillion	106
Table 56: Lead in Paint Analysis Results Summary for Fort Vermillion	112
Table 57: Mercury Results Summary for Fort Vermillion	114
Table 58: ODS Results Summary for Fort Vermillion	115
Table 59: Miscellaneous Chemicals Summary for Fort Vermillion	116
Table 60: Mould/Water Damage Results Summary for Fort Vermillion	117
Table 61: #2 Administration Office Hazardous Materials Summary for Fort Vermillion	119
Table 62: #14 Drying and Threshing Shed Hazardous Materials Summary for Fort Vermillion	119
Table 63: #23 Workshop and Office Hazardous Materials Summary for Fort Vermillion	120
Table 64: #33 Processing & Carpenter Shop Hazardous Materials Summary for Fort Vermillion	120
Table 65: #37 Drying Shed Hazardous Materials Summary for Fort Vermillion	120
Table 66: #57 Sewage Lift House Hazardous Materials Summary for Fort Vermillion	121
Table 67: #60 Duplex House Hazardous Materials Summary for Fort Vermillion	121
Table 68: #60A Duplex Garage Hazardous Materials Summary for Fort Vermillion	122
Table 69: #62 Weigh Scale Hazardous Materials Summary for Fort Vermillion	122
Table 70: Pump House Hazardous Materials Summary for Fort Vermillion	122
Table 71: Assessing Risk Exposure	123
Table 72: Determining Level of Control Required	124
Table 73: ACM Risk of Exposure for Fort Vermillion	124
Table 74: Extent and Recommendations of ACM for Fort Vermillion	129
Table 75: Extent and Recommendations of Lead Based Paint	130



EXECUTIVE SUMMARY

Ballast Environmental Consulting Ltd. (Ballast Environmental) was contracted by Professional & Technical Services, Real Property Services Branch Public Works & Government Services Canada (PWGSC) to conduct three Hazardous Building Material Assessments at the Lacombe, Beaverlodge and Fort Vermillion Research Centers. The Lacombe Research Center is located at 6000 C&E Trail in Lacombe, AB and the assessment was conducted from January 17-21, 2011 and February 10, 2011. The Beaverlodge Research Center address is PO Box 29 in Beaverlodge, AB and the assessment was conducted from February 4-9, 2011. The Fort Vermillion Research Center address is PO Box 126, Fort in Fort Vermillion, AB and the assessment was conducted from February 1-3, 2011. The information obtained will be used for management, demolition, renovation and abatement purposes.

The study objective includes:

- to provide a Hazardous Materials Report as per the Terms of Reference with the following information included in the report:
 - Site investigation, sample collection/location and laboratory analysis
 - Assessing the degree of risk/health hazard to workers
 - Estimating types, quantities and locations of hazardous materials and preparing a report in tabular format
 - Specifying QA/QC procedures and laboratory investigation methodologies

The hazardous materials assessment includes:

- assessment and sampling of suspect materials which may contain asbestos and lead based paint;
- assessment of polychlorinated biphenyls (PCB), mercury, ozone-depleting substances (ODS), radioactive materials, mould;
- analysis and reporting of findings with recommendations.

Summary of Findings for Lacombe

ASBESTOS

ACM (asbestos containing material)	EXTENT	IMPACT*
No Issues (currently)		Caution
#2 Residence		
Vermiculite Insulation	Attic (200 m ²)	The vermiculite insulation is undisturbed. If the asbestos containing vermiculite remains undisturbed there is little risk to occupants. If personnel are required to access this area, they must wear proper personal protective equipment (PPE) to avoid potential exposure to airborne fibres. Abatement should be considered where maintenance work is required that may disturb the vermiculite.
Drywall Mud	Entire main floor Estimated: 334 m ²	The majority of the drywall mud was in good condition. If the drywall mud is in good condition and not disturbed there is low risk of exposure. If the condition of the drywall deteriorates, or there are renovations, there is a higher risk of exposure and the drywall mud should first be abated.
#21 Administration		
Floor Tiles	3 offices (green/black tiles) Estimated: 30 m ²	The floor tiles are in good condition. As long as the tiles are in good condition, there is low risk. Any damaged tiles should be removed and replaced.



ACM (asbestos containing material)	EXTENT	IMPACT*
Elbow/pipe Insulation	Building mechanical areas	There was exposed pipe insulation in corridor 4. There is a high risk to occupants when the ACM wrap is damaged or the ACM is exposed. All damaged or exposed ACM insulation should be abated.
#38A Beef unit garage		
Floor Tiles	Room 1 (Brown tiles) Estimated: 0.5 m ²	The tiles are in good condition and located under a furnace. As long as the tiles are in good condition, there is low risk. Any damaged tiles should be removed and replaced.
Vermiculite Insulation	Attic (125 m ²)	The vermiculite insulation is undisturbed. If the asbestos containing vermiculite remains undisturbed there is little risk to occupants. If personnel are required to access this area, they must wear proper personal protective equipment (PPE) to avoid potential exposure to airborne fibres. Abatement should be considered where maintenance work is required that may disturb the vermiculite.
#40 Beef unit test barn		
Exterior Caulking	Beef test barn-south windows 41 windows	The exterior caulking is located in a relatively unused area but it is in poor condition. There is little risk to the occupants.
#41 Beef unit residence		
Vermiculite Insulation	Attic (140 m ²)	The vermiculite insulation is undisturbed. If the asbestos containing vermiculite remains undisturbed there is little risk to occupants. If personnel are required to access this area, they must wear proper personal protective equipment (PPE) to avoid potential exposure to airborne fibres. Abatement should be considered where maintenance work is required that may disturb the vermiculite.
#52 Machine and vehicle repair		
Window Glazing	South window 1 window	The exterior glazing is located in a relatively unused area and is in fair condition. As long as there is no disturbance to the ACM there is low risk to occupants.
Floor Tiles	Main floor office (off- white tiles) Estimated: 8 m ²	The tiles were in average condition. As long as the tiles are in good/average condition, there is low risk. If any tiles become damaged tiles should be removed and replaced.
#53 Header house		
Transite Boards	Boiler room Estimated: 115 m ²	The panels are in good condition. The panel boards are only accessible by maintenance staff. They are low risk as long as they are not disturbed by cutting, hammering, drilling, etc. All maintenance staff should be educated and trained regarding this ACM.
Floor Tiles	AV room 2E, Office 3E (Brown streak tiles) Estimated: 120 m ²	The tiles were in average condition. As long as the tiles are in good/average condition, there is low risk. If any tiles become damaged tiles should be removed and replaced.
Sink insulation	AV room 2E Estimated: 1 sink	The sink insulation is in good condition and was observed in a cabinet. There is low risk as long as the insulation is not disturbed. Controls should be implemented to ensure the non-disturbance of this ACM, including the restriction of storage of items under the sinks.



ACM (asbestos containing material)	EXTENT	IMPACT*
#54 Animal hospital		
Vermiculite Insulation	Animal hospital (attic: 100 m ²) (walls: 72 m ²)	There is a high risk to occupants if the ACM is exposed and disturbed. ACM is present in the attic and walls. The animal hospital walls and ceiling are compromised and the vermiculite is leaking onto the floor. This area has a high risk of exposure and should be abated as soon as possible. If the area cannot be abated, the vermiculite should be cleaned up (by qualified personnel) and the compromised walls and ceiling repaired before entry of unprotected personnel.
Floor Tiles	Entrance floor (off-white tiles) Estimated: 2 m ²	As long as the tiles are in good condition, there is low risk. The majority of the tiles were in poor condition and lifting from the floor. These tiles should be abated.

*NOTE: any ACM materials must only be handled/abated by trained and experienced personnel.

Only ACM in poor condition (i.e. damaged or friable) or that could be disturbed during renovation, maintenance, or other activities, requires abatement.

Asbestos abatement must be carried-out by qualified personnel who are experienced and trained in asbestos removal. Air monitoring and inspections must be completed during the abatement to ensure the safety of the abatement personnel and any unprotected persons in the area.

A management plan needs to be developed to address any ACM remaining on site.

An inventory of all asbestos containing materials should be maintained, and updated whenever any ACM is abated. An inspection of all ACM should be conducted on a regular basis, at least annually, to identify any change in the condition of the ACM.

Maintenance staff and contractors should be made aware, either by labeling of ACM, or by training, of the location of existing ACM, so that is not accidentally disturbed during any renovation or maintenance work.

LEAD

LEAD PAINT	EXTENT	IMPACT*
#2 Residence		
Exterior Dark green	Trim Total Estimate: 2 man doors and 10 windows	There is little risk to occupants as long as the paint remains in good to fair condition and is not disturbed. Disturbance of lead based paint causes the release of lead in the dust. If the lead based paint is to be disturbed, then the workers must wear appropriate PPE.
#2A Garage		
Exterior Dark green	Trim Total Estimate: 1 man door, 1 garage door and 2 windows	
#10 Machine pole barn		
Exterior White	Exterior paint on barn Total Estimate: 650 m ²	
#21 Administration		
Exterior White	Window frames and door frames Total Estimate: 100 frames	
#38 Beef unit pump house		
Exterior White	Exterior Total Estimate: 50 m ²	



LEAD PAINT	EXTENT	IMPACT*
#38A Beef unit office and garage		When there is disposal of the lead based paint materials the landfill must be notified of the lead content of the paint. The landfill may require abatement or further testing of the lead paint before disposal, if the paint is in poor condition.
Exterior White	Exterior Total Estimate: 150 m ²	
#41A Beef unit residence shed		
Exterior White	Exterior Total Estimate: 40 m ²	
#54 Animal hospital		
Interior White	All interior walls excluding the cooler Total Estimate: 200 m ²	

*NOTE: any lead based materials must only be handled/abated by trained and experienced personnel.

PPE: personal protective equipment

PCBs

There were no suspect materials observed which may contain PCBs.

MERCURY

Fluorescent light tubes in the fluorescent light fixtures may contain varying amounts of mercury vapor, even newly purchased tubes/bulbs. There are several hundred of fluorescent tubes and some compact fluorescent bulbs throughout the buildings. All fluorescent lights should be stored to protect from breakage and recycled accordingly.

There was one mercury containing thermostat in the #2 Residence, three in the #21 Administration Building, two in #52 Vehicle & Machine Repair, one in #53 Header House and one in #54 Animal Hospital.

As long as the mercury containing materials are in good condition and not damaged and mercury remains enclosed (not leaking) there is low risk to occupants. Any mercury items should be recycled and disposed of according to current regulations.

A best practice would be to replace the mercury containing thermostats with non-mercury containing units. These newer units are also typically more energy efficient than older mercury-containing units.

OZONE DEPLETING SUBSTANCES

Many of the ODS in the building have already been inventoried and many have been removed. One fridge was located in the #38 Beef unit pumphouse and the #52 Machine and vehicle repair shop. A chiller for the cooler is located in the #54 Animal hospital. The ODS units should be recycled/recovered by a qualified and experienced worker according to Ozone Depleting Substances and Halocarbons Regulations.

RADIOACTIVE MATERIALS

Three radioactive smoke detectors were found on the subject site, one in #2 Residence and two in the #41 Beef unit residence and.

When radioactive materials are not in use and are to be disposed of they should be disposed of according to the current regulations of the Nuclear Safety Control Act and Nuclear Substances and Radiation Devices Regulations.



Radioactive smoke detectors, in quantities of 10 or less, may be disposed in normal household garbage.

MISCELLANEOUS CHEMICALS

All miscellaneous chemicals need to be disposed of and stored according to current regulations and manufactures recommendations.

MOULD

Water damage which may lead to mould growth, was observed at the following locations in the #21 Administration building: attic (leak on west side), 118 office (south wall) and 120 office (south wall).

It is recommended that the source of the water leakage be determined and repaired, and any water damaged materials which are potential sources of mould growth, be abated.

PESTS

#2 Residence has mouse feces in the attic and a mouse infestation in the #2A garage. #54 Animal Hospital has bird feces in the attic.

A qualified pest control contractor should be brought in to eliminate the problem. If this involves entering attic spaces, or disturbing ACM vermiculite insulation, the contractor will need to ensure that the workers are adequately protected from exposure to airborne fibres. The feces should be cleaned up by experienced and trained personnel.

Since the affected attic areas contain ACM vermiculite, the cleaning should only be done by qualified personnel as an ACM abatement activity.

#54 Animal Hospital attic space should be boarded off or wire put up to restrict the birds entry into this area.

SPILLS/STAINS

#10 Machine Pole Barn has some suspected hydrocarbon staining on the dirt floor. Phase I Environmental Site Assessments should be completed to address this stain and other areas of potential contamination.

If any other suspect materials become exposed during demolition or maintenance activities, the suspect materials should be tested.

Procedures for hazardous materials identified in this report should be developed and communicated to anyone who may come in contact with these materials. Also, anyone who may come in contact with hazardous materials should be informed on how to identify where the hazards may be present and how to proceed if they observe some suspect materials.

A management and monitoring plan should be developed and implemented to address the hazardous materials identified in this report and any possible future hazardous materials which may be encountered.



Summary of Findings for Beaverlodge

ASBESTOS

ACM	EXTENT	IMPACT*
No Issues (currently)		Caution
#1 Administration Office		
Drywall Mud	Half of building Estimated: 580 m ²	The majority of the drywall mud was in good condition. If the drywall mud is in good condition and not disturbed there is low risk of exposure. If the condition of the drywall deteriorates, or there are renovations, there is a higher risk of exposure and it should be abated.
Floor Tiles	Basement hallway (brown/white tiles) Estimated: 8 m ²	As long as the tiles are in good to fair condition, there is low risk. The majority of the tiles were in fair condition and pose a low risk of exposure. If the condition of the tiles deteriorates, or there are renovations, there is a higher risk of exposure and they should be abated.
Sheet Linoleum	Basement (brown squares) Estimated: 100 m ² 2 nd Floor (brown squares) Estimated: 30 m ²	The brown squares flooring in the basement conference room, hall and kitchen along with the 2 nd floor offices #18 and #20 were in good condition and therefore only requires being controlled.
Sheet Linoleum	Shoe rack (brown) Estimated: 1 m ² Main Floor (brown squares) Estimated: 30 m ²	The brown linoleum shoe rack and the brown squares flooring (storage rooms on the main floor) are in poor condition and present a high risk of exposure requiring immediate abatement.
Sink insulation	Basement dark room and kitchen Estimated: 2 sinks	The sink insulation is in good condition and was observed in a cabinet. There is low risk as long as the insulation is not disturbed. Controls should be implemented to ensure the non-disturbance of this ACM, including the restriction of storage of items under the sinks or educating occupants using this space.
Ceiling Texture	Main floor entrance, east hallway and office 3 Estimated: 85 m ²	The ceiling texture is in good condition, is highly friable and is moderately accessible. It also has a low asbestos content. The risk of exposure is moderate and should be controlled.
Stucco	Exterior Estimated: 440 m ²	The stucco is in good condition, is highly friable and is moderately accessible. It also has a low asbestos content. The risk of exposure is moderate and should be controlled.
#10 Canola Laboratory		
Floor Tiles	2 nd floor office 5 (brown tiles) Estimated: 20 m ²	As long as the tiles are in good condition, there is low risk. The brown tiles on the 2 nd floor were in good condition and pose a low risk of exposure. If the condition of the tiles deteriorates, or there are renovations, there is a higher risk of exposure and should be abated.
Floor Tiles	Basement storage 6 & 7 and hallways (light and dark brown) Estimated: 45 m ²	The light and dark brown tiles in the basement were in poor condition. This presents a high risk of exposure, requiring immediate abatement.



ACM	EXTENT	IMPACT*
Drywall Mud	Entire main floor, 2 nd floor and 2 rooms in basement Estimated: 1600 m ²	The majority of the drywall mud was in good condition. If the drywall mud is in good condition and not disturbed there is low risk of exposure. If the condition of the drywall deteriorates, or there are renovations, there is a higher risk of exposure and it should be abated. The drywall in the basement was water damaged and should be abated immediately
Pipe Insulation	Basement coolers (storage 4 & 5) Estimated: 8 m	The pipe insulation around the coolers is currently in fair condition. However, it was not enclosed with a pipe wrap and therefore accessible. There is a high risk to occupants if the ACM wrap is damaged or the ACM is exposed. This exposed insulation should be abated immediately
Light Insulation	Basement-west hallway Estimated: 1 Main floor-W-N lab, NE & main entrance, storage room Estimated: 4 2 nd floor-hallway, storage, office 4, 8, 10 and stairway Estimated: 7	The light insulation is in good condition, is highly friable and is not accessible. It also has an extremely high asbestos content. The risk of exposure is moderate and should be controlled.
Interior Caulking	Basement coolers (storage 4 & 5) Estimated: 1 m	The caulking is located in a relatively unused area and is in good condition. There is little risk to the occupants.
Boiler Insulation	Basement furnace room boiler Estimated: 1 unit (1.5 m ³)	The insulation is in poor condition, is highly friable and is moderately accessible. It also has high asbestos content. The risk of exposure is high and the insulation should be removed immediately.
#14 Soils Research Building (demolition)		
Floor Tiles without asbestos mastic	1 st floor entry (gray 12x12) Estimated: 20 m ² 2 nd floor-power panel room (dark gray 9x9) Estimated: 8 m ²	As long as the tiles are in good condition, there is low risk. The majority of the tiles were in fair condition and pose a low risk of exposure. These floor tiles do not need to be abated prior to demolition.
Floor tiles with asbestos mastic	1 st floor-SW lab, 2 nd floor- all (white/gray 9x9) Estimated: 170 m ² 1 st floor-1 st floor-NW lab, under stairs (light & dark brown 9x9) Estimated: 55 m ²	As long as the tiles are in good condition, there is low risk. The majority of the tiles were in fair condition and pose a low risk of exposure. These floor tiles must be abated before demolition.
Sheet Linoleum	1 st floor-NE lab, hallway, growth chamber room, washroom (brown squares) Estimated: 84 m ²	The brown squares flooring is in poor condition and presents a high risk of exposure requiring immediate abatement. This linoleum needs to be abated prior to demolition



ACM	EXTENT	IMPACT*
Transite Boards	2 nd floor-walls, ceiling, floor Estimated: 600 m ²	<p>The panel majority boards are only moderately accessible and are in good condition. They are low risk as long as they are not disturbed by cutting, hammering, drilling, etc. All maintenance staff should be educated and trained regarding this ACM.</p> <p>The 2 transite boards leaning on the wall of SW lab and on the 2nd floor in the SW corner of the hall are both highly accessible and pose a risk.</p> <p>All the transite board needs to be abated before demolition.</p>
Sink insulation	1 st floor-SW lab (bronze) 1 st floor-NE lab (gray) Estimated: 4 sinks	<p>The sink insulation is in good condition and was observed in a cabinet. There is low risk as long as the insulation is not touched or disturbed.</p> <p>The sink insulation (or entire sink unit) needs to be abated before demolition.</p>
Drywall Mud	1 st floor-SW lab, NW lab, furnace room Estimated: 200 m ²	<p>The majority of the drywall mud was in fair condition. If the drywall mud is in good condition and not disturbed there is low risk of exposure.</p> <p>All drywall needs to be abated before demolition.</p>
#15 Ecology Building		
Sink insulation	1 st floor-S lab (white/silver) Estimated: 2 sinks	<p>The sink insulation is in good condition and was observed in a cabinet. There is low risk as long as the insulation is not disturbed. Controls should be implemented to ensure the non-disturbance of this ACM, including the restriction of storage of items under the sinks or educating occupants using this space.</p>
Floor Tiles	1 st floor-north & south lab, office, entry (blue/white 12x12) Estimated: 90 m ² 1 st floor-north & south storage, washroom, hallway (white/gray 9x9) Estimated: 60 m ²	<p>As long as the tiles are in good condition, there is low risk. The tiles were in fair to good condition and pose a low risk of exposure. If the condition of the tiles deteriorates, or there are renovations, there is a higher risk of exposure and it should be abated.</p>
Countertops	1 st floor-N lab, 2 nd floor-north side adj. to stairwell (gray) Estimated: 3.3 m ² 2 nd floor-east side adj. to stairwell (green) Estimated: 0.84 m ²	<p>The countertops ranged in condition from poor to good and all are highly accessible. They also have a high asbestos content and can be damaged. The risk of exposure is high for all ACM containing countertops and they should be immediately abated.</p>
Drywall Mud	1 st floor-furnace room (yellow) Estimated: 38 m ²	<p>The drywall mud was in good condition. If the drywall mud is in good condition and not disturbed there is low risk of exposure. If the condition of the drywall deteriorates, or there are renovations, there is a higher risk of exposure and should be abated.</p>



ACM	EXTENT	IMPACT*
#17 Carpenter Shop		
Vermiculite Insulation	Attic Estimated: 225m ²	The insulation leaking out of the ceiling in the storage area above the office does pose a high risk of exposure and should be abated immediately. The vermiculite insulation is undisturbed in the main portion of the ceiling. If the asbestos containing vermiculite remains undisturbed there is little risk to occupants. If personnel are required to access this area, they must wear proper personal protective equipment (PPE) to avoid potential exposure to airborne fibres. Abatement should be considered where maintenance work is required that may disturb the vermiculite.
Drywall Mud	Entrance hallway, office, utility room, washroom, ½ walls in paint storage room Estimated: 164 m ²	The drywall mud was in good condition. If the drywall mud is in good condition and not disturbed there is low risk of exposure. If the condition of the drywall deteriorates, or there are renovations, there is a higher risk of exposure and it should be abated.
Floor Tiles	Office (gray 12x12) Estimated: 16 m ² Washroom (gray 9x9) Estimated: 6 m ²	The floor tiles were in good condition. As long as the tiles are in good condition, there is low risk. Any damaged tiles should be removed and replaced.
Transite Boards	Leaning against wall (2) Estimated: 2.16 m ²	The 2 transite boards leaning on the wall are highly accessible, non-functional and are in poor condition posing an immediate risk. These boards should be removed.
Light Insulation	Incandescent light fixture stored in crawl space above office Estimated: 1	The light insulation is in good condition, is highly friable and is not accessible. It also has a high asbestos content. The risk of exposure is moderate and should be controlled.
#18 Apiculture Laboratory		
Interior Caulking	Basement coolers (storage 1-4) Estimated: 2 m	The caulking has a moderate to high asbestos content, low friability and is in good condition. As long as the condition of the caulking does not deteriorate there is a low risk of exposure.
Vermiculite Insulation	Attic Estimated: 110 m ²	The vermiculite insulation is undisturbed. If the asbestos containing vermiculite remains undisturbed there is little risk to occupants. If personnel are required to access this area, they must wear proper personal protective equipment (PPE) to avoid potential exposure to airborne fibres. Abatement should be considered where maintenance work is required that may disturb the vermiculite.
#26 Storage		
Transite Boards	NW corner of the threshing room & NE corner of the furnace room Estimated: 11 m	They are low risk as long as they are not disturbed by cutting, hammering, drilling, etc. All relevant staff should be educated and trained regarding this ACM.
Floor Tiles	Washrooms, hallway, office 4 (green 9x9) Estimated: 50 m ² Lab 1 and office 2 & 3 Estimated : 30m ²	The tiles are in poor condition and pose a medium risk. The damaged tiles should be immediately abated and replaced.



ACM	EXTENT	IMPACT*
Vermiculite Insulation	Attic Estimated: 540 m ²	High risk to occupants if the ACM is exposed and disturbed. This insulation is disturbed by the rodent activity and storage of miscellaneous items in the attic. There is insulation leaking from the ceiling into certain rooms, where there is a high risk of exposure. There is also water damage on the ceiling which is holding the ACM in place. This ACM should be abated immediately.
Drywall Mud	Entire building (walls & ceiling) Estimated: 1210 m ²	The drywall mud was in good condition with the exception of certain areas with water damage. If the drywall mud is in good condition and not disturbed there is low risk of exposure. If the condition of the drywall deteriorates, or there are renovations, there is a higher risk of exposure and should be abated. The drywall mud which is in is in poor condition (water damaged) can lead to a high risk of exposure and should be abated.
Counter Top	Lab 2, office 3 (gray) Estimated: 14 m ²	The countertops were in good condition and are highly accessible. They also have a high asbestos content and can be damaged. The risk of exposure is high for all ACM containing countertops and they should be immediately abated.
#35 Garage		
Vermiculite	Transecting center portion of shop (brown/gray cinder block) Estimated: 80 m ²	This insulation is contained within the cinderblock wall and is in good condition. There is only a high risk to occupants if the ACM is exposed and disturbed. If the vermiculite remains undisturbed there is little risk to occupants. However, if there is to be any demolition to the wall, the vermiculite should be abated first.

*NOTE: any ACM materials must only be handled/abated by trained and experienced personnel.

Only ACM in poor condition (i.e. damaged or friable) or that could be disturbed during renovation, maintenance, or other activities, requires abatement.

Asbestos abatement must be carried-out by qualified personnel who are experienced and trained in asbestos removal. Air monitoring and inspections must be completed during the abatement to ensure the safety of the abatement personnel and any unprotected persons in the area.

A management plan needs to be developed to address any ACM remaining on site.

An inventory of all asbestos containing materials should be maintained, and updated whenever any ACM is abated. An inspection of all ACM should be conducted on a regular basis, at least annually, to identify any change in the condition of the ACM.

Maintenance staff and contractors should be made aware, either by labeling of ACM, or by training, of the location of existing ACM, so that is not accidentally disturbed during any renovation or maintenance work.



LEAD

LEAD PAINT	EXTENT	IMPACT*
#1 Administration Office		
Exterior White	Doors frames and window trim Total Estimate: 3 doors and 42 windows	<p>There is little risk to occupants as long as the paint remains in good to fair condition and is not disturbed. Disturbance of lead based paint causes the release of lead in the dust.</p> <p>If the lead based paint is to be disturbed, then the workers must wear appropriate PPE.</p> <p>When there is disposal of the lead based paint materials the landfill must be notified of the lead content of the paint. The landfill may require abatement or further testing of the lead paint before disposal, if the paint is in poor condition.</p>
Interior Black	Basement dark room Total Estimate: 30 m ²	
#10 Canola Laboratory		
Interior White/yellow	Basement storage rooms 1, 2, 3 and 9 Total Estimate: 120 m ²	
Exterior White	Door frames and window trim Total Estimate: 4 doors and 38 windows	
#14 Soils Research Building (demolition)		
Exterior White	Door frames and window trim Total Estimate: 3 doors and 14 windows	
#15 Ecology Building		
Interior White	2 nd floor walls and ceilings Total Estimate: 150 m ²	
#17 Carpenter Shop		
Exterior Blue	Exterior Total Estimate: 350 m ²	
#18 Apiculture Building		
Exterior White	Door frames, window trim and siding Total Estimate: 110 m ²	

*NOTE: any lead based materials must only be handled/abated by trained and experienced personnel.

PCBs

PCB	EXTENT	IMPACT*
#10 Canola Laboratory		
Fluorescent Light Ballasts	Second floor S.W. office and lunch room (*leaking) Total Estimate: 3	<p>As long as the PCB containing fluorescent light ballasts are in good condition and not damaged and PCBs remain enclosed (not leaking) there is low risk to occupants.</p> <p>It is recommended all leaking fluorescent light ballasts are removed and disposed immediately.</p>
#14 Soil Research Building		
Fluorescent Light Ballasts	Main floor S.W. lab (*2 leaking) and second floor labs one and two (*1 leaking) Total Estimate: 8	
#17 Carpenter Shop		
Fluorescent Light Ballasts	Total Estimate: 1	
#26 Storage		
Fluorescent Light Ballasts	Total Estimate: 28	



MERCURY

MERCURY	EXTENT	IMPACT*
#10 Canola Laboratory		<p>As long as the mercury containing materials are in good condition and not damaged and mercury remains enclosed (not leaking) there is low risk to occupants.</p> <p>Any mercury items should be recycled and disposed according to current regulations.</p>
Thermostats	1 st floor hallway Total Estimate: 1	
#14 Soils Research Building		
Thermostats Thermometers	1 st floor hallway and 2 nd floor lab 1 1 st floor growth chamber Total Estimate: 2 thermostats and 2 thermometers	
#15 Ecology Building		
Thermostats	1 st floor hallway Total Estimate: 1	
#17 Carpenter Shop		
Thermostats	N.W. corner of shop Total Estimate: 1	
#25 Honey Extraction Building		
Thermostats	Main area on west wall Total Estimate: 1	
#26 Storage		
Thermostats Thermometers	Air drying room Cooler Total Estimate: 1 thermostat and thermometers	
#36 Forage Building		
Thermometers	Lab, lunch room and cool room Total Estimate: 3	
#45 Chemical		
Thermostats	Center room Total Estimate: 1	

OZONE DEPLETING SUBSTANCES

ODS	EXTENT	IMPACT*
#1 Administration		<p>The ODS units should be recycled/recovered by a qualified and experienced worker according to ozone depleting substance and halocarbons regulations.</p>
Mini-fridge	Main floor storage Total Estimate: 1 (1 oz R12)	
#10 Canola Laboratory		
Fridges Incubators	2 nd floor office 2 Total Estimate: 1 fridge (5 oz R12), 1 fridge (5.25 oz R12), and 3 incubators (27 oz R12 total)	
#14 Soils Research Building		
Fridges Growth Chamber	1 st floor growth chamber room, 1 st floor N.W. lab and 2 nd floor lab 2 Total Estimate: 1 growth chamber (unknown amount R12), 1 fridge (5 oz R12), 1 fridge (4.2 oz R12) and 1 fridge (4.75 oz R12)	
#15 Ecology Building		
Fridge Freezer	Total Estimate: 1 suspect fridge and 1 suspect freezer	
#18 Apiculture Laboratory		
Freezer	Total Estimate: 1 freezer (unknown R12 amount)	
#36 Forage Building		
Fridges Freezers	Total Estimate: 1 fridge (7.1 oz R12), 1 fridge (7.4 oz R12) and freezer (8.0 oz R12)	



RADIOACTIVE MATERIALS

RADIOACTIVE MATERIAL	EXTENT	IMPACT*
#1 Administration		When radioactive materials are not in use and are to be disposed of they should be disposed of according to the current regulations of the Nuclear Safety Control Act and Nuclear Substances and Radiation Devices Regulations.
Smoke detectors	Basement hallway, main floor hallway and 2 nd floor east hallway Total Estimate: 3	
#14 Soils Research Building		
Smoke detector	2 nd floor hallway Total Estimate: 1	
#18 Apiculture Laboratory		
Smoke detector	Basement under stairs on shelf Total Estimate: 1	
#35 Garage		Radioactive smoke detectors, in quantities of 10 or less, may be disposed in normal household garbage.
Smoke detectors (stored in a box)	2 nd floor north side shelving Total Estimate: 7	

MISCELLANEOUS CHEMICALS

All miscellaneous chemicals need to be disposed and stored according to current regulations and manufactures recommendations.

MOULD

MOULD/WATER DAMAGE	EXTENT	IMPACT*
#10 Canola Laboratory		It is recommended that the source of the water leakage be determined and repaired, and any water damaged materials which are potential sources of mould growth, be abated. The areas with visible 'suspect' mould growth should be abated immediately.
Water damage Mould	Basement and main floor storage room Total Estimate: 190m ²	
#14 Soils Research Building		
Water damage	1 st floor furnace room, 1 st floor N.W. lab and 2 nd Lab 2 Total Estimate: 3.5m ²	
#15 Ecology Building		
Water damage	Chimney areas Total Estimate: 1 m ²	
#17 Carpenter Shop		
Water damage	Basement area Total Estimate: unknown	
#25 Honey Extraction		
Water damage	Ceiling tile Total Estimate: 0.3 m ²	
#26 Storage		
Water damage Mould	Threshing room, office 1, seed storage room, furnace room, air drying room, men's washroom, women's washroom, main hallway and attic Total Estimate: 4 m ² mould and 7 m ² water damage	

PESTS

#1 Administration Office had a significant amount of squirrels and mice disturbing the ACM vermiculite. A qualified pest control contractor should be brought in to eliminate the problem. If this involves entering attic spaces, or disturbing ACM vermiculite insulation, the contractor will need to ensure that the workers are adequately protected from exposure to airborne fibres. The feces should be cleaned up by experienced and trained personnel.



If any other suspect materials become exposed during demolition or maintenance activities, the suspect materials should be tested.

Procedures for hazardous materials identified in this report should be developed and communicated to anyone who may come in contact with these materials. Also, anyone who may come in contact with hazardous materials should be informed on how to identify where they may be present, and how to proceed if they observe some suspect materials.

A management and monitoring plan should be developed and implemented to address the hazardous materials identified in this report and any possible future hazardous materials which may be encountered.

Summary of Findings for Fort Vermillion

ASBESTOS

ACM	Extent	Impact*
No Issues (currently)		Caution Immediate abatement
#2 Administration Office – to be demolished		
Floor Tiles	Basement (brown with dark brown) Estimated: 44 m ²	The floor tiles were in poor condition. If this building is to be demolished, the floor tile may remain in place and does not need to be removed prior to demolition.
Transite Board	Basement Utility Room Estimated: 170 m ²	The transite board was in good condition. The ACM transite board needs to be abated prior to demolition.
Elbow/pipe Insulation	Entire basement Estimated: 120 m	The insulation was in fair condition with some exposed insulation. The ACM insulation needs to be abated prior to demolition.
#23 Workshop and Office		
Green Board (transite board)	Shop Mobile work bench Estimated: 0.5 m ²	The transite board was in poor condition and has a high asbestos content. It is at high risk and should be abated.
#33 Processing and Carpenter Shop		
Silver Duct Insulation	East room Estimated: 0.3 m x 0.1 m x 2.4 m high	High risk to occupants because the ACM insulation is damaged and exposed, with a high asbestos content. The insulation should be abated.
#37 Drying Shed		
Insulation	Within the dryers Estimated: 3 m ²	There is low risk since the insulation boards are intact, in good condition and within a dryer. All persons using these units should be educated and trained regarding this ACM.
Transite Board	Walls and ceiling Estimated: 60 m ²	The transite board was in good condition. They are low risk as long as they are not disturbed by cutting, hammering, drilling, etc. All persons using this building should be educated and trained regarding this ACM.
#60 Duplex House		
Floor Tiles	Entry way (off-white with brown) Estimated: 3 m ²	The tiles are in poor condition therefore there is a high risk. Any damaged tiles should be replaced.



ACM	Extent	Impact*
Drywall Mud	All rooms with drywall Estimated: 792 m ²	The majority of the drywall mud was in good condition however there was some water damaged drywall in poor condition. If the drywall is in good condition and not disturbed there is low risk of exposure. If the drywall mud is in poor condition or if the condition of the drywall deteriorates, or there are renovations, there is a higher risk of exposure and it should be abated.
Pump House and Lean-to		
Vermiculite Insulation	Ceiling Estimated: 60 m ²	This area has a high risk of exposure and should be abated as soon as possible. If the area cannot be abated, the vermiculite should be cleaned up and the compromised ceiling repaired before entry of unprotected personnel.

*NOTE: any ACM materials must only be handled/abated by trained and experienced personnel.

Only ACM in poor condition (i.e. damaged or friable) or that could be disturbed during renovation, maintenance, or other activities, requires abatement.

Asbestos abatement must be carried-out by qualified personnel who are experienced and trained in asbestos removal. Air monitoring and inspections must be completed during the abatement to ensure the safety of the abatement personnel and any unprotected persons in the area.

A management plan needs to be developed to address any ACM remaining on site.

An inventory of all asbestos containing materials should be maintained, and updated whenever any ACM is abated. An inspection of all ACM should be conducted on a regular basis, at least annually, to identify any change in the condition of the ACM.

Maintenance staff and contractors should be made aware, either by labeling of ACM, or by training, of the location of existing ACM, so that is not accidentally disturbed during any renovation or maintenance work.

LEAD

Lead Paint	Extent	Impact*
#57 Sewage Lift Pump House		There is little risk to occupants as long as the paint remains in good to fair condition and is not disturbed.
Exterior White	Exterior paint on building Total Estimate: 20 m ²	
#60 Duplex House		Disturbance of lead based paint causes the release of lead in the dust.
Exterior White	Trim Total Estimate: 8 m ² plus 4 windows and doors	
Interior Yellow	Basement stairwell Total Estimate: 6 m ²	
#60A Duplex Garage		If the lead based paint is to be disturbed, then the workers must wear appropriate PPE.
Exterior White	Trim Total Estimate: 40 m ²	
#62 Weigh Scale		When there is disposal of the lead based paint materials the landfill must be notified of the lead content of the paint. The landfill may require abatement or further testing of the lead paint before disposal, if the paint is in poor condition.
Exterior White	Exterior paint on building Total Estimate: 10 m ²	
Pump house and Lean-to		
Exterior White	Exterior paint on building Total Estimate: 60 m ²	



*NOTE: any lead based materials must only be handled/abated by trained and experienced personnel.

PCBs

There were no PCBs identified in this report. All fluorescent light and HID ballasts should be checked for PCBs at the time of removal using the most current version of Environment Canada publication: Identification of Lamp Ballasts Containing PCBs. Those that do contain PCBs must be handled, packaged and disposed of by the current regulations and personnel must be equipped with proper personal protection equipment.

MERCURY

Fluorescent light tubes in the fluorescent light fixtures may contain varying amounts of mercury vapor, even newly purchased tubes/bulbs. There are hundreds of fluorescent tubes and some compact fluorescent bulbs throughout the buildings. All fluorescent lights should be stored to protect from breakage and recycled accordingly.

There were mercury thermostats at:

- #2 Administration Office
- #14 Drying and Threshing Room
- #23 Workshop and Office
- #33 Processing and Carpenter shop
- #60 Duplex House

As long as the mercury containing materials are in good condition and not damaged and mercury remains enclosed (not leaking) there is low risk to occupants. Any mercury items should be recycled and disposed according to current regulations.

A best practice would be to replace the mercury containing thermostats with non-mercury containing units. These newer units are also typically more energy efficient than older mercury-containing units.

OZONE DEPLETING SUBSTANCES

Many of the ODS in the building have been removed. The table below outlines the remaining ODS of concern.

- #2 Administration Office – two air conditioners
- #33 Processing and Carpenter shop – freezer and chiller
- #60 Duplex House – two fridges

The ODS units should be recycled/recovered by a qualified and experienced worker according to Ozone Depleting Substances and Halocarbons Regulations.

RADIOACTIVE MATERIALS

No radioactive materials were observed on site.

MOULD

Mould or water damage which may lead to mould growth was observed at the following locations:

- #2 Administration Office
- #14 Drying and Threshing Room



#33 Processing and Carpenter shop
#60 Duplex House
Pump House

It is recommended that the source of the water leakage be determined and repaired, and any water damaged materials which are potential sources of mould growth, be abated.

PESTS

#6 Garage and Storage had a significant amount of bird and rodent feces and #33 Processing and Carpenter Shop had a significant amount of rodent feces in the attic area.

A qualified pest control contractor should be brought in to eliminate the problem. If this involves entering attic spaces, or disturbing ACM vermiculite insulation, the contractor will need to ensure that the workers are adequately protected from exposure to airborne fibres. The feces should be cleaned up by experienced and trained personnel.

A qualified pest control contractor should be brought in to eliminate the problem. If this involves entering attic spaces, or disturbing ACM, the contractor will need to ensure that the workers are adequately protected from exposure to airborne fibres. The feces should be cleaned up by experienced and trained personnel.

SPILLS/STAINS

Building #23 Workshop and Office had two sumps and one pit and Building #33 Processing and Carpenter Shop had three pits in the floor which may have contamination.

Phase I Environmental Site Assessments should be completed to address this stain and other areas of potential contamination.

If any other suspect materials become exposed during demolition or maintenance activities, the suspect materials should be tested.

Procedures for hazardous materials identified in this report should be developed and communicated to anyone who may come in contact with these materials. Also, anyone who may come in contact with hazardous materials should be informed on how to identify where the hazards may be present and how to proceed if they observe some suspect materials.

A management and monitoring plan should be developed and implemented to address the hazardous materials identified in this report and any possible future hazardous materials which may be encountered.



1.0 INTRODUCTION

Ballast Environmental Consulting Ltd. (Ballast Environmental) was contracted by Professional & Technical Services, Real Property Services Branch Public Works & Government Services Canada (PWGSC) to conduct three Hazardous Building Material Assessments at the Lacombe, Beaverlodge and Fort Vermillion Research Centers. The Lacombe Research Center is located at 6000 C&E Trail in Lacombe, AB and the assessment was conducted from January 17-21, 2011 and February 10, 2011. The Beaverlodge Research Center address is PO Box 29 in Beaverlodge, AB and the assessment was conducted from February 4-9, 2011. The Fort Vermillion Research Center address is PO Box 126, Fort in Fort Vermillion, AB and the assessment was conducted from February 1-3, 2011. The information obtained will be used for management, demolition, renovation and abatement purposes.

1.1 STUDY OBJECTIVES

The study objective includes:

- to provide a Hazardous Materials Report as per the Terms of Reference with the following information included in the report:
 - Site investigation, sample collection/location and laboratory analysis
 - Assessing the degree of risk/health hazard to workers
 - Estimating types, quantities and locations of hazardous materials and preparing a report in tabular format
 - Specifying QA/QC procedures and laboratory investigation methodologies

1.2 SCOPE OF WORK

The hazardous materials assessment includes:

- assessment and sampling of suspect materials which may contain asbestos and lead based paint;
- assessment of polychlorinated biphenyls (PCB), mercury, ozone-depleting substances (ODS), radioactive materials, mould;
- analysis and reporting of findings with recommendations.

The buildings assessed for this report were:

LACOMBE

#2 Residence

#2A Garage

#10 Machine Pole Barn

#21 Administration

#38 Beef Unit Pump House

#38A Beef Unit Garage

#40 Beef Unit Test Barn

#41 Beef Unit Residence

#41A Shed



#42A Beef Unit Bull Barn
#42B Dry Cow Feedlot
#42F, H, I Beef Unit Hay Sheds
#42J Cow and Calf Shelter (2 buildings)
#42L Storage (Hay Shed)
#52 Machine and Vehicle Repair
#53 Header House
#54 Animal Hospital

FORT VERMILLION

#2 Administration Office
#6 Garage and Storage
#14 Drying and Threshing Shed
#23 Workshop and Office
#33 Processing and Carpenter Shop
#37 Drying Shed
#57 Sewage Lift Pump House
#59 Tin Barn Storage
#60 Duplex House
#60A Garage
#62 Weigh Scale
Pump House

BEAVERLODGE

#1 Administration Office
#10 Canola Laboratory
#14 Soils Research Building
#15 Ecology Building
#17 Carpenter Shop
#18 Apiculture Laboratory
#25 Honey Extraction Building
#26 Storage
#35 Garage
#36 Forage Building
#39 Apiculture Storage
#40 Seed Storage
#43 Soils Field Building
#45 Chemical Storage
Cinder block Storage
Tin Shed

1.3 SITE DESCRIPTION

For a detailed description of each site, refer to sections 3.2, 4.2 and 5.2.



2.0 METHODOLOGY

A room-by-room inspection was completed in all accessible rooms on each property. Samples of suspect materials which may contain asbestos and suspect paint, which may contain lead, were taken. Sampling of asbestos materials follows the recommendations set out in the Alberta Asbestos Abatement Manual, July 2009, for bulk sampling. A visual survey was completed for polychlorinated biphenyls (PCB), mercury, ozone-depleting substances (ODS) and radioactive materials and mould and/or water damage. Observations and sampling locations were documented and diagrams are provided in the Appendices.

2.1 HEALTH AND SAFETY

All work carried out is consistent with a site specific health and safety plan. A hazardous assessment was completed each day before the commencement of work and hazard controls identified.

2.2 ASBESTOS CONTAINING MATERIALS (ACM)

A room-by-room (where accessible) and systematic visual survey was conducted of materials which may contain asbestos. Once a suspect material was identified, it was sampled and the location, type, amount, and condition was documented. Homogenous materials such as drywall compound or ceiling tile were sampled in various locations within a building and composites are made from each sampling location because of the variable nature of asbestos in these substances. The asbestos testing was completed by International Asbestos Testing Laboratory (IATL) in New Jersey using polarized light microscopy US EPA method 600/R-93/116, Method for the Determination of Asbestos in Bulk Building Materials for bulk samples. If the initial screening of asbestos in vermiculite was 'none detect', additional testing was carried out using EPA 600/R-04/004 Research Method for Sampling and Analysis of Fibrous Amphibole in Vermiculite Attic Insulation.

Some samples are not repeated on a room-by-room basis if it is obvious the subject material is the same. For example: floor tiles of the same colour and texture in the lab, office and hallway would only be sampled once and the results from that sample would apply to all areas with that same floor tile. This type of extrapolation is site dependent and depends on the material, amount, suspected date of installation, renovations etc.

For homogenous material, the minimum number of bulk samples, as set by the Alberta Asbestos Abatement Manual, is as follows:

<90 m ²	= 3 samples
90 – 450 m ²	= 5 samples
>450 m ²	= 7 samples



The following procedures were adhered to during sampling:

- The sampling was completed by a competent person
- Only the person sampling was in the area being sampled
- The material sampled was sprayed lightly with water
- Samples were collected carefully, trying not to disturb more material than necessary
- Any protective coverings that were disturbed were repaired/replaced/covered immediately
- Representative samples of all suspect materials were sampled, penetrating the entire depth of the material and sampling was done at random locations (where accessible)
- Materials with different appearances were sampled separately
- Collected samples were placed into sealed, impervious containers and they were labeled as a laboratory sample and had a WHMIS label on them
- The WHMIS label contained the following information:
 - Product identifier
 - The sample may contain asbestos
 - The statement "hazardous laboratory sample, for hazardous information and in an emergency call....." and provided an emergency telephone number
- Where appropriate plastic drop cloths were used to collect any debris from the sampling, any debris was vacuumed up using a vacuum equipped with a HEPA filtered exhaust or by wet wiping
- The sampler wore the appropriate face mask with P100 filters, Tyvex suit, rubber boots, safety glasses, and disposable nitrile gloves
- The gloves were changed for each sample
- All waste including gloves was placed in an appropriate bag labeled asbestos waste
- All tools and sampling equipment were decontaminated between samples and at the end of the day

2.3 LEAD PRODUCTS

Samples of paint were taken from various locations on various substrates. Every attempt was made to remove the paint without removing the underlying substrate. Tyvex suits, rubber boots, disposable nitrile gloves and half mask respirators with P100 filters were worn by the samplers. A razor scraper was used to scrape the paint from the substrate and then placed in a plastic, re-sealable, labelled bag. The samples were shipped to the laboratory via courier as soon as possible. There is no preservation or refrigeration required for the paint samples.



IATL tested for lead content analysis using ASTM D3335-85A Standard Method to Test for Low Concentrations of Lead in Paint by Atomic Absorption Spectrophotometry. Any lead samples which contained greater than 0.5% lead by weight were submitted for toxicity characteristic leaching procedure (TCLP) as per landfill requirements, when the required amount of sample could be collected. The laboratory requires the equivalent of two coffee cups (100 grams) of paint sample to run the TCPL analysis.

Visual observations were made for other materials containing lead such as emergency backup batteries.

2.4 POLYCHLORINATED BIPHENYLS (PCB)

Generally, fluorescent light ballasts are noted, and if possible inspected. If the ballasts are not marked PCB Free, the manufacture and date codes are compared to the Environment Canada publication, Identification of Lamp Ballasts Containing PCBs, revised August 1991, for PCB identification.

If there are suspect hydraulic fluids or transformers, the fluid is tested if it is accessible. Otherwise the suspect fluid is noted for testing when access is available.

These sites currently have a procedure in place for the PCBs.

2.5 MERCURY

Visual survey is completed to document the items and locations of any possible mercury containing items such as fluorescent light tubes, thermostats, gauges etc.

2.6 OZONE DEPLETING SUBSTANCES (ODS)

Generally, a visual survey is completed and refrigerators, water coolers and air conditioning units are checked, when possible, and noted as they may contain ozone depleting substances.

This site currently has a procedure in place for all ODS on site. The client has replaced the majority of the ODS's.

2.7 RADIOACTIVE MATERIALS

A visual survey is completed for radioactive material in the smoke detectors and other potential sources.



2.8 MISCELLANEOUS CHEMICALS

In general, a visual survey is completed and any miscellaneous chemicals are noted. Since this is a working research center with numerous, active laboratories, miscellaneous chemicals were not noted because it is estimated there are hundreds of chemicals contained in these facilities. As it is a federally regulated facility it is assumed all chemicals are handled, stored and disposed accordingly.

2.9 MOULD

A visual survey is completed for mould and conditions which would promote mould growth, such as water damage. If mould and/or water damage is encountered, the location, amount and potential source was noted.



3.0 LACOMBE

The following are the results of the investigation at the Lacombe Research Centre. Please refer to Appendix 1 for a detailed room description, sampling diagrams, a photographic log and a copy of the laboratory reports.

3.1 SCOPE OF WORK

The hazardous materials assessment includes:

- assessment and sampling of suspect materials which may contain asbestos and lead based paint;
- assessment of polychlorinated biphenyls (PCB), mercury, ozone-depleting substances (ODS), radioactive materials and mould;
- analysis and reporting of findings with recommendations.

3.2 SITE DESCRIPTION

The subject site is located at the Lacombe Research Center situated just south of the Town of Lacombe, AB. The site consists of thirty different buildings, only twenty-one of which are included in this audit.

#2 RESIDENCE

The building is mixed construction with the exterior walls consisting of wood siding and the roof is tar/asphalt shingles. The interior walls were either drywall or wood paneling on wood studs with fiberglass insulation. The attic space contains vermiculite insulation. The residence was constructed in 1947 and has an area of 192 m². Renovations are ongoing in the house.

#2A GARAGE

The building is mixed construction with the exterior walls consisting of wood siding and the roof is tar/asphalt shingles. The interior walls and ceiling were wood slats with wood chips for insulation. The interior ceiling was starting to slump in the middle of the building. The garage was constructed in 1924 and has an area of 22 m².

#10 MACHINE POLE BARN

The building is mixed construction with the exterior walls consisting of wood frame with metal and wood siding and the roof is metal sheeting. The interior walls consist of a wood frame with plywood walls and the ceiling was wood sheeting. The pole barn was constructed in 1974 and has an area of 371 m². This building was being used for storage.



#21 ADMINISTRATION

The administration block is 2 levels: basement and main floor. The basement is mainly offices with some storage and a boiler room and the main floor is offices with a reception area and foyer. There is also an attic which was constructed in the 1990's to enclose the original roof. In the 1990's renovations were completed on the building, although in several areas the old building materials were covered up, not removed. Generally, when newer linoleum was added, the old floor covering was removed and when new laminate floor was added, it was added on top of the existing floor covering. Other renovations since the 1990's include all drywall and T bar ceiling. A leak was observed in the attic along the west side of the building. The administration building was constructed in 1959 and has an area of 1,096 m².

#38 PUMPHOUSE (BEEF UNIT)

The building consists of exterior wood siding and interior wood framing and wood walls. There are asphalt shingles on the roof and a concrete floor. There is no insulation. The beef unit was constructed in 1958 and has an area of 13.4 m².

#38A BEEF UNIT GARAGE

The building consists of exterior wood siding and interior wood framing and wood walls. The asphalt shingles on the roof are newer. The wall insulation is batt type and the attic insulation consists of spray-in insulation over vermiculite. The beef unit was constructed in 1959 and has an area of 125 m².

#40 BEEF UNIT TEST BARN

The building is mixed construction with the exterior walls consisting of wood frame with metal siding and the roof is asphalt shingles. The interior walls consist of a wood frame with panel wood walls and the ceiling was wood sheeting. There was no insulation in the walls and the attic contained spray in recycled paper insulation. The pole barn was constructed in 1959 and has an area of 1,373 m².

#41 BEEF UNIT RESIDENCE

The building is mixed construction with the exterior walls consisting of plastic siding and the roof is tar/asphalt shingles. The interior walls were either drywall or wood paneling on wood studs. There was fiberglass insulation in the walls and vermiculite in the attic. The residence was constructed in 1959 and has an area of 164 m².



#41A SHED

The building is an old greenhouse with the previous windows removed and replaced with plywood. The interior walls and ceiling contain wood chips for insulation. The exterior walls are wood siding and interior walls wood plank and plywood ceiling. The area is approximately 16 m².

#42A BEEF UNIT BULL BARN

The building consists of exterior metal siding and interior wood framing. There are asphalt shingles on the roof. There was no insulation in this building. The beef unit bull barn was constructed in 1960 and has an area of 209 m².

#42B DRY COW FEEDLOT

The building consists of exterior metal siding and interior wood framing. The floor is concrete. There are asphalt shingles on the roof. There was no insulation in this building. The wood framing had been treated in creosote. The feedlot was constructed in 1960 and has an area of 487 m².

#42 F, H, I BEEF UNIT HAY SHEDS

The buildings consist of an open wood frame with a newer roof. The buildings were painted green. There was no insulation or walls. The 3 hay sheds were constructed in 1964/6 and have a total area of 640 m² (214 m² each shed).

#42 J COW AND CALF SHELTER (2 buildings)

The buildings consist of exterior open wood framing and a metal sheet roof. There are asphalt shingles on the roof. There was no insulation. The beef unit bull barns were constructed in 1965 and have an area of 321 m², each.

#42L STORAGE (HAY SHED)

The building consists of an open wood frame with a newer roof. There was no insulation. The hay shed was constructed in 1966 and has an area of 214 m².

#52 MACHINE AND VEHICLE REPAIR

The building is mixed construction with the exterior walls consisting of metal siding and roof. The interior walls were plywood with baton insulation. There is a concrete floor. Many types of chemicals were stored in the garage. The east portion and stores area in this building were a relatively new renovation. The garage was constructed in 1968 and has an area of 669 m².



#53 HEADER HOUSE

The building is mixed construction with the exterior walls consisting of metal siding and a metal roof. The interior walls were plywood with fiberglass insulation. There is a concrete floor. The header house was constructed in 1968 and has an area of 461 m².

#54 ANIMAL HOSPITAL

The building is mixed construction with the exterior walls consisting of metal siding and a metal roof. Half of the building consisted of covered corrals. The interior walls and ceiling were plywood. There is a concrete floor. Vermiculite insulation was observed in the walls and ceiling and creosote is suspected as wood treatment in the corral. There was vermiculite present on the floors of the building from compromised areas of the walls and ceiling. There was a cooler present for storage. The animal hospital was constructed in 1970 and has an area of 214 m².

For a detailed list of the rooms and construction materials, refer to Appendix 1a.

3.3 RESULTS

3.3.1 ASBESTOS CONTAINING MATERIALS (ACM)

One hundred and fourteen samples (including ten duplicates) of suspected ACM were collected and sent for analysis. Twenty-two of the samples were found to contain chrysotile asbestos and twelve of the samples were found to contain actinolite asbestos. The results are summarized in the table below and are contained in Appendix 1.

Table 1: Asbestos Analysis Results Summary for Lacombe

SAMPLE	COLOUR	DESCRIPTION	LOCATION (#- BUILDING NO.)	CONDITION	RESULT* (ASBESTOS TYPE)
A1	Red/brown	Duct putty	#21 Attic	Good	None Detected
Dup 1 (A1)	Red/brown	Duct putty	#21 Attic	Good	None Detected
A2	Gray	Mortar	#21 Attic south	Good	None Detected
A3	Gray	Mortar	#21 Attic north	Good	None Detected
A4	Light brown	Roof panel	#21 Attic south	Poor	None Detected
A5	Light brown	Roof panel	#21 Attic east	Poor	None Detected
A6	Light brown	Roof panel	#21 Attic north	Poor	None Detected
A7	Black	Roof tar	#21 Attic north	Fair	None Detected
A8	Black	Roof tar	#21 Attic east	Fair	None Detected
A9	White	Plaster	#21 North stairwell	Good	None Detected
A10	Brown	2x2 perf. ceiling tile	#21 113 Janitor closet	Poor	None Detected
A11	Green	Plaster	#21 113 Janitor closet	Poor	None Detected
A12	Brown	Tree bark sheet linoleum	#21 120 office	Good	None Detected



SAMPLE	COLOUR	DESCRIPTION	LOCATION (#- BUILDING NO.)	CONDITION	RESULT* (ASBESTOS TYPE)
A13	Blue/gray	Blue/gray lines sheet linoleum	#21 123 office	Good	None Detected
A14	Gray	Plaster	#21 Attic access	Good	None Detected
A15	White	Plaster	#21 118 ceiling	Good	None Detected
A16	White	Stipple	#21 Corridor 1 ceiling	Good	None Detected
A17	White	Stipple	#21 Corridor 2 ceiling	Good	None Detected
A18	White	Stipple	#21 Corridor 3 ceiling	Good	None Detected
A19	White	Plaster	#21 Corridor 3 adjacent room 18	Good	None Detected
A20	White	Stipple	#21 Corridor 4 ceiling	Good	None Detected
A21	Gray	Plaster	#21 Boiler room	Good	None Detected
A22	Brown	Plaster	#21 Electrical room	Fair	None Detected
Dup 2a (A22)	Brown	Plaster	#21 Electrical room	Fair	None Detected
Dup 2b (A22)	Gray	Plaster	#21 Electrical room	Fair	None Detected
A23	White	Stipple	#21 Corridor 4 ceiling	Good	None Detected
A24	Pink/brown	Transite board	#53 Boiler room	Good	35% (chrysotile)
A25	Brown	Transite board	#53 Boiler room	Good	30% (chrysotile)
Dup 3 (A25)	Brown	Transite board	#53 Boiler room	Good	25% (chrysotile)
A26a	Brown streak	Floor tile	#53 AV room 2E	Good	3.7% (chrysotile)
A26b	Yellow	Mastic	#53 AV room 2E	Good	None Detected
A27a	Brown streak	Floor tile	#53 3E office	Fair	6.3% (chrysotile)
A27b	Yellow	Mastic	#53 3E office	Fair	None Detected
A28	White	Siding	#2 Siding	Good/ fair on south	None Detected
A29	Brown	Vermiculite	#54 Walls	Poor	0.25% (actinolite)
A30	Gray	Mortar	#21 Exterior admin	Good	None Detected
A31	White	Caulking	#21 Exterior admin	Good	None Detected
A32	White	Caulking	#21 Exterior admin	Good	None Detected
A33	White	Stipple	#2 Basement shoe box	Good	None Detected
A34	Black	Wire	#2 Basement wire	Good	None Detected
A35	Red	Brick mortar	#2 Basement chimney	Good	None Detected
A36	Gray	Window Putty	#2 Basement window	Good	None Detected
A37	White	Stipple	#2 Kitchen	Good	None Detected
A38	White	Stipple	#2 Dining room	Good	None Detected
A39	Gray	Mortar	#2 Main floor chimney	Good	None Detected
A40	White	Drywall mud	#2 Closet in hall	Good	2.9% (chrysotile)
Dup 4 (A40)	White	Drywall mud	#2 Closet in hall	Good	2.6% (chrysotile)
A41	White	Drywall mud	#2 Closet #2	Good	Trace (chrysotile)
A42	White	Drywall mud	#2 Washroom	Good	None Detected
A43	Light brown	Plaster	#2 Foyer	Fair	None Detected
A44	Black	Tar paper	#2 Exterior south (over wood siding)	Good	None Detected



SAMPLE	COLOUR	DESCRIPTION	LOCATION (#- BUILDING NO.)	CONDITION	RESULT* (ASBESTOS TYPE)
A45	Brown	Vermiculite	#54 Walls/ceiling	Poor	0.75% (actinolite)
A46	Gray	Window putty	#2A Garage window	Poor	None Detected
A47	Pink	Floor tile	#41 Kitchen	Poor	None Detected
A48a	Beige	Floor tile	#41 Kitchen	Poor	None Detected
A48b	Beige	Mastic	#41 Kitchen	Poor	None Detected
A49	Gray	Brick mortar	#41 Basement chimney	Good	None Detected
Dup 5 (A49)	Gray	Brick mortar	#41 Basement chimney	Good	None Detected
A50	White	2x2 pinhole ceiling tile	#41 Basement foyer ceiling	Fair	None Detected
A51	White	2x2 pinhole ceiling tile	#41 Basement foyer ceiling	Fair	None Detected
A52	Purple	2x2 pinhole ceiling tile	#41 Basement in front of cold room	Fair	None Detected
A53	White	Drywall mud	#41 Main bedroom behind door	Good	None Detected
A54	White	Drywall mud	#41 Washroom closet	Good	None Detected
A55	White	Drywall mud	#41 2 nd bedroom behind door	Good	None Detected
A56a	Light purple	1x3 ceiling tile	#41 Basement by fire detector	Good	None Detected
A56b	White	Joint compound	#41 Basement by fire detector	Good	None Detected
A57	Purple	1x3 ceiling tile	#41 Basement by light	Good	None Detected
A58	Brown	Vermiculite	#41 Attic	Good	0.24% (actinolite)
A59	White	1x1 ceiling tile	#41 Porch	Good	None Detected
A60	Brown	Floor covering	#2 Porch	Fair	None Detected
A61	White	Stipple	#2 Kitchen ceiling	Good	None Detected
A62	Gray	Mortar	#38A Chimney	Good	None Detected
A63	Brown	Vermiculite	#2 Attic	Good	Trace (actinolite)
A64	Metallic brown	Sink insulation	#53 AV room	Good	4.5% (chrysotile)
A65	White	Pipe elbow insulation	#21 Corridor 3	Fair	65% (chrysotile)
A66	White	Pipe insulation	#21 Corridor 3	Fair	65% (chrysotile)
A67	White	Pipe insulation	#21 Corridor 3	Fair	25% (chrysotile)
A68	White	Pipe insulation	#21 Corridor 4	Poor	60% (chrysotile)
A69	Brown	Vermiculite	#38A Ceiling	Good	0.5% (actinolite)
A70a	Brown	Floor tile	#38A Room 1 furnace	Fair	1.3% (chrysotile)
A70b	Black	Mastic	#38A Room 1 furnace	Fair	None Detected
A71	Black	Tar paper	#38 Walls	Poor	None Detected
A72	White	Caulking	#40 South window	Poor	3.1% (chrysotile)
Dup 6 (A72)	White	Caulking	#40 South window	Poor	1.8% (chrysotile)
A73	White	Caulking	#38A West window	Poor	None Detected
A74	Off white	Tile floor	#54 Entrance	Poor	1.9% (chrysotile)
Dup 7 (A74)	Off white	Tile floor	#54 Entrance	Poor	1.7% (chrysotile)



SAMPLE	COLOUR	DESCRIPTION	LOCATION (#- BUILDING NO.)	CONDITION	RESULT* (ASBESTOS TYPE)
A75	Brown	Vermiculite	#54 Walls	Poor	0.25% (actinolite)
A76	White/green	Drywall mud	#52 2 nd floor	Good	None Detected
A77	White/green	Drywall mud	#52 2 nd floor	Good	None Detected
A78	White/green	Drywall mud	#52 2 nd floor	Good	None Detected
A79	White	Stipple	#52 2 nd floor office north	Good	None Detected
A80	White	Stipple	#52 2 nd floor kitchen north	Good	None Detected
A81	White	Stipple	#52 2 nd floor kitchen south	Good	None Detected
A82a	Brown streak	Linoleum	#52 2 nd floor kitchen	Good	None Detected
A82b	Tan	Mastic	#52 2 nd floor kitchen	Good	None Detected
A83	Off white	Floor tile	#52 Main floor office	Poor	2.4% (chrysotile)
A84	Yellow	Welding screen	#52 West part of east bay	Poor	None Detected
Dup 8 (A84)	Yellow	Welding screen	#52 West part of east bay	Poor	None Detected
A85	Brown	Insulation	#52 East shop wall	Good	None Detected
A86a	Brown	Insulation	#52 West shop ceiling	Good	None Detected
A86b	Brown	Wrap	#52 West shop ceiling	Good	None Detected
Dup 9 (A86)	Brown	Insulation	#52 West shop ceiling	Good	None Detected
A87	White	Window glazing	#52 South shop window	Fair	1.3% (chrysotile)
A88	Brown	Vermiculite	#41 Attic	Good	0.57% (actinolite)
A89	Brown	Vermiculite	#41 Attic	Good	0.30% (actinolite)
A90	Brown	Vermiculite	#2 Attic	Good	0.25% (actinolite)
A91	Brown	Vermiculite	#2 Attic	Good	Trace (actinolite)
A92	Brown	Vermiculite	#38A Attic	Good	0.25% (actinolite)
A93	Brown	Vermiculite	#38A Attic	Good	0.5% (actinolite)
A94	Green/black	9"x9" Floor tile	#21 Basement office #6	Good	5.9% (chrysotile)
A95	Green/black	9"x9" Floor tile	#21 Basement office #6	Good	6.2% (chrysotile)
A96	Green/black	9"x9" Floor tile	#21 Basement office #4	Good	5.7% (chrysotile)
A97	Brown	Sheet linoleum	#21 Main Room 103	Fair	None Detected
A98	Brown	Sheet linoleum	#21 Main post office	Fair	None Detected

BOLD – over criteria*

* Criteria: ≥1% asbestos: asbestos containing material as defined by the Alberta Asbestos Abatement Manual, July 2009. Vermiculite is positive for asbestos with asbestos present in any amount.

- all building materials containing more than 1% (by weight) asbestos must be removed prior to demolition (Work Safe Alberta ASB003 – Asbestos Revised July 2009 and OHS Code Part 4) *with some exceptions*



Due to the size and amount of ACM possibly present on this site, representative sampling was conducted. It was not practical or necessary to sample every item which may be an ACM. If the representative samples test positive for asbestos, it is assumed the identical materials, which were not tested, are also positive. For example, the drywall mud and pipe elbow insulation tested positive and therefore all drywall mud and pipe insulation is assumed to be positive for asbestos.

Below is a list of the types of materials sampled and the results for asbestos (# samples positive and/or # samples negative) in brackets.

#2 Residence (17 asbestos samples)

- White siding (1 negative)
- White stipple (4 negative)
- Black wire insulation (1 negative)
- Gray mortar (1 negative)
- Gray window putty (1 negative)
- Drywall mud (1 positive, 1 trace, 1 negative)
- Tar Paper (1 negative)
- Vermiculite (3 positive)
- Brown linoleum (1 negative)
- White siding (1 negative)

#2A Garage (1 asbestos sample)

- Gray window putty (1 negative)

#10 Machine Pole Barn (0 asbestos samples)

- No asbestos samples taken

#21 Administration (35 asbestos samples)

- Red/brown duct putty – (1 negative)
- Gray mortar – (3 negative)
- Light brown roof panel (3 negative)
- Black roof tar (2 negative)
- Plaster (7 negative)
- Brown 2x2 perforated ceiling tile (1 negative)
- Brown tree bark sheet linoleum (1 negative)
- Blue/gray lines sheet linoleum (1 negative)
- White stipple (5 negative)
- White window caulking (2 negative)
- Brown sheet linoleum (2 negative)
- Green/black floor tile (3 positive)
- Pipe elbow insulation (1 positive)
- Pipe insulation (3 positive)



#38 Pump House (1 asbestos sample)

- Black tar paper (1 negative)

#38A Beef Unit Garage (7 asbestos samples)

- Vermiculite (3 positive)
- Brown floor tile (1 positive)
- Floor tile mastic (1 negative)
- Window caulking (1 negative)
- Mortar (1 negative)

#40 Beef Unit Test Barn (1 asbestos sample)

- Window caulking (1 positive)

#41 Beef Unit Residence (16 asbestos samples)

- Pink floor tile (1 negative)
- Beige floor tile and mastic (1 negative)
- Mortar (1 negative)
- 2 x 2 ceiling tile (3 negative)
- Drywall mud (4 negative)
- 1 x 3 ceiling tile (2 negative)
- Vermiculite (3 positive)
- 1 x 1 ceiling tile (1 negative)

#41A Shed (no asbestos samples)

#42A Beef Unit Bull Barn (no asbestos samples)

#42B Dry Cow Feedlot (no asbestos samples)

#42 F, H, I Beef Unit Hay Sheds (no asbestos samples)

#42 J Cow and Calf Shelter (2 buildings) (no asbestos samples)

#42L Storage (Hay Shed) (no asbestos samples)

#52 Machine and Vehicle Repair (14 asbestos samples)

- Drywall mud (3 negative)
- Stipple (3 negative)
- Brown Streak Linoleum and mastic (1 negative)
- Off white floor tile (1 positive)
- Welding screen (1 negative)
- Insulation (3 negative)
- Window putty (1 positive)



#53 Header House (7 asbestos samples)

- Transite board (2 positive)
- Brown streak Floor tile (2 positive)
 - Mastic (2 negative)
- Sink insulation (1 positive)

#54 Animal Hospital (4 asbestos samples)

- Vermiculite (3 positive)
- Off white floor tile (1 positive)

The following is considered to be ACM (refer to Appendix 1 for room details, diagrams outlining the locations and a photographic log):

- The **plumbing insulation** around the pipes and pipe elbows in building # 21 Administration contains from 25% to 65% chrysotile asbestos.
- The **drywall mud** in building #2 contains up to 2.9% chrysotile asbestos. All areas of the building contain various amounts of drywall on either the walls or ceiling.
- There are three different patterns of **floor tiles** that contain up to 6.3% chrysotile asbestos. The tile patterns are: brown streak, off white, green/black and brown. There was no asbestos found in the associated mastic or leveling compound.
 - Black/green floor tile is contained in #21 Administration building in 3 offices (4, 6 and 8) in the basement.
 - Off White floor tile located in the main floor office of building #52 Machine and Vehicle Repair and the entrance way of #54 Animal Hospital
 - Brown streak floor tile located in the AV room and office in the building #53 Header House
- The **vermiculite insulation** found on site contained trace amounts up to 0.75% actinolite asbestos.
 - #2 Residence had ACM vermiculite insulation in the attic
 - #38A Office and Garage had ACM vermiculite insulation in the attic
 - #41 Beef Unit Residence had ACM vermiculite insulation in the attic
 - #54 Animal Hospital had ACM vermiculite insulation in the walls and attic
- There are **insulating coatings under lab sinks** that contain around 4.5% chrysotile asbestos in the AV room of building #53 Header House. The insulation coating, which is the dark metallic brown is the asbestos containing insulation.
- There is window **caulking/glazing** located:
 - on the south window of the #40 Beef Unit Test Barn which contained 3.1% chrysotile asbestos
 - southeast window of the #52 Machine and Vehicle Repair



- **Transite boards** located in boiler room of building #53 Header House tested positive for 25% to 35% chrysotile asbestos. These boards were pink/brown and brown in colour.

3.3.2 LEAD PRODUCTS

Thirty seven (including 3 duplicates) representative samples were sampled and placed in sealable containers for lead content analysis. Please refer to Appendix 1 for a detailed description, a sampling diagram, a photographic log and a copy of the laboratory reports. Nine of the samples are considered lead based paint containing 0.5%, or above, lead by weight.

Table 2: Lead in Paint Analysis Results Summary for Lacombe

SAMPLE	COLOUR	LOCATION (#- BUILDING NO.)	RESULTS (% LEAD BY WEIGHT)*
A9	White	#21 North stairwell	0.023**
P2	Green	#21 113 janitor closet	0.21
P3	White on dark green	#21 116 wall	0.063
P4	Purple on white	#21 118 wall	0.085
P5	Brown	#21 Electric room	0.26**
A24	Pink/brown	#53 Boiler room	Not analyzed due to asbestos content
A25	Brown	#53 Boiler room	Not analyzed due to asbestos content
P8	Pink over yellow	#53 AV room	0.35**
P9	White	#53 Gym	<0.0085
Dup 1 (P9)	White	#53 Gym	<0.0067
P10	Yellow over green	#53 Corridor 5	0.14**
P11	White	#21 Exterior window frame	0.95*
P13	Dark green	#2 Exterior trim	5.7*
P14	Green	#2A Interior trim	<0.0075**
P15	Gray	#41 Basement floor	Void
A50	White	#41 Basement foyer ceiling	<0.0092**
A51	White	#41 Basement foyer ceiling	<0.0091**
P16	White	#38A Garage	0.35
Dup 3 (P16)	White	#38A Garage	0.54*
P17	White	#41A Shed	2.5*
P18	Green	#2 Basement stairs	0.2**
P19	White	#2 Interior of basement	0.16
P20	White	#2 Exterior	<0.0093
P21	White	#38A Exterior	1.5**
P22	Gray	#38A Floor	0.0059**
P23	White	#38A Walls	<0.0074**
P24	White	#38 Pump house	0.87*
Dup 5 (P24)	White	#38 Pump house	1.2*
P25	Brown	#40 Interior walls	<0.0083**



SAMPLE	COLOUR	LOCATION (#- BUILDING NO.)	RESULTS (% LEAD BY WEIGHT)*
P26	White	#40 Interior walls	0.073**
P27	Green	#42B Exterior doors	0.4**
P28	White	#54 Exterior white	0.072
P29	White	#54 Interior white	0.75*
P30	Red	#10 Interior of barn	0.0093**
P31	White	#10 Exterior of barn	1.9**
P32	Yellow	#52 Shelves in tool room	0.027**
P33	Gray	#52 Work bench east bay	0.093**

BOLD – over criteria

* lead >0.5% by weight is considered to be lead containing paint (Work Safe Alberta CH061 and the Federal Hazardous Products Act)

**Matrix/substrate interference possible. Sample results are not corrected for contamination by field or analytical blanks

***Insufficient sample provided to perform QC re-analysis

Below is a list of the colours of paints sampled and the results (# samples positive and/or # samples negative for lead based paint) in brackets.

#2 Residence (4 paint samples)

- Dark green exterior (1 positive)
- White exterior (1 negative)
- White interior (1 negative)
- Green interior (1 negative)

#2A Garage (1 paint sample)

- Green interior (1 negative)

#10 Machine Pole Barn (2 paint samples)

- Red interior (1 negative)
- White exterior (1 positive)

#21 Administration (6 paint samples)

- White interior (1 negative)
- White exterior (1 positive)
- Green interior (1 negative)
- White on dark green (1 negative)
- Purple on white (1 negative)
- Brown (1 negative)

#38 Pump House (1 paint sample)

- White exterior (1 positive)



#38A Beef Unit Garage (3 paint samples)

- White exterior (2 positive)
- Gray interior (1 negative)
- White interior (1 negative)

#40 Beef Unit Test Barn (2 paint samples)

- White interior (1 negative)
- Brown interior (1 negative)

#41 Beef Unit Residence (3 paint samples)

- White interior (2 negative)
- Gray interior (1 negative)

#41A Shed (1 paint sample)

- White exterior (1 positive)

#42A Beef Unit Bull Barn (no paint samples)

#42B Dry Cow Feedlot (1 paint samples)

- Green exterior (1 negative)

#42 F, H, I Beef Unit Hay Sheds (no paint samples)

#42 J Cow and Calf Shelter (2 buildings) (no paint samples)

#42L Storage (Hay Shed) (no paint samples)

#52 Machine and Vehicle Repair (2 paint samples)

- Yellow interior (1 negative)
- Gray interior (1 negative)

#53 Header House (5 paint samples)

- Pink/brown interior (1 negative)
- Brown interior (1 negative)
- Pink/yellow interior (1 negative)
- White interior (1 negative)
- Yellow/green interior (1 negative)

#54 Animal Hospital (2 paint samples)

- White exterior (1 negative)
- White interior (1 positive)



The following is considered lead containing paint:

- **White** paint on the exterior of the following buildings:
 - #10 Machine Pole Barn
 - #21 Administration
 - #38 Pump House
 - #38A Office and Garage
 - #41A shed
 - #54 Animal Hospital

- **White** paint on the interior of #54 Animal Hospital

- **Dark green** paint on the exterior trim of the #2 Residence and #2A Residence garage.

3.3.3 POLYCHLORINATED BIPHENYLS (PCBs)

There were fluorescent light fixtures found throughout the entire building, and transformers/electrical equipment in the vicinity of the buildings, which would be suspect to contain PCBs. The subject site has had the PCB ballasts retrofitted to non PCB ballasts.

3.3.4 MERCURY

Fluorescent light tubes in the fluorescent light fixtures may contain varying amounts of mercury vapor, even newly purchased tubes/bulbs. There are hundreds of fluorescent tubes and some compact fluorescent bulbs throughout the buildings.

There was one mercury thermostat in #2 Residence, three in #21 Administration Building, one in #38A Beef Unit Garage, two in #52 Vehicle & Machine Repair, one in #53 Header House and one in the #54 Animal Hospital.

Table 3: Mercury Results Summary for Lacombe

BUILDING	LOCATION	TYPE/QUANTITY
Throughout entire area and located in every room	Light bulbs and tubes	Fluorescent light tubes and bulbs
#2 Residence	Main floor hallway	1 mercury thermostat
#21 Administration	Boiler Room	1 mercury switch
#21 Administration	118 Office	1 mercury thermostat
#21 Administration	Attic	1 mercury thermostat
#38A Beef Unit Garage	West wall main room	1 mercury thermostat
#52 Machine & Vehicle Repair	Upper Kitchen	1 mercury thermostat
#52 Machine & Vehicle Repair	Bay E	2 mercury thermostat
#53 Header House	Corridor	1 mercury thermostat
#54 Animal Hospital	Hospital Area; main room	1 mercury thermostat



3.3.5 OZONE DEPLETING SUBSTANCES (ODS)

Many of the ODS in the building have already been inventoried and many have been removed. The table below outlines the remaining ODS of concern.

Table 4: ODS Results Summary for Lacombe

LOCATION (BUILDING/FLOOR/ROOM)	DESCRIPTION OF THE SYSTEM	TYPE OF ODS	ESTIMATED QUANTITY
#52 Machine & Vehicle Repair/2 nd /kitchen	Kitchen fridge	R-12	5 oz
#54 Animal Hospital/exterior	Chiller for cooler	R-502	unknown

The following is a summary of the ozone depleting substances still present on site:

- There was 1 **fridge** which contains R-12.
- There is 1 **chiller** which contains R-502.

3.3.6 RADIOACTIVE MATERIALS

Four radioactive smoke detectors were found on the subject site.

Table 5: Radioactive Materials Results Summary for Lacombe

LOCATION (BUILDING, FLOOR, ROOM)	DESCRIPTION	ESTIMATED QUANTITY
#2 Residence/Main Floor/South Bedroom	Smoke detector	1
#41 Beef Unit Residence /Upstairs /Hallway	Smoke detector	1
#41 Beef Unit Residence /Downstairs/ Foyer	Smoke detector	1
#52 Machine & Vehicle Repair/upstairs/kitchen	Smoke detector	1

3.3.7 MISCELLANEOUS CHEMICALS

Miscellaneous chemicals were observed at the following locations:

Table 6: Miscellaneous Chemicals Summary for Lacombe

LOCATION (BUILDING, FLOOR, ROOM)	DESCRIPTION	ESTIMATED QUANTITY
#10 Pole Barn	Engine oil, transmission fluid and fertilizer	-
#21 Administration/janitors closet	Miscellaneous cleaning chemicals	-
#38A Office and Garage	Fertilizer and sterilizer storage	-
#52 Machine & Vehicle Repair	Chemicals generally found in shops: solvents, grease, oils, degreasers, batteries, antifreeze, etc.	-
#54 Header House	Chemicals generally found in utility rooms; solvents and oils	-



3.3.8 MOULD

Visible mould was not observed at the subject site. However, water damage and conditions which may lead to mould were observed. The table below summarizes the locations of the damage.

Table 7: Water Damage Results Summary for Lacombe

LOCATION (BUILDING, FLOOR, ROOM)	DESCRIPTION	ESTIMATED QUANTITY
#21 Admin/attic	Leak on west side	-
#21 Admin/118 Office	South wall	6 m ²
#21 Admin/120 Office	South wall	3 m ²
#41 Beef Unit Residence	Snow buildup in attic under roof vent	0.3 m in diameter

3.3.9 PHENOLS

Wood containing cresols and phenols (creosote) was observed in the #10 Machine Pole Barn, #42A Beef Unit Bull Barn, #42B Dry Cow Feedlot, #42F, H, I Hay Sheds, #42J Cow and Calf Shelters, #42L Storage, and #54 Animal Hospital.

Table 8: Phenols Results Summary for Lacombe

HAZARDOUS MATERIAL	RESULT	GUIDELINE*
Cresols	72 mg/kg	100 mg/kg
2-methylphenol	20 mg/kg	No guideline
3 & 4-methylphenol	52 mg/kg	No guideline

BOLD – over criteria

* Alberta User Guide for Waste Managers by Alberta Environmental Protection

Solids contaminated with cresol or cresylic acid are prohibited from landfill disposal if they are present at levels exceeding 100 mg/kg.

3.3.10 OTHER

PESTS

Building 2 Residence contained a substantial amount of mouse feces in the attic.

Building 2A Garage contained an infestation of mice.

Building 54 Animal Hospital contained a substantial amount of bird feces in the attic.

SPILLS/STAINS

Building 10 Machine Pole Barn has some suspected hydrocarbon staining on the dirt floor.



3.3.11 SUMMARY OF RESULTS BY BUILDING

#2 Residence

The following table is a summary of the hazardous materials identified in the #2 Residence. Refer to Appendix 1b-3 – 1b-4 for diagrams and Appendix 1c-1, 1c-2 and 1c-6 for photographs.

Table 9: #2 Residence Hazardous Materials Summary for Lacombe

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM Drywall Mud	Closet in hall; assumed in all of the rooms	334 m ²
ACM Vermiculite Insulation	Attic – vermiculite under batten wool	Entire attic 200 m ²
Lead in Paint	Exterior trim dark green paint	2 man doors and 10 windows
Mercury thermostat	Stairway	1
Radioactive Smoke Detector	Main floor hallway	1
Rodent feces	Attic	3 m ² Spread throughout the attic

#2A Garage

The following table is a summary of the hazardous materials identified in the #2 Residence. Refer to Appendix 1b-5 for diagrams and Appendix 1c-6 for photographs.

Table 10: #2A Garage Hazardous Materials Summary for Lacombe

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
Lead in Paint	Exterior trim dark green paint; all window and door frames	1 man door, 1 garage door, 2 window frames
Rodent feces	Attic, walls and floor	Present in the walls and attic Floor Area = 22 m ²

#10 Machine Pole Barn

The following table is a summary of the hazardous materials identified in the #10 Machine Pole Barn. Refer to Appendix 1b-4 for diagrams and Appendix 1c-7 for photographs.

Table 11: #10 Machine Pole Barn Hazardous Materials Summary for Lacombe

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
Lead in Paint	White exterior paint on barn Suspect this paint is located under the metal siding	650 m ²
Hydrocarbon staining	North portion of the building	2 m ²



#21 Administration

The following table is a summary of the hazardous materials identified in the #21 Administration. Refer to Appendix 1b-7 – 1b-9 for diagrams and Appendix 1c-2, 3 and 5 for photographs.

Table 12: #21 Administration Hazardous Materials Summary for Lacombe

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM Pipe Elbow Insulation	Corridor #3 and #4 – assume entire building	unknown
ACM Pipe Insulation	Corridor #3 and #4 – assume entire building	unknown
ACM floor tile	Green/black floor tile (office 4, 6 and 8)	30 m ²
Lead in Paint	Exterior window and door frame-white paint	100 windows
Mercury thermostat	Attic, 118 Office, Boiler room	3
Water damage	Attic, 118 Office, 120 Office	9 m ²

#38 Pump House

The following table is a summary of the hazardous materials identified in the #38 Pump House. Refer to Appendix 1b-10 for diagrams and Appendix 1c-7 for photographs.

Table 13: #38 Pump House Hazardous Materials Summary for Lacombe

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
Lead in paint	White exterior paint; exterior of building	50 m ²

#38A Beef Unit Garage

The following table is a summary of the hazardous materials identified in the #38 Beef Unit Garage. Refer to Appendix 1b-11 for diagrams and Appendix 1c-3 and 1c-7 for photographs.

Table 14: #38A Beef Unit Garage Hazardous Materials Summary for Lacombe

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM Floor Tile	Room 1; directly under the furnace	0.5 m ²
ACM insulation	Attic; entire attic; approx. 0.3 m thick	125 m ²
Lead in paint	White exterior paint; exterior of building	150 m ²
Mercury Thermostat	Room 1	1

#40 Beef Unit Test Barn

The following table is a summary of the hazardous materials identified in the #40 Beef Unit Test Barn. Refer to Appendix 1b-12 for diagrams and Appendix 1c-3 for photographs.



Table 15: #40 Beef Unit Test Barn Hazardous Materials Summary for Lacombe

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM Caulking	All windows	41 windows

#41 Beef Unit Residence

The following table is a summary of the hazardous materials identified in the #41 Beef Unit Residence. Note: there was a small buildup of snow (0.3 m in diameter) in the attic under the roof vent. Refer to Appendix 1b-13 - 14 for diagrams and Appendix 1c-5 for photographs.

Table 16: #41 Beef Unit Residence Hazardous Materials Summary for Lacombe

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM Vermiculite Insulation	Attic	140 m ²
Radioactive Smoke Detector	Upstairs Hallway and basement foyer	2

#41A Shed

The following table is a summary of the hazardous materials identified in the #41A Garage/Shed. Refer to Appendix 1b-15 for a diagram and Appendix 1c-6 for photographs.

Table 17: #41A Shed Hazardous Materials Summary for Lacombe

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
Lead in paint	White paint on exterior of shed	40 m ²

#42A Beef Unit Bull Barn

There were no hazardous materials identified in the #42A Beef Unit Bull Barn.

#42B Dry Cow Feedlot

There were no hazardous materials identified in the #42B Dry Cow Feedlot

#42F,H,I Beef Unit Hay Sheds

There were no hazardous materials identified in #42F,H,I Beef Unit Hay Sheds.

#42J Cow and Calf Shelter

There were no hazardous materials identified in the #42J Cow and Calf Shelter.



#42L Storage

There were no hazardous materials identified in the #42L Storage.

#52 Machine & Vehicle Repair

The following table is a summary of the hazardous materials identified in the #52 Machine & Vehicle Repair. Refer to Appendix 1b-17 – 1b-18 for a diagram and Appendix 1c-4 for photographs.

Table 18: #52 Machine & Vehicle Repair Hazardous Materials Summary for Lacombe

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM Floor Tile	Main floor office	8 m ²
ACM Window Glazing	South shop window	1 window
Mercury thermostat	Kitchen, East bay	2
ODS – R12	kitchen fridge	5 oz
Miscellaneous chemicals	Main shop area	-

#53 Header House

The following table is a summary of the hazardous materials identified in the #53 Header House. Refer to Appendix 1b-19 for a diagram and Appendix 1c-1 -2 & 5 for photographs.

Table 19: #53 Header House Hazardous Materials Summary for Lacombe

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM Transite Board	Boiler Room	115 m ²
ACM Floor Tile	AV Room 2E and 3E	120 m ²
ACM Sink Insulation	AV Room	1 sink
Mercury Thermostat	Corridor	1

#54 Animal Hospital

The following table is a summary of the hazardous materials identified in the #54 Animal Hospital. There is a substantial amount of bird feces in the west portion of the attic area. The attic area is open to the corral area. Refer to Appendix 1b-20 for a diagram and Appendix 1c-1 & 7 for photographs.



Table 20: #54 Animal Hospital Hazardous Materials Summary for Lacombe

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM Vermiculite Insulation	All ceiling and walls (excluding the corral area)	Attic = 100 m ² Walls = 72 m ²
ACM Floor Tile	Entrance floor	2 m ²
Lead in paint	White interior paint; all interior walls excluding the cooler	200 m ²
Mercury thermostat	Main room	1
ODS	Chiller for cooler; exterior of building	1 unit
Bird feces	Attic area	100 m ²



3.4 ASSESSING RISK EXPOSURE FOR ASBESTOS

There are eight major factors which assist in evaluating the condition of a particular asbestos installation.

The eight factors include:

1. Condition of Material
2. Water Damage
3. Exposed Surface Area
4. Accessibility
5. Activity and Movement
6. Air Plenum or Direct Air Stream
7. Friability
8. Asbestos Content

These factors have been put together into the following tables to allow for assessment to determine the degree of risk associated with existing asbestos. The parameters in Table 21 are applied to the ACM to derive a risk rating. These risk ratings are then compared to Table 22 to determine what type of action is required.

Table 21: Assessing Risk Exposure

FACTOR	DESCRIPTION	RATING OF RISK EXPOSURE
Accessibility of Material	Accessible in high activity areas	High (h)
	Accessible in low activity areas beyond the reach of the area occupants	Medium (m)
	Enclosed	Low (l)
Condition of Materials	Severely damaged	High (h)
	Mild to moderate damage	Medium (m)
	Good condition	Low (l)
Friability of Materials	Easily breaks apart	High (h)
	Mild to moderate friability	Medium (m)
	Non-friable	Low (l)

* Information from *Alberta Asbestos Abatement Manual*. Government of Alberta, Employment, Immigration and Industry. July 2009.



Table 22: Determining Level of Control Required

	ASBESTOS NOT PRESENT IN RETURN AIR PLENUM		ASBESTOS PRESENT IN RETURN AIR PLENUM
	LESS THAN 20% ASBESTOS CONTENT IN MATERIAL	GREATER THAN 20% ASBESTOS CONTENT IN MATERIAL	
Immediate Control Required	2 Hs or 3 Ms	1 H or 2 Ms	Control required unless 3 Ls and less than 20% asbestos content in material
Control Required	1 H or 2 Ms	1 M	
No Control Required	1 M or 3 Ls	3 Ls	

* Information from *Alberta Asbestos Abatement Manual*. Government of Alberta, Employment, Immigration and Industry. July 2009.

The table below outlines the results of the above methodology to determine priorities for dealing with ACM and which ACM may be causing a high risk to occupants of the building.

Table 23: ACM Risk of Exposure for Lacombe

SAMPLE	DESCRIPTION	LOCATION	CONDITION	RESULT	RISK EXPOSURE ACCESSIBLE (CONDITION) (FRIABILITY)	CONTROL REQUIRED
A24	Pink/brown transite board	#53 Boiler room	Good	35% (chrysotile)	(M)(L)(L)	Control
A25	Brown transite board	#53 Boiler room	Good	30% (chrysotile)	(M)(L)(L)	Control
A26a	Brown streak floor tile	#53 AV room 2E	Good	3.7% (chrysotile)	(H)(L)(L)	Control
A27a	Brown streak floor tile	#53 3E office	Fair	6.3% (chrysotile)	(H)(M)(L)	Control
A29	Brown Vermiculite	#54 Walls/ceiling	Poor	0.25% (actinolite)	(H)(H)(H)	Immediate
A40	White drywall mud	#2 Closet in hall	Good	2.9% (chrysotile)	(L)(L)(H)	Control
A45	Brown Vermiculite	#54 Walls/ceiling	Poor	0.75% (actinolite)	(H)(H)(H)	Immediate
A58	Brown Vermiculite	#41 Attic	Good	0.24% (actinolite)	(L)(L)(H)	Control
A63	Brown Vermiculite	#2 Attic	Good	Trace (actinolite)	(L)(L)(H)	Control
A64	Metallic brown sink insulation	#53 AV room	Good	4.5% (chrysotile)	(M)(L)(L)	No control
A65	White pipe elbow insulation	#21 Corridor 3	Fair	65% (chrysotile)	(L)(M)(M)	Control
A66	White pipe insulation	#21 Corridor 3	Fair	65% (chrysotile)	(L)(M)(M)	Control
A67	White pipe insulation	#21 Corridor 3	Fair	25% (chrysotile)	(L)(M)(M)	Control



SAMPLE	DESCRIPTION	LOCATION	CONDITION	RESULT	RISK EXPOSURE ACCESSIBLE (CONDITION) (FRIABILITY)	CONTROL REQUIRED
A68	White pipe insulation	#21 Corridor 4	Poor	60% (chrysotile)	(L)(M)(H)	Immediate
A69	Brown Vermiculite	#38A Ceiling	Good	0.5% (actinolite)	(L)(L)(H)	Control
A70a	Brown furnace floor tile	#38A Room 1	Fair	1.3% (chrysotile)	(M)(M)(L)	Control
A72	White window caulking	#40 South window	Poor	3.1% (chrysotile)	(M)(H)(L)	Control
A74	Off white tile floor	#54 Entrance	Poor	1.9% (chrysotile)	(H)(H)(L)	Immediate
A75	Brown Vermiculite	#54 Walls/ceiling	Poor	0.25% (actinolite)	(H)(H)(H)	Immediate
A83	Off white office floor tile	#52 Main floor	Poor	2.4% (chrysotile)	(H)(M)(L)	Control
A87	White window glazing shop window	#52 South window	Fair	1.3% (chrysotile)	(M)(M)(L)	Control
A88	Brown Vermiculite	#41 Attic	Good	0.57% (actinolite)	(L)(L)(H)	Control
A89	Brown Vermiculite	#41 Attic	Good	0.30% (actinolite)	(L)(L)(H)	Control
A90	Brown Vermiculite	#2 Attic	Good	0.25% (actinolite)	(L)(L)(H)	Control
A91	Brown Vermiculite	#2 Attic	Good	Trace (actinolite)	(L)(L)(H)	Control
A92	Brown Vermiculite	#38A Attic	Good	0.25% (actinolite)	(L)(L)(H)	Control
A93	Brown Vermiculite	#38A Attic	Good	0.5% (actinolite)	(L)(L)(H)	Control

According to the above risk assessment the following ACM items should be dealt with immediately:

#21 Administration

- Any ACM pipe insulation which is exposed (pipe wrap damaged or missing)
- Sample A68 in the corridor 4 ceiling has exposed pipe insulation

#54 Animal Hospital

- Vermiculite insulation leaking out of the walls/ceiling
- Severely damaged floor tile in the entrance hallway



3.5 CONCLUSIONS

➤ ASBESTOS

- The **plumbing insulation**, in the #21 Administration building, around the pipe elbows and along the pipes contains from 25% to 65% chrysotile asbestos.
 - The amount of asbestos insulation around the piping is not estimated because there was only limited access to the mechanical areas which contain the ACM insulation.

Any ACM plumbing insulation which is exposed or damaged (the protective wrap has been damaged or removed) may cause a high risk of exposure to occupants.

- The **vermiculite insulation** in several of the buildings contains up to 0.75% actinolite asbestos.

The ACM vermiculite insulation is located in the attics of Residence #2, #38A Beef unit office & garage, #41 Beef unit residence, #38A Beef unit office & garage and the walls/ceiling of the #54 Animal hospital

The vermiculite insulation poses a relatively high risk of exposure when it is disturbed because it is highly friable.

- Some of the **drywall mud** tested in #2 Residence contains trace to 2.9% chrysotile asbestos. All areas of the building contain various amounts of drywall on either the walls or ceiling. The drywall in the basement and washroom in the bathtub area appeared newer and the drywall mud is not suspected to contain asbestos.
 - This house has and is undergoing renovation. Unless the date of drywall replacement is known, or the drywall in the immediate area of renovation is tested, it is assumed all drywall mud on the main floor contains asbestos.
- There are three different patterns of **floor tiles** that contain up to 6.3% chrysotile asbestos. The tile patterns are: brown streak, off white, green/black and brown. There was no asbestos found in the associated mastic or leveling compound.

The green/black tiles are located in the #21 Administration building. The brown tiles are located in furnace room of #38A Beef unit office. The off white tiles are located in #52 Machine and vehicle repair shop main floor office and #54 Animal hospital entrance. The brown streak floor tiles are located #53 Headerhouse AV room and office 3E.

ACM floor tiles without asbestos in the mastic pose a low risk of exposure as long as they are in good condition.



- The brown and pink/brown **transite boards** contain 30% to 35% chrysotile asbestos. The ACM panel boards observed were all in good condition. They are contained in the boiler room of the #53 Headerhouse.

The panel boards pose a low risk of exposure because they are moderately accessible by maintenance staff only and are non-friable.

The panel boards are a low hazard as long as they are not disturbed. If the boards need to be disturbed by cutting, drilling, etc. they will release asbestos fibres and become a high risk hazard.

- There is an **insulating coating under the sink** located in the AV room of #53 Headerhouse that contain asbestos.

There is a low asbestos content, low friability and low accessibility and this sink insulation does not pose a risk to occupants.

- There is **exterior caulking** located on the #40 Beef test barn south window which contains 3.1% chrysotile asbestos. It is assumed all windows in the test barn are similar and all contain asbestos in the caulking.

The caulking has a low asbestos content and low friability; however it is in poor condition. This may pose a risk of exposure due to its poor condition.

- The white **window glazing** on the south shop window of the #52 Machine and vehicle repair shop contains 1.3% chrysotile asbestos.

The window glazing has a low asbestos content and low friability; however it is in poor condition. This may pose a risk of exposure due to its poor condition.

➤ **LEAD**

- **White** paint on the exterior of several buildings including the #10 machine pole barn, the window frames of the #21 Administration building #38A Beef unit office and garage, #38 Beef unit pump house and the #41A Beef unit residence shed. Lead containing paint was also found in the interior of the #54 Animal hospital and the #41 Beef unit residence shed and #38A garage.
- **Dark green** paint on the exterior trim of the #2 Residence and #2A Residence garage.

Lead based paint does not pose a risk unless it is disturbed and lead dust is created enabling the lead to become airborne. The lead dust can become a hazard because it can be ingested or inhaled.



➤ **PCBs**

There are no suspect materials which may contain PCBs.

➤ **MERCURY**

Fluorescent light tubes in the fluorescent light fixtures may contain varying amounts of mercury vapor, even newly purchased tubes/bulbs. There are hundreds of fluorescent tubes and some compact fluorescent bulbs throughout the buildings.

There was one mercury thermostat in #2 Residence, three in #21 Administration Building, one in #38A Office and garage, two in #52 Vehicle & Machine Repair, one in #53 Header House and one in the #54 Animal Hospital. There are three mercury thermostats in the #21 Administration building and one in the #53 header house.

➤ **OZONE DEPLETING SUBSTANCES**

Many of the ODS in the building have already been inventoried and many have been removed. There was one suspect fridge in the #52 Machine and vehicle repair shop and a chiller for the cooler in located in the #54 Animal hospital.

➤ **RADIOACTIVE MATERIALS**

Three radioactive smoke detectors were found on the subject site, one in #2 Residence and two in the #41 Beef unit residence.

➤ **MISCELLANEOUS CHEMICALS**

Miscellaneous chemicals such as various laboratory chemicals, paint, solvents, rat/mouse poisons, oils, anti-freeze, fuel, fertilizer, ATF, WD-40, etc. were observed on site.

Miscellaneous chemicals were observed at #10 Pole Barn, #21 Administration, #38A Office and Garage, #52 Machine and Vehicle and #54 Header House.

➤ **MOULD**

Water damage which can lead to mould growth was observed at the following locations: #21 Administration building; attic (leak on west side), 118 office (south wall) and 120 office (south wall).

➤ **PHENOLS**

One representative sample was taken of creosote treated wood and the sample was within the guidelines for disposal at an appropriate landfill.



➤ **OTHER**

PESTS

Building #2 Residence and 2A Garage have rodents causing a buildup of fecal matter.

Building #54 Animal Hospital contained a substantial amount of bird feces in the attic.

SPILLS/STAINS

Building #10 Machine Pole Barn has some suspected hydrocarbon staining on the dirt floor.



3.6 RECOMMENDATIONS

➤ ASBESTOS

The table below summarizes the extent and potential impact of the asbestos in the building.

Table 24: Extent and Recommendations of ACM for Lacombe

ACM	EXTENT	IMPACT*
No Issues (currently)		Caution
#2 Residence		
Vermiculite Insulation	Attic (200 m ²)	The vermiculite insulation is undisturbed. If the asbestos containing vermiculite remains undisturbed there is little risk to occupants. If personnel are required to access this area, they must wear proper personal protective equipment (PPE) to avoid potential exposure to airborne fibres. Abatement should be considered where maintenance work is required that may disturb the vermiculite.
Drywall Mud	Entire main floor Estimated: 334 m ²	The majority of the drywall mud was in good condition. If the drywall mud is in good condition and not disturbed there is low risk of exposure. If the condition of the drywall deteriorates, or there are renovations, there is a higher risk of exposure and the drywall mud should first be abated.
#21 Administration		
Floor Tiles	3 offices (green/black tiles) Estimated: 30 m ²	The floor tiles are in good condition. As long as the tiles are in good condition, there is low risk. Any damaged tiles should be removed and replaced.
Elbow/pipe Insulation	Building mechanical areas	There was exposed pipe insulation in corridor 4. There is a high risk to occupants when the ACM wrap is damaged or the ACM is exposed. All damaged or exposed ACM insulation should be abated.
#38A Beef unit garage		
Floor Tiles	Room 1 (Brown tiles) Estimated: 0.5 m ²	The tiles are in good condition and located under a furnace. As long as the tiles are in good condition, there is low risk. Any damaged tiles should be removed and replaced.
Vermiculite Insulation	Attic (125 m ²)	The vermiculite insulation is undisturbed. If the asbestos containing vermiculite remains undisturbed there is little risk to occupants. If personnel are required to access this area, they must wear proper personal protective equipment (PPE) to avoid potential exposure to airborne fibres. Abatement should be considered where maintenance work is required that may disturb the vermiculite.
#40 Beef unit test barn		
Exterior Caulking	Beef test barn-south windows 41 windows	The exterior caulking is located in a relatively unused area but it is in poor condition. There is little risk to the occupants.



#41 Beef unit residence		
Vermiculite Insulation	Attic (140 m ²)	The vermiculite insulation is undisturbed. If the asbestos containing vermiculite remains undisturbed there is little risk to occupants. If personnel are required to access this area, they must wear proper personal protective equipment (PPE) to avoid potential exposure to airborne fibres. Abatement should be considered where maintenance work is required that may disturb the vermiculite.
#52 Machine and vehicle repair		
Window Glazing	South window 1 window	The exterior glazing is located in a relatively unused area and is in fair condition. As long as there is no disturbance to the ACM there is low risk to occupants.
Floor Tiles	Main floor office (off-white tiles) Estimated: 8 m ²	The tiles were in average condition. As long as the tiles are in good/average condition, there is low risk. If any tiles become damaged tiles should be removed and replaced.
#53 Header house		
Transite Boards	Boiler room Estimated: 115 m ²	The panels are in good condition. The panel boards are only accessible by maintenance staff. They are low risk as long as they are not disturbed by cutting, hammering, drilling, etc. All maintenance staff should be educated and trained regarding this ACM.
Floor Tiles	AV room 2E, Office 3E (Brown streak tiles) Estimated: 120 m ²	The tiles were in average condition. As long as the tiles are in good/average condition, there is low risk. If any tiles become damaged tiles should be removed and replaced.
Sink insulation	AV room 2E Estimated: 1 sink	The sink insulation is in good condition and was observed in a cabinet. There is low risk as long as the insulation is not disturbed. Controls should be implemented to ensure the non-disturbance of this ACM, including the restriction of storage of items under the sinks.
#54 Animal hospital		
Vermiculite Insulation	Animal hospital (attic: 100 m ²) (walls: 72 m ²)	There is a high risk to occupants if the ACM is exposed and disturbed. ACM is present in the attic and walls. The animal hospital walls and ceiling are compromised and the vermiculite is leaking onto the floor. This area has a high risk of exposure and should be abated as soon as possible. If the area cannot be abated, the vermiculite should be cleaned up (by qualified personnel) and the compromised walls and ceiling repaired before entry of unprotected personnel.
Floor Tiles	Entrance floor (off-white tiles) Estimated: 2 m ²	As long as the tiles are in good condition, there is low risk. The majority of the tiles were in poor condition and lifting from the floor. These tiles should be abated.

*NOTE: any ACM materials must only be handled/abated by trained and experienced personnel.

Only ACM in poor condition (i.e. damaged or friable) or that could be disturbed during renovation, maintenance, or other activities, requires abatement.

Asbestos abatement must be carried-out by qualified personnel who are experienced and trained in asbestos removal. Air monitoring and inspections must be completed during the abatement to ensure the safety of the abatement personnel and any unprotected persons in the area.

A management plan needs to be developed to address any ACM remaining on site.



An inventory of all asbestos containing materials should be maintained, and updated whenever any ACM is abated. An inspection of all ACM should be conducted on a regular basis, at least annually, to identify any change in the condition of the ACM.

Maintenance staff and contractors should be made aware, either by labeling of ACM, or by training, of the location of existing ACM, so that is not accidentally disturbed during any renovation or maintenance work.

➤ **LEAD**

There are several areas which contain lead based paint in the buildings. Lead based paint does not pose a risk unless it is disturbed and dust is created allowing for the lead to become airborne. The table below summarizes the locations and extent of the lead based paint.

Table 25: Extent and Recommendations of Lead Based Paint for Lacombe

LEAD PAINT	EXTENT	IMPACT*
#2 Residence		
Exterior Dark green	Trim Total Estimate: 2 man doors and 10 windows	<p>There is little risk to occupants as long as the paint remains in good to fair condition and is not disturbed. Disturbance of lead based paint causes the release of lead in the dust.</p> <p>If the lead based paint is to be disturbed, then the workers must wear appropriate PPE.</p> <p>When there is disposal of the lead based paint materials the landfill must be notified of the lead content of the paint. The landfill may require abatement or further testing of the lead paint before disposal, if the paint is in poor condition.</p>
#2A Garage		
Exterior Dark green	Trim Total Estimate: 1 man door, 1 garage door and 2 windows	
#10 Machine pole barn		
Exterior White	Exterior paint on barn Total Estimate: 650 m ²	
#21 Administration		
Exterior White	Window frames and door frames Total Estimate: 100 frames	
#38 Beef unit pump house		
Exterior White	Exterior Total Estimate: 50 m ²	
#38A Beef unit office and garage		
Exterior White	Exterior Total Estimate: 150 m ²	
#41A Beef unit residence shed		
Exterior White	Exterior Total Estimate: 40 m ²	
#54 Animal hospital		
Interior White	All interior walls excluding the cooler Total Estimate: 200 m ²	

*NOTE: any lead based materials must only be handled/abated by trained and experienced personnel.
PPE: personal protective equipment



➤ **PCBs**

There were no suspect materials observed which may contain PCBs.

➤ **MERCURY**

Fluorescent light tubes in the fluorescent light fixtures may contain varying amounts of mercury vapor, even newly purchased tubes/bulbs. There are several hundred of fluorescent tubes and some compact fluorescent bulbs throughout the buildings. All fluorescent lights should be stored to protect from breakage and recycled accordingly.

There was one mercury containing thermostat in the #2 Residence, three in the #21 Administration Building, two in #52 Vehicle & Machine Repair, one in #53 Header House and one in #54 Animal Hospital.

As long as the mercury containing materials are in good condition and not damaged and mercury remains enclosed (not leaking) there is low risk to occupants. Any mercury items should be recycled and disposed of according to current regulations.

A best practice would be to replace the mercury containing thermostats with non-mercury containing units. These newer units are also typically more energy efficient than older mercury-containing units.

➤ **OZONE DEPLETING SUBSTANCES**

Many of the ODS in the building have already been inventoried and many have been removed. One fridge was located in the #38 Beef unit pumphouse and the #52 Machine and vehicle repair shop. A chiller for the cooler is located in the #54 Animal hospital. The ODS units should be recycled/recovered by a qualified and experienced worker according to Ozone Depleting Substances and Halocarbons Regulations.

➤ **RADIOACTIVE MATERIALS**

Three radioactive smoke detectors were found on the subject site, one in #2 Residence and two in the #41 Beef unit residence and.

When radioactive materials are not in use and are to be disposed of they should be disposed of according to the current regulations of the Nuclear Safety Control Act and Nuclear Substances and Radiation Devices Regulations.

Radioactive smoke detectors, in quantities of 10 or less, may be disposed in normal household garbage.



➤ **MISCELLANEOUS CHEMICALS**

All miscellaneous chemicals need to be disposed of and stored according to current regulations and manufactures recommendations.

➤ **MOULD**

Water damage which may lead to mould growth, was observed at the following locations in the #21 Administration building: attic (leak on west side), 118 office (south wall) and 120 office (south wall).

It is recommended that the source of the water leakage be determined and repaired, and any water damaged materials which are potential sources of mould growth, be abated.

➤ **OTHER**

PESTS

#2 Residence has mouse feces in the attic and a mouse infestation in the #2A garage. #54 Animal Hospital has bird feces in the attic.

A qualified pest control contractor should be brought in to eliminate the problem. If this involves entering attic spaces, or disturbing ACM vermiculite insulation, the contractor will need to ensure that the workers are adequately protected from exposure to airborne fibres. The feces should be cleaned up by experienced and trained personnel.

Since the affected attic areas contain ACM vermiculite, the cleaning should only be done by qualified personnel as an ACM abatement activity.

#54 Animal Hospital attic space should be boarded off or wire put up to restrict the birds entry into this area.

SPILLS/STAINS

#10 Machine Pole Barn has some suspected hydrocarbon staining on the dirt floor. Phase I Environmental Site Assessments should be completed to address this stain and other areas of potential contamination.

If any other suspect materials become exposed during demolition or maintenance activities, the suspect materials should be tested.

Procedures for hazardous materials identified in this report should be developed and communicated to anyone who may come in contact with these materials. Also, anyone who may come in contact with hazardous materials should be informed on how to identify where the hazards may be present and how to proceed if they observe some suspect materials.



A management and monitoring plan should be developed and implemented to address the hazardous materials identified in this report and any possible future hazardous materials which may be encountered.



4.0 BEAVERLODGE

The following are the results of the investigation at the Beaverlodge Research Centre. Please refer to Appendix 2 for a detailed room description, sampling diagrams, a photographic log and a copy of the laboratory reports.

4.1 SCOPE OF WORK

The hazardous materials assessment includes:

- assessment and sampling of suspect materials which may contain asbestos and lead based paint;
- assessment of polychlorinated biphenyls (PCB), mercury, ozone-depleting substances (ODS), radioactive materials and mould;
- analysis and reporting of findings with recommendations.

4.2 SITE DESCRIPTION

The subject site is located at the Beaverlodge Research Center situated just south of the Town of Beaverlodge, AB. The site consists of seventeen different buildings, only fourteen of which are included in this audit.

#1 ADMINISTRATION OFFICE

The administration block is a two-story building with a basement. The exterior is stucco with small white rocks and the roof is tar and gravel. The second floor is all offices and the main floor is a combination of offices, storage and conference rooms. The basement is a combination of offices/conference room with some storage, furnace room and a computer room. There was an addition to the west side of the building in the 1970's. The "older" east side has plaster walls on the 1st and 2nd floor but drywall in the basement. The "newer" side has drywall for all 3 levels. The flooring was either carpet or linoleum and/or floor tiles on concrete or wood. The administration building was originally constructed in 1951 and has an area of 750 m².

#10 CANOLA LABORATORY

This is a two-story building with mixed construction consisting of cement stucco exterior walls and asphalt shingles on the roof. The interior walls and ceiling was wood frame with drywall. The second floor is mainly offices and storage space. The basement was for storage and also contained the boiler/furnace room. The main floor was a laboratory with chemical storage. Due to a recent flood, there was a mould problem in the basement which was addressed under a separate cover. The lab was constructed in 1957 and has an area of 562 m².



#14 SOILS RESEARCH BUILDING

The building is a two-story building with mixed construction consisting of the cement stucco exterior walls and a gravel/tar roof. The second floor is mainly offices and labs. The main floor was a laboratory with storage. The soils building was constructed in 1930 and has an area of 328 m². This building was slated for demolition and there were no occupants at the time of the assessment.

#15 ECOLOGY BUILDING

The three-story building consists of exterior wood siding, painted white and interior wood framing and wood walls. This building was considered a "heritage" building. There are cedar shingles on the roof and a concrete floor. The third floor is used for storage and the second and main floors are mainly used as a laboratory and for storage. The ecology building was constructed in 1947 and has an area of 415.5 m².

#17 CARPENTER SHOP

The building consists of exterior wood siding, painted blue and interior wood framing and drywall walls. There is asphalt sheeting on the roof and a concrete floor. This is a one-story building with a mezzanine and a basement. There was a rupture in the ceiling with vermiculite leaking out. The shop was constructed in 1951 and has an area of 232 m².

#18 APICULTURE LABORATORY

The building consists of exterior wood siding, painted white and interior wood framing and drywall walls. The asphalt shingles on the roof are newer. This is a two-story laboratory with several walk-in coolers on the main floor. The attic insulation is vermiculite. The apiculture lab was constructed in 1958 and has an area of 208 m².

#25 HONEY EXTRACTION BUILDING

The building has exterior walls consisting of brown and yellow metal siding and a metal roof. The interior walls and ceiling consist of wood plywood, metal and fiberglass insulation. The floor is bare concrete and water damage was noted on the washroom ceiling. The extraction building was constructed in 1962 and has an area of 245 m².

#26 STORAGE

The building has exterior walls consisting of green metal siding and a metal roof. The interior walls and ceiling consist of drywall. The floor is concrete, painted gray and mould was noted on some pipes along the walls in the threshing room. There was significant water damage in this building. Vermiculite insulation was noted in the attic. The space was mainly used as a laboratory, office space and storage. The storage building was constructed in 1966 and has an area of 985.5 m².



#35 GARAGE

The building has exterior walls consisting of yellow metal siding and a metal roof. The interior walls were pressboard and panel board. Vermiculite insulation was noted in the exterior wall cavities and the floor is concrete and tile. The building was used for offices as well as storage. The garage was constructed in 1971 and has an area of 669 m².

#36 FORAGE BUILDING

The building consists of exterior blue metal siding and a metal roof. Several fridges and coolers are located in the building. The building is used for equipment storage. The forage building was constructed in 1960 and has an area of 209 m².

#39 APICULTURE STORAGE

The building has exterior walls consisting of yellow and brown metal siding and a metal roof. The interior walls and ceiling were painted metal (drywall on south wall only). The building is used to store bee hive cells. The storage building was constructed in 1983 and has an area of 107 m².

#40 SEED STORAGE

The building has exterior walls consisting of yellow and brown metal siding and a metal roof. The interior walls and ceiling were painted metal and there is a bare concrete floor. The building is used to store farm equipment. The storage building was constructed in 1983 and has a total area of 31 m².

CINDER BLOCK STORAGE

The building has exterior walls consisting of cinder block with brown metal trim and asphalt shingles on the roof. The interior walls were cinder block with a drywall ceiling. There is a bare concrete floor and fiberglass insulation in the attic. The building was used for storage. The storage building was constructed in the 1980's and has a total area of 30 m².

#43 SOILS FIELD BUILDING

The building has exterior walls consisting of yellow and brown metal siding and a metal roof. The interior walls and ceiling were painted metal and there is a bare concrete floor. There is an incubator and fridges in the building. The building is used to store farm equipment. The soils building was constructed in 1984 and has an area of 134 m².



#45 CHEMICAL STORAGE

The building has exterior walls consisting of yellow and brown metal siding and a metal roof. The interior walls and ceiling were painted metal and there is a thick bare concrete floor with in-floor heating. The building is used to store chemicals. Chemical spillage containment cisterns are located on the side of the building. The storage building was constructed in 1986 and has an area of 76 m².

For a detailed list of the rooms and construction materials, refer to Appendix 2a.

4.3 RESULTS

4.3.1 ASBESTOS CONTAINING MATERIALS (ACM)

Two hundred and thirty eight samples (including 10 duplicates) of suspected ACM were collected and sent for analysis. The results are summarized in the table below and are contained in Appendix 2.

Table 26: Asbestos Analysis Results Summary for Beaverlodge

SAMPLE	COLOUR	DESCRIPTION	LOCATION (#- BUILDING NO.)	CONDITION	RESULT* (ASBESTOS TYPE)
A1	White/ silver	Sink insulation	#15 south lab sinks	Good	1.4% (chrysotile)
A2	White	Ceiling tile	#15 growth cabinet ceiling	Good	None detected
A3a	White w/gray	9x9 floor tile	#15 south lab floor tile E wall	Good	1.3% (chrysotile)
A3b	Black	Mastic	#15 south lab floor tile E wall	Good	None detected
A4a	White w/gray	9x9 floor tile	#15 south lab floor tile west doorway	Fair	1.2% (chrysotile)
A4b	Black	Mastic	#15 south lab floor tile west doorway	Fair	None detected
A5	White w/gray	9x9 floor tile	#15 south storage	Fair	1.3% (chrysotile)
A6	White	Ceiling tile	#15 south storage ceiling	Good	None detected
A7a	White/ blue	12x12 floor tile	#15 west door way	Poor	1.8% (chrysotile)
Dup 4 (A7a)	White/ blue	12x12 floor tile	#15 west door way	Poor	1.2% (chrysotile)
A7b	Brown	Mastic	#15 west door way	Poor	None detected
Dup 4 (A7b)	Brown	Mastic	#15 west door way	Poor	None detected
A8a	White/ blue	12x12 floor tile	#15 main floor office	Poor	1.6% (chrysotile)
A8b	Yellow	Mastic	#15 main floor office	Poor	None detected
A9	White/ blue	12x12 floor tile	#15 middle of north lab	Poor	1.8% (chrysotile)



SAMPLE	COLOUR	DESCRIPTION	LOCATION (#- BUILDING NO.)	CONDITION	RESULT* (ASBESTOS TYPE)
A10	White	Ceiling tile	#15 north lab ceiling	Poor	None detected
A11	Gray	Counter top	#15 north lab counter on north wall	Fair	20% (chrysotile)
A12	Gray	Counter top	#15 north lab counter on east wall	Fair	None detected
A13	Gray	Cement board – fume hood	#15 north lab fume hood	Good	None detected
A14	Gray	Cement board – acid cabinet	#15 north lab inside acid cabinet under fume hood	Good	None detected
Dup 1 (A14)	Gray	Insulation board	#15 north lab inside acid cabinet under fume hood	Good	None detected
A15	Yellow	Drywall mud	#15 utility room NW corner	Good	1.4% (chrysotile)
A16	Yellow	Drywall mud	#15 utility room SW corner	Good	1.6% (chrysotile)
A17	White	Fibre board	#15 hallway bulletin board	Good	None detected
A18	White w/blue	12x12 floor tile	#15 hallway utility room	Fair	2.1% (chrysotile)
A19	White	Ceiling tile	#15 main floor east entrance	Good	None detected
A20	Gray	Counter top	#15 2nd floor table adjacent stairs north	Poor	15% (chrysotile)
A21	Green	Counter top	#15 2nd floor table adjacent stairs east	Fair	20% (chrysotile)
A22	Brown	Counter top	#15 2 nd floor cabinet counter on east wall	Fair	None detected
A23	Black	Counter top	#15 2 nd floor table on south wall	Poor	None detected
A24	White	Insulation board	#15 door between 1 st & 2 nd floor	Poor	None detected
A25	White	Insulation board	#15 ceiling south of 3 rd floor stairs	Good	None detected
A26	White/ brown	Fibre board	#15 2 nd floor walls SE corner	Fair	None detected
A27	White/ brown	Fibre board	#15 2 nd floor walls NE corner	Fair	None detected
A28	White/ brown	Fibre board	#15 2 nd floor walls NW side	Fair	None detected
A29	Black	Tar paper	#15 2 nd floor south east end	Good	None detected
A30	Black	Tar paper	#15 main floor south storage ceiling	Good	None detected
A31a	Green	Linoleum	#15 main floor office	Good	None detected
A31b	Tan	Mastic	#15 main floor office	Good	None detected
A32	Green	Levelling compound	#15 middle of north lab	Good	None detected



SAMPLE	COLOUR	DESCRIPTION	LOCATION (#- BUILDING NO.)	CONDITION	RESULT* (ASBESTOS TYPE)
Dup 5 (A32)	Green	Levelling compound	#15 middle of north lab	Good	None detected
A33	Brown	Linoleum	#1 main floor east door shoe rack	Fair	25% (chrysotile)
A34	White	Plaster	#1 basement east stairwell	Good	None detected
A35	Blue	Drywall mud	#1 basement office ceiling	Good	None detected
A36	Blue speckle	Sheet linoleum	#1 basement office at floor drain	Good	None detected
A37	White	Drywall mud	#1 basement hall	Poor	2.4% (chrysotile)
A38	White	Pipe wrap	#1 basement library tape on fiberglass insulation	Good	None detected
A39	White	12x12 holes ceiling tile	#1 basement library north strip	Good	None detected
Dup 2 (A39)	White	12x12 holes ceiling tile	#1 basement library north strip	Good	None detected
A40	White	12x12 grid ceiling tile	#1 basement library ceiling	Good	None detected
A41	Brown w/white	9x9 brown/white floor tile	#1 basement hallway floor	Fair	1.6% (chrysotile)
A42	White	Drywall mud	#1 basement furnace room	Good	1.8% (chrysotile)
A43	Yellow	Insulating board	#1 make-up air duct basement	Good	None detected
A44	Silver	Sink insulation	#1 basement furnace room	Fair	None detected
A45	White	12x12 holes ceiling tile	#1 basement storage room	Good	None detected
A46	Silver	Sink insulation	#1 basement dark room	Good	1.4% (chrysotile)
A47	Black	Fibre board	#1 basement dark room	Good	None detected
A48	Blue	Blue speckle sheet linoleum	#1 basement storage room	Good	None detected
A49	Brown	Squares linoleum	#1 basement conference room	Good	25% (chrysotile)
A50	White	12x12 holes ceiling tile	#1 basement conference room	Good	None detected
A51	White	Drywall mud	#1 basement conference room SW corner	Good	1.3% (chrysotile)
A52	White	Drywall mud	#1 basement kitchen SE corner	Good	1.2% (chrysotile)
A53	Bronze	Sink insulation	#1 basement kitchen sink	Good	1.3% (chrysotile)
A55	White	12x12 holes ceiling tile	#1 main floor hall (middle)	Good	None detected



SAMPLE	COLOUR	DESCRIPTION	LOCATION (#- BUILDING NO.)	CONDITION	RESULT* (ASBESTOS TYPE)
A56	Brown	Squares linoleum	#1 main floor storage east	Poor	25% (chrysotile)
A57	White	12x12 holes ceiling tile	#1 main floor office 6 SE corner	Good	None detected
A58	Green	Plaster	#1 main floor reception closet	Good	None detected
A59	Green	Plaster	#1 main floor office 1 SW corner	Good	None detected
A60	White	Ceiling texture	#1 main floor hall in front of reception	Good	3.5% (chrysotile)
A61	White	Ceiling texture	#1 main floor hall at east stairs	Good	3.3% (chrysotile)
A62	White	Ceiling texture	#1 main floor office 3 SW area	Good	3.8% (chrysotile)
A63	White	12x12 holes ceiling tile	#1 main floor office 5 SW corner	Good	None detected
A64	White	12x12 holes ceiling tile	#1 main floor reception north	Good	None detected
A65	Pink	Plaster	#1 main floor office 3 SW corner	Good	None detected
A66	White	Drywall mud	#1 2 nd floor attic access	Good	None detected
A67	White	Drywall mud	#1 2 nd floor office 25 south wall	Good	None detected
A68	White	Drywall mud	#1 2nd floor office 20 NW corner	Good	1.3% (chrysotile)
A69	Brown	Insulating paper	#1 2 nd floor attic access	Good	None detected
A70	Multi	Stucco	#1 exterior main entrance	Good	1.3% (chrysotile)
A71	Multi	Stucco	#1 exterior main entrance	Good	1.4% (chrysotile)
A72	Multi	Stucco	#1 exterior main entrance	Good	1.3% (chrysotile)
Dup 3 (A72)	Multi	Stucco	#1 exterior main entrance	Good	1.2% (chrysotile)
A73	White	12x12 grid ceiling tile	#1 basement library west	Good	None detected
A74	White	12x12 grid ceiling tile	#1 basement library NE	Good	None detected
A75	Brown/ white	9x9 floor tile	#1 basement hallway	Fair	1.6% (chrysotile)
A76	Gray	Cement	#1 exterior under stucco NE corner	Good	0.3% (chrysotile)
A77	Gray	Cement	#1 exterior under stucco N wall	Good	None detected
A78	Gray	Cement board	#18 basement cooler #1 outside wall	Good	None detected
A79	Gray	Caulking	#18 basement cooler #2 inside	Good	10% (chrysotile)
A80	Gray	Cement board	#18 basement cooler #2 inside wall	Good	None detected



SAMPLE	COLOUR	DESCRIPTION	LOCATION (#- BUILDING NO.)	CONDITION	RESULT* (ASBESTOS TYPE)
A81	Gray	Cement board	#18 basement cooler #4 ceiling	Good	None detected
A82	Black	Door seal	#18 basement cooler #2 door	Good	None detected
A83	Gray	Parchment	#18 stairwell on south wall	Good	None detected
A84	Brown	Squares linoleum	#18 south lab	Good	None detected
A85	White	Insulation	#18 south lab sink insulation	Good	None detected
A86	Gray	Cement board	#18 north lab fume hood	Good	None detected
A87	Gray	Parchment	#18 exterior on concrete	Good	None detected
A88	Black	Tar paper	#18 exterior SW corner	Good	None detected
A89	Brown	Vermiculite	#18 attic north	Good	0.14% (actinolite)
A90	Brown	Vermiculite	#18 attic south	Good	0.87% (actinolite)
A91	Brown	Vermiculite	#18 attic east	Good	0.93% (actinolite)
A92	Gray	Mortar	#18 chimney on north side of building	Fair	None detected
A93	Brown	Fibre board	#10 2 nd floor office 1 bulletin board	Good	None detected
A94	Brown streak	Floor tile	#10 2 nd floor office 10	Good	None detected
A95	Brown streak	Floor tile	#10 2 nd floor office 8	Good	None detected
A96	Black/ silver	Light insulation	#10 2nd floor office 4 light fixture backing	Good	95% (chrysotile)
A97	White/rose	Linoleum	#10 2 nd floor washrooms	Fair	None detected
A98a	Brown	12x12 floor tile	#10 2nd floor office 5	Good	1.4% (chrysotile)
A98b	Yellow	Mastic	#10 2 nd floor office 5	Good	None detected
A98c	Tan	Fibrous	#10 2 nd floor office 5	Good	None detected
A99	White	12x12 grid ceiling tile	#10 2 nd floor hallway middle	Good	None detected
A100	White	12x12 grid ceiling tile	#10 2 nd floor hallway NE	Good	None detected
A101	White	12x12 grid ceiling tile	#10 main floor at breaker box	Good	None detected
A102	Silver/ black	Light insulation	#10 main floor storage light	Good	50% (chrysotile)
A103	Brown/ black	Wall tile	#10 main floor entrance hall	Good	None detected
A104	White	Fibre board	#10 main floor hall bulletin board	Good	None detected
A105	White	12x12 grid ceiling tile	#10 main floor SW lab	Good	None detected
A106	White	12x12 grid ceiling tile	#10 main floor SE lab east wall	Good	None detected



SAMPLE	COLOUR	DESCRIPTION	LOCATION (#- BUILDING NO.)	CONDITION	RESULT* (ASBESTOS TYPE)
A107	Gray	Wall tile	#10 main floor SW lab	Good	None detected
A108	Green	Floor tile	#10 main floor between SW and NW lab	Good	None detected
A109	Gray	Cement board	#10 main floor NW lab fume hood	Good	None detected
A110	Gray	Cement board	#10 main floor NW lab sink back splash	Fair	None detected
A111	Brown	Fibre board	#10 main floor N entry stairwell	Good	None detected
A112a	Yellow	Floor tile	#10 NW entry upstairs	Fair	None detected
A112b	Black	Mastic	#10 NW entry upstairs	Fair	None detected
A113a	Multi brown	Floor tile	#10 NW entry stair runner down	Fair	None detected
A113b	Black	Tar paper	#10 NW entry stair runner down	Fair	None detected
A114a	Light brown	9x9 floor tile	#10 basement storage 7	Poor	2.0% (chrysotile)
A114b	Black	Mastic	#10 basement storage 7	Poor	None detected
A115a	Dark brown	9x9 floor tile	#10 basement storage 7	Poor	3.25% (chrysotile)
A115b	Black	Mastic	#10 basement storage 7	Poor	None detected
A116a	Light brown	9x9 floor tile	#10 basement storage 8	Poor	2.25% (chrysotile)
A116b	Black	Mastic	#10 basement storage 8	Poor	None detected
A117a	Dark brown	9x9 floor tile	#10 basement storage 8	Poor	2.5% (chrysotile)
A117b	Black	Mastic	#10 basement storage 8	Poor	None detected
A118	Black	Caulking	#10 basement cooler storage 5	Good	25% (chrysotile)
A119	Gray	Caulking	#10 basement cooler storage 5	Good	10% (chrysotile)
A120	White	Pipe insulation	#10 basement storage 4	Good	50% (chrysotile)
Dup 6 (A120)	White	Pipe insulation	#10 basement storage 4	Good	85% (chrysotile)
A121	White	Insulation	#10 basement furnace	Poor	65% (chrysotile)
A122	Gray/ green	Floor levelling compound	#10 basement storage 9	Poor	None detected
A123	White	Drywall mud	#10 basement storage 6	Poor	None detected
A124	White	Drywall mud	#10 basement storage 7 closet	Poor	None detected
A125	White	Drywall mud	#10 basement hall	Poor	None detected
A126	White	Drywall mud	#10 2nd floor office 6 closet	Good	1.5% (chrysotile)



SAMPLE	COLOUR	DESCRIPTION	LOCATION (#- BUILDING NO.)	CONDITION	RESULT* (ASBESTOS TYPE)
A127	White	Drywall mud	#10 2 nd floor janitor closet	Good	Sample not analyzed
A128	White	Drywall mud	#10 2nd floor storage closet	Good	1.25% (chrysotile)
A129	White	Drywall mud	#10 main floor under electrical box	Good	1.5% (chrysotile)
A130	White	Drywall mud	#10 main floor NW entrance	good	None detected
A131	White/gray	Stucco/cement	#10 exterior N wall entrance	Good	None detected
A132	White/gray	Stucco/cement	#10 exterior S main entrance	Good	None detected
A133	White/gray	Stucco/cement	#10 exterior NW corner	Good	None detected
A134	Black	Tar paper	#10 exterior N wall entrance	Good	None detected
A135a	Gray	12x12 floor tile	#14 entry tile under linoleum	Fair	1.5% (chrysotile)
A135b	Tan	Mastic	#14 entry tile under linoleum	Fair	None detected
A136	White	12x12 holes ceiling tile	#14 entry ceiling tile	Good	None detected
A137a	White/gray	9x9 floor tile	#14 porch floor	Poor	trace (chrysotile)
A137b	Black	Mastic	#14 porch floor	Poor	None detected
A138	White	Stucco	#14 porch west building wall	Good	None detected
A139	Gray	Cement board	#14 SW lab leaning on wall x 2 boards	Good	25% (chrysotile)
A140	White	Drywall mud	#14 SW lab SW corner	Good	None detected
A141	Bronze	Sink insulation	#14 SW lab sinks	Good	2.3% (chrysotile)
A142	White	12x12 holes ceiling tile	#14 SW lab ceiling	Good	None detected
A143a	White/gray	9x9 floor tile	#14 SW lab floor	Fair	Trace (chrysotile)
A143b	Black	Mastic	#14 SW lab floor	Fair	1.3% (chrysotile)
A144	Gray	Parchment	#14 furnace room N wall	Good	None detected
A145a	Gray/blue	12x12 floor tile	#14 furnace room floor	Fair	None detected
Dup 7 (A145a)	Gray/blue	12x12 floor tile	#14 furnace room floor	Fair	None detected
A145b	Black	Mastic	#14 furnace room floor	Fair	None detected
Dup 7 (A145b)	Black	Mastic	#14 furnace room floor	Fair	None detected
A146	White	Drywall mud	#14 furnace room walls	Fair	2.1% (chrysotile)
A147	White	Sink insulation	#14 washroom sink	Poor	None detected
A148	White	Spackle ceiling tile	#14 washroom ceiling	Good	None detected



SAMPLE	COLOUR	DESCRIPTION	LOCATION (#- BUILDING NO.)	CONDITION	RESULT* (ASBESTOS TYPE)
A149	Black/white	Insulating fabric	#14 storage ceiling	Fair	None detected
A150	White	Drywall mud	#14 growth chamber room ceiling	Fair	2.1% (chrysotile)
A151	White	Spackle ceiling tile	#14 main floor hall	Good	None detected
A152	Brown	Fibre board	#14 growth chamber room ceiling	Fair	None detected
A153a	Light brown	9x9 floor tile	#14 under stairs floor	Poor	3.5% (chrysotile)
A153b	Black	Mastic	#14 under stairs floor	Poor	1.2% (chrysotile)
A154	Dark brown	9x9 floor tile	#14 under stairs floor	Poor	4.7% (chrysotile)
A155a	Light brown	9x9 floor tile	#14 NW lab floor	Fair	1.5% (chrysotile)
A155b	Black	Mastic	#14 NW lab floor	Fair	Trace (chrysotile)
A156a	Dark brown	9x9 floor tile	#14 NW lab floor	Fair	4.8% (chrysotile)
A156b	Black	Mastic	#14 NW lab floor	Fair	1.2% (chrysotile)
A157	Gray	Cement board	#14 NW lab fume hood	Good	None detected
A158	White	Drywall mud	#14 NW lab ceiling	Fair	1.8% (chrysotile)
A159	White/gray	Parchment	#14 NW lab north wall	Good	None detected
A160	Gray	Sink insulation	#14 NE lab sinks	Good	1.7% (chrysotile)
A161	White	Flat ceiling tile	#14 NE lab ceiling N	Poor	None detected
A162	Brown	Squares sheet linoleum	#14 NE lab west corner	Poor	20% (chrysotile)
A163	White	Flat ceiling tile	#14 NE Lab east	Poor	None detected
A164	White	Flat ceiling tile	#14 NE lab south	Poor	None detected
A165	White	Spackle ceiling tile	#14 hall south end	Good	Sample not received
A166	Gray	Cement board	#14 2nd floor power panel room	Good	25% (chrysotile)
A167a	Dark gray	9x9 floor tile	#14 2nd floor power panel room	Fair	4.8% (chrysotile)
A167b	Black	Mastic	#14 2 nd floor power panel room	Fair	None detected
A168a	Dark gray	9x9 floor tile	#14 2nd floor power panel room	Fair	1.7% (chrysotile)
A168b	Black	Mastic	#14 2 nd floor power panel room	Fair	None detected
A169	White	12x12 holes ceiling tile	#14 lab 1	Fair	None detected
A170	White	Sink insulation	#14 lab 1 sinks	Good	None detected
A171a	White/gray	9x9 floor tile	#14 lab 1 north wall	Poor	1.3% (chrysotile)
A171b	Black	Mastic	#14 lab 1 north wall	Poor	None detected
A172	White	Sink insulation	#14 lab 2 N sink	Poor	None detected



SAMPLE	COLOUR	DESCRIPTION	LOCATION (#- BUILDING NO.)	CONDITION	RESULT* (ASBESTOS TYPE)
A173	White	12x12 holes ceiling tile	#14 lab 2 north ceiling	Poor	None detected
A174a	White/gray	9x9 floor tile	#14 lab 2 NE corner	Poor	0.75% (chrysotile)
A174b	Black	Mastic	#14 lab 2 NE corner	Poor	None detected
A175	White	12x12 holes ceiling tile	#14 2 nd floor hall S wall	Fair	None detected
A176	White/gray	Cement board	#14 2nd floor hall SW corner	Poor	25% (chrysotile)
A177	White/gray	Cement board	#14 office 1 ceiling above stairs	Good	25% (chrysotile)
Dup 8 (A177)	White/gray	Cement board	#14 office 1 ceiling above stairs	Good	25% (chrysotile)
A178	White/gray	9x9 floor tile	#14 office 2nd floor NE corner	Good	1.3% (chrysotile)
A179	White	Stucco	#14 exterior north door	Good	None detected
A180	White	Stucco	#14 exterior SW corner	Good	None detected
A181	Brown/silver	Vermiculite	#17 attic SE access	Good	0.25% (actinolite)
A182	Brown/silver	Vermiculite	#17 attic SE access	Good	0.25% (actinolite)
A183	Brown/silver	Vermiculite	#17 attic SE access	Good	Trace (actinolite)
A184	White	Drywall mud	#17 garage ceiling SE	Good	2.4% (chrysotile)
A185	Brown/silver	Vermiculite	#17 attic SW access	Good	0.25% (actinolite)
A186	White	Drywall mud	#17 office SW corner	Good	1.5% (chrysotile)
A187a	Gray	12x12 floor tile	#17 office door	Good	1.7% (chrysotile)
A187b	Tan	Mastic	#17 office door	Good	None detected
A188a	Light gray	12x12 floor tile	#17 office middle	Good	None detected
A188b	Tan	Mastic	#17 office middle	Good	None detected
A189a	Gray	9x9 floor tile	#17 washroom	Good	1.6% (chrysotile)
A189b	Tan	Mastic	#17 washroom	Good	None detected
A190	White	Drywall mud	#17 washroom NE corner	Good	2.7% (chrysotile)
Dup 9 (A190)	White	Drywall mud	#17 washroom NE corner	Good	1.9% (chrysotile)
A191	White	Caulking	#17 SE window	Poor	None detected
A192	White/ blue	9x9 floor tile	#35 office 1 floor NE	Fair	0.25% (chrysotile)
A193a	Gray/ black	12x12 floor tile	#35 office 1 floor NE	Fair	0.75% (chrysotile)
A193b	Tan	Mastic	#35 office 1 floor NE	Fair	None detected
A194	White	12x12 holes ceiling tile	#35 office 1 ceiling SW corner	Good	None detected



SAMPLE	COLOUR	DESCRIPTION	LOCATION (#- BUILDING NO.)	CONDITION	RESULT* (ASBESTOS TYPE)
A195	White	12x12 flat ceiling tile	#35 washroom ceiling	Good	None detected
A196	White	12x12 holes ceiling tile	#35 main entry west wall	Good	None detected
A197	White	Drywall mud	#35 office 2	Good	None detected
A198	Brown/gray	Vermiculite	#35 cinder block wall	Good	0.46% (actinolite)
A199	Gray	Drywall mud	#26 threshing room south wall	Fair	3.3% (chrysotile)
A200	Gray	Cement Board	#26 threshing room NW enclosure	Good	25% (chrysotile)
Dup 12 (A200)	Gray	Cement Board	#26 threshing room NW enclosure	Good	25% (chrysotile)
A201a	White/ gray	9x9 floor tile	#26 Lab 1 south floor	Good	0.25% (chrysotile)
Dup 11 (A201a)	White/gray	9x9 floor tile	#26 Lab 1 south floor	Good	1.1% (chrysotile)
A201b	Tan	Mastic	#26 Lab 1 south floor	Good	None detected
A202	White/ gray	Duct tape	#26 Lab 1 NE pipe	Good	None detected
A203a	White/ gray	12x12 floor tile	#26 office 1	Good	None detected
A203b	Black	Mastic	#26 office 1	Good	None detected
A204	Gray	Drywall mud	#26 seed storage	Poor	3.2% (chrysotile)
A205	Black	Door seal	#26 cooler door	Poor	None detected
A206	Gray/white	Cement board	#26 furnace room south wall	Good	25% (chrysotile)
A207	Gray	Drywall mud	#26 furnace room east wall	Poor	3.7% (chrysotile)
A208	Gray	Drywall mud	#26 air drying room	Good	2.5% (chrysotile)
A209a	White/gray	9x9 floor tile	#26 office 2 SW corner	Good	0.5% (chrysotile)
A209b	Tan	Mastic	#26 office 2 SW corner	Good	None detected
A210a	White/gray	12x12 floor tile	#26 lab 3 south side	Good	0.75% (chrysotile)
A210b	Tan	Mastic	#26 lab 3 south side	Good	None detected
A211a	White/gray	9x9 floor tile	#26 office 3	Good	Trace (chrysotile)
A211b	Tan	Mastic	#26 office 3	Good	None detected
A212	Gray	Cement counter top	#26 office 3 south and east walls	Good	25% (chrysotile)
A213a	Green	9x9 floor tile	#26 washroom hall north	Poor	0.5% (chrysotile)
A213b	Tan	Mastic	#26 washroom hall north	Poor	None detected
A214a	Green	9x9 floor tile	#26 washroom hall south	Poor	1.3% (chrysotile)
A214b	Black	Mastic	#26 washroom hall south	Poor	None detected
A215a	Green	9x9 floor tile	#26 women's washroom west	Good	0.25% (chrysotile)



SAMPLE	COLOUR	DESCRIPTION	LOCATION (#- BUILDING NO.)	CONDITION	RESULT* (ASBESTOS TYPE)
A215b	Black	Mastic	#26 women's washroom west	Good	None detected
A216	Gray	Drywall mud	#26 woman's washroom west	Poor	3.1% (chrysotile)
A217	Gray	Drywall mud	#26 office 4 east wall	Poor	2.9% (chrysotile)
A218	Gray	Drywall mud	#26 main hall south wall	Poor	2.7% (chrysotile)
A219	White	Caulking	#14 exterior south wall	Poor	None detected
A220	White	Caulking	#14 exterior south window	Poor	None detected
A221	Gray	Parchment	#14 exterior basement wall west	Poor	None detected
A222	Gray	Parchment	#14 exterior basement wall south	Poor	None detected
A223	Gray	Parchment	#14 exterior basement wall east	Poor	None detected
A224	White	Drywall mud	#26 main hall at attic stairs	Poor	2.0% (chrysotile)
Dup 10 (A224)	White	Drywall mud	#26 main hall at attic stairs	Poor	1.2% (chrysotile)
A225	Brown/ silver	Vermiculite	#26 Attic north west	Good	0.75% (actinolite)
A226	Brown/ silver	Vermiculite	#26 Attic middle east	Good	1.25% (actinolite)
A227	Brown/ silver	Vermiculite	#26 Attic south east	Good	1.5% (actinolite)
A228	Brown	Wire insulation	#26 Attic center	Fair	None detected

BOLD – over criteria*

* Criteria: ≥1% asbestos: asbestos containing material as defined by the Alberta Asbestos Abatement Manual, July 2009. Vermiculite is positive for asbestos with asbestos present in any amount.

- all building materials containing more than 1% (by weight) asbestos must be removed prior to demolition (Work Safe Alberta ASB003 – Asbestos Revised July 2009 and OHS Code Part 4) *with some exceptions*

Due to the size and amount of ACM possibly present on this site, representative sampling was conducted. It was not practical or necessary to sample every item which may be an ACM. If the representative samples test positive for asbestos, it is assumed the identical materials, which were not tested, are also positive. For example, the drywall mud and pipe elbow insulation tested positive and therefore all drywall mud and pipe insulation is assumed to be positive for asbestos.

Below is a list of the types of materials sampled and the results for asbestos (# samples positive and/or # samples negative) in brackets.



#1 Administration Office (44 asbestos samples)

- Brown linoleum (1 positive)
- Blue speckle linoleum (2 negative)
- Squares linoleum (2 positive)
- Brown/white 9x9 floor tile (2 positive)
- White pipe wrap (1 negative)
- Drywall mud (5 positive, 4 negative)
- Plaster (3 negative)
- White ceiling texture (3 positive)
- White 12x12 holes ceiling tile (7 negative)
- White 12x12 grid ceiling tile (3 negative)
- Brown insulation paper (1 negative)
- Insulating board (1 negative)
- Silver sink insulation (1 positive, 1 negative)
- Bronze sink insulation (1 positive)
- Fiber board (1 negative)
- Multi colored stucco (3 positive)
- Gray cement (2 negative)

#10 Canola Laboratory (42 asbestos samples)

- White/rose linoleum (1 negative)
- Brown streak floor tile (2 negative)
- Brown 12" x 12" floor tile (1 positive)
 - Yellow mastic (1 negative)
- Green floor tile (1 negative)
- Yellow floor tile (1 negative)
 - Black mastic (1 negative)
- Multi brown floor tile (1 negative)
- Light brown 9" x 9" floor tile (2 positive)
 - Black mastic (2 negative)
- Dark brown 9" x 9" floor tile (2 positive)
 - Black mastic (2 negative)
- Floor leveling compound (1 negative)
- Fiber board (3 negative)
- Drywall mud (3 positive, 5 negative)
- Wall tile (2 negative)
- Grid ceiling tile (5 negative)
- Fume hood cement board (2 negative)
- Light fixture insulation (2 positive)
- Black caulking (1 positive)
- Gray caulking (1 positive)
- Pipe insulation (1 positive)
- Boiler insulation (1 positive)
- Tar paper (1 negative)
- Stucco (3 negative)



#14 Soils Research Building (62 asbestos samples)

- Gray 12 x 12 floor tile (1 positive)
 - Tan mastic (1 negative)
- White/gray 9 x 9 floor tile (2 positive, 3 negative)
 - Black mastic (1 positive, 3 negative)
- Gray/Blue 12 x 12 floor tile (1 negative)
 - Black mastic (1 negative)
- Light Brown 9 x 9 floor tile (2 positive)
 - Black mastic (1 positive, 1 negative)
- Dark Brown 9 x 9 floor tile (2 positive)
 - Black mastic (1 positive)
- Dark Gray 9 x 9 floor tile (2 positive)
 - Black mastic (2 negative)
- Squares sheet linoleum (1 positive)
- Drywall mud (3 positive, 1 negative)
- Transite (cement) board (4 positive)
- Parchment on walls (2 negative)
- Fiber board (1 negative)
- Ceiling tile 12 x 12 (5 negative)
- Spackle ceiling tile (3 negative)
- Flat ceiling tile (3 negative)
- Fume hood cement board (1 negative)
- Bronze sink insulation (1 positive)
- White sink insulation (3 negative)
- Gray sink insulation (1 positive)
- Insulation fabric (1 negative)
- Stucco (3 negative)
- Parchment – exterior (3 negative)
- Window caulking (2 negative)

#15 Ecology Building (37 asbestos samples)

- White/gray 9 x 9 floor tile (3 positive)
 - Black mastic (2 negative)
- White/blue 12 x 12 floor tile (4 positive)
 - mastic (2 negative)
- Green linoleum (1 negative)
 - Tan mastic (1 negative)
- Leveling compound (1 negative)
- Drywall mud (2 positive)
- Fiber board (4 negative)
- Ceiling tile (4 negative)
- Cement board in acid cabinet and fume hood (2 negative)
- Insulation board (2 negative)
- Tar paper (2 negative)
- White/silver sink insulation (1 positive)
- Gray countertop (2 positive, 1 negative)



- Black countertop (1 negative)
- Brown countertop (1 negative)
- Green countertop (1 positive)

#17 Carpenter Shop (14 asbestos samples)

- Gray 12 x 12 floor tile (1 positive)
 - Tan mastic (1 negative)
- Light Gray 12 x 12 floor tile (1 negative)
 - Tan mastic (1 negative)
- Gray 9 x 9 floor tile (1 positive)
 - Tan mastic (1 negative)
- Drywall mud (3 positive)
- Vermiculite (4 positive)
- Exterior window caulking (1 negative)

#18 Apiculture Laboratory (15 asbestos samples)

- Squares linoleum (1 negative)
- Gray parchment (2 negative)
- Gray cement board - fume hood (1 negative)
- Gray cement board – coolers (3 negative)
- Gray caulking – cooler (1 positive)
- White sink insulation (1 negative)
- Black door seal (1 negative)
- Black tar paper (1 negative)
- Brown vermiculite (3 positive)
- Gray mortar (1 negative)

#25 Honey Extraction Building (0 asbestos samples)

#26 Storage (33 asbestos samples)

- Gray/white 9 x 9 floor tile (1 positive, 2 negative)
 - Tan mastic (3 negative)
- White/gray 12 x 12 floor tile (2 negative)
 - Mastic (2 negative)
- Green 9 x 9 floor tile (1 positive, 2 negative)
 - Mastic (3 negative)
- Drywall mud (8 positive)
- Cement board – transite (2 positive)
- Duct tape (1 negative)
- Black door seal (1 negative)
- Cement countertop (1 positive)
- Brown wire insulation (1 negative)
- Brown/silver vermiculite (3 positive)



Note: there was vermiculite observed on the floor, leaking from the ceiling and/or wall, in the seed storage room and furnace room. There was vermiculite distributed throughout in the attic storage area.

#35 Machinery Storage & Repair (8 asbestos samples)

- White/blue 9x9 floor tile (1 negative)
- Gray/black 12x12 floor tile (1 negative)
 - Tan mastic (1 negative)
- White 12x12 holes ceiling tile (2 negative)
- White 12x12 flat ceiling tile (1 negative)
- White drywall mud (1 negative)
- Brown/gray vermiculite (1 positive)

#36 Forage Building (0 asbestos samples)

#39 Apiculture Storage (0 asbestos samples)

#40 Seed Storage (0 asbestos samples)

#43 Soils Field Building (0 asbestos samples)

#45 Chemical Storage (0 asbestos samples)

Cinder block Storage (0 asbestos samples)

Tin Shed (0 asbestos samples)

The following is considered to be ACM (refer to Appendix 2 for room details, diagrams outlining the locations and a photographic log):

#1 Administration

- a shoe rack with a brown patterned **linoleum** (25% chrysotile) located in the east entry way
- **linoleum** with a squares pattern (25% chrysotile) located in the
 - basement rooms: kitchen, conference room and entrance hall to the conference room
 - main floor rooms: storage rooms,
 - 2nd floor rooms: office 18 and 20
- 23 cm x 23cm (9" x 9") brown/white **floor tiles** that contained 2% chrysotile asbestos located:
 - basement rooms: hallway
- **sink insulation** which contain 1.3% chrysotile located on the following sinks:
 - Bronze sink insulation in the basement kitchen
 - Silver sink insulation in the basement dark room



- **white ceiling texture** with up to 3.8% chrysotile located on the main floor hallway ceiling at the main entrance and east towards the stairway
- **drywall mud** in all portions of the building which have drywall which is approximately 50% of the building
- **stucco** located on the exterior of the building which contained up to 1.4% chrysotile asbestos

#10 Canola Laboratory

- brown **floor tiles** (12" x 12") that contained 1% chrysotile asbestos located in office 5 on the 2nd floor
- dark brown and light brown **floor tiles** (9" x 9") that contained 2% chrysotile asbestos located in basement storage rooms 7 and 8 and the hallway leading to these rooms
- **drywall mud** in all portions of the building which have drywall
 - Entire main floor (8 rooms) and 2nd floor (13 rooms) and two rooms in the basement
- **light fixture insulation** located on all the incandescent light fixtures throughout the building
- **black and gray caulking** located in the basement coolers (storage 4 and 5)
- **pipe insulation** located in the basement coolers (storage 4 and 5)
- **boiler insulation** located around the boiler in the basement furnace room

#14 Soils Research Building

- **linoleum** with a squares pattern (20% chrysotile) located in the
 - 1st floor rooms NE lab, hallway, growth chamber room, entry way and washroom
- gray **floor tiles** (12" x 12") that contained 2% chrysotile asbestos located:
 - 1st floor entry way under the linoleum
- white/gray **floor tiles** (9" x 9") and associated **black mastic** that contained up to 5% chrysotile asbestos located:
 - 1st floor SW lab
 - entire 2nd floor excluding the power panel room
- **light brown and dark brown floor tiles** (9" x 9") and associated **black mastic** that contained up to 5% chrysotile asbestos located:
 - 1st floor NW lab and under the stairs
- **dark gray floor tiles** (9" x 9") that contained up to 5% chrysotile asbestos located:
 - 2nd floor in the power panel room
- **drywall mud** in all portions of the building with drywall
 - 1st floor: SW lab, NW lab, and furnace room
- **transite board** located in the walls, floors and ceilings of the 2nd floor
- **bronze sink insulation** which contains 2% chrysolite located in the 1st floor SW lab
- **gray sink insulation** which contains 2% chrysolite located in the 1st floor NE lab



#15 Ecology Building

- white/gray (9" x 9") **floor tiles** that contained 1% chrysotile asbestos located:
 - 1st floor washroom, hallway, north and south storage
- white/blue (12" x 12") **floor tiles** that 2% chrysotile asbestos located:
 - 1st floor north and south lab, office, entryway,
- **drywall mud** with up to 2% chrysotile is located in all portions of the building with drywall
 - 1st floor: furnace room
- **white/silver sink insulation** which contains 1% chrysolite located in the 1st floor south lab
- **gray countertop** contained 20% chrysotile and was located on the 1st floor north lab along the north wall and 2nd floor adjacent the stairwell on the north side
- **green countertop** contained 20% chrysotile and was located on the 2nd floor adjacent the stairwell on the east side

#17 Carpenter Shop

- gray (9" x 9") **floor tiles** that contained 2% chrysotile asbestos located:
 - washroom
- gray (12" x 12") **floor tiles** that 2% chrysotile asbestos located:
 - office
- **drywall mud** with up to 2% chrysotile is located in all portions of the building with drywall
 - entrance hallway, office, utility room, washroom and paint storage
- **vermiculite** insulation which contain 0.25% actinolite in the attic
- **2 cement countertops** stored in the basement
- **light fixture insulation** located on an incandescent light fixture stored in the storage space above the office

#18 Apiculture Laboratory

- **gray caulking** with 10% chrysotile located in the basement coolers (storage 1 to 4)
- **vermiculite** insulation which contains up to 1% actinolite in the attic

#26 Storage

- green and gray/white (9" x 9") **floor tiles** that contained 1% chrysotile asbestos located:
 - green: men's and woman's washroom, washroom hallway and office 4
 - gray/white: lab 1 and office 2 and 3
- **drywall mud** with up to 3% chrysotile is located in all portions of the building with drywall (entire building)



- **transite board** located in the walls and ceiling of the northwest portion of the threshing room and northeast portion of the furnace room
- **2 cement countertops** located in office 3 and lab 2
- **vermiculite** insulation which contains 1% actinolite in the attic

#35 Garage

- **vermiculite** insulation which contains 0.5% actinolite in cinder block wall which transects the center portion of the building

4.3.2 LEAD PRODUCTS

Fifty four (including 4 duplicates) representative samples were sampled and placed in sealable containers for lead content analysis. Please refer to Appendix 2 for a detailed description, a sampling diagram, a photographic log and a copy of the laboratory reports. Six of the samples are considered lead based paint containing 0.5%, or above, lead by weight.

Table 27: Lead in Paint Analysis Results Summary for Beaverlodge

SAMPLE	COLOUR	LOCATION (#- BUILDING NO.)	RESULTS (% LEAD BY WEIGHT)*
P1	Brown	cinder block storage door	0.12**
P2	Yellow/ white	#25 interior work room	0.047**
P3	White	#15 exterior paint	0.022
P4	Pink/ brown	#15 interior kick board	0.34**
P5	White	#15 office kick board	0.38**
P6	White	#15 north lab window frames	0.31
P7	White	#15 north lab cabinets N wall	0.33
P8	Yellow	#15 utility room	0.25**
P9	Gray	#15 1 st – 2 nd floor stairs	0.055**
P10	White	#15 2nd floor north wall	5.4**
P11	Blue	#1 basement office	0.19**
P12	White	#1 basement hall	<0.0078**
P13	Yellow	#1 basement furnace room	0.033**
P14	Black	#1 basement dark room	0.5
P15	Blue	#1 basement under west stairs	<0.0075**
P16	White	#1 2 nd floor room 25 window frame	0.13
P17	White	#1 exterior south window	0.39
Pdup 1 (P17)	White	#1 exterior south window	0.58
P18	White	#1 ceiling main floor reception	<0.0087**
P19	White	#18 basement under stairs	0.28
P20	White	#18 Exterior west side	2.8
P21	White	#10 2 nd floor storage	0.012**
P22	Green	#10 2 nd floor storage janitor closet	0.07**
P23	White/ yellow	#10 2 nd floor office 7 closet door	0.014**
P24	Blue	#10 2 nd floor office 5	0.013**
P26	Purple	#10 main floor storage	0.096**
P27	Light green	#10 basement storage 6 closet	0.0098**
Pdup 2	Light green	#10 basement storage 6 closet	0.16**



SAMPLE	COLOUR	LOCATION (#- BUILDING NO.)	RESULTS (% LEAD BY WEIGHT)*
(P27)			
P28	Light blue	#10 basement storage 7	0.091**
P29	White/ yellow	#10 basement storage 2	0.66
P30	White	#10 basement hallway	0.28
P31	White	#10 exterior main entrance trim	4.7
Pdup 3 (P31)	White	#10 exterior main entrance trim	4.5
P32	Peach	#14 interior main floor frames entry	0.33**
P33	White/yellow	#14 SW lab main	<0.008**
P34	White/yellow	#14 furnace room	0.077
Pdup 4 (P34)	White/yellow	#14 furnace room	0.099
P35	White	#14 NW lab	0.035
P36	White	#14 lab 2 east window	0.58
P37	White	#14 exterior frames office 1	3.4
P38	Blue	#17 exterior main entrance	7.4
P39	Green	#17 garage interior	<0.008**
P40	White	#17 work bench	0.021**
P41	Gray	#17 countertop work bench	0.25
P42	Blue	#17 stairway	0.0068
P43	Off-white	#35 office 2 walls	<0.0048
P44	Gray	#35 2 nd floor shelves	0.47
P45	Brown	#40 exterior door frame	0.055**
P46	White	#26 threshing room south wall	0.056
P47	White	#26 seed storage	0.094
P48	Blue	#26 lab 2 cupboards	0.014**
P49	White	#26 exterior window	0.19
P50	White	#26 interior women's washroom	0.044

BOLD – over criteria

* lead >0.5% by weight is considered to be lead containing paint (Work Safe Alberta CH061 and the Federal Hazardous Products Act)

**Matrix/substrate interference possible. Sample results are not corrected for contamination by field or analytical blanks

***Insufficient sample provided to perform QC re-analysis

Below is a list of the colours of paints sampled and the results (# samples positive and/or # samples negative for lead based paint) in brackets.

#1 Administration Office (8 paint samples)

- Blue interior(2 negative)
- White interior (3 negative)
- Yellow interior (1 negative)
- Black interior (1 positive)
- White exterior (1 positive)

#10 Canola Laboratory (9 paint samples)

- Green interior (1 negative)
- White/yellow interior (1 positive, 1 negative)
- Blue interior (1 negative)
- Purple interior (1 negative)



- Light green interior (1 negative)
- Light blue interior (1 negative)
- White interior (1 negative)
- White exterior (1 positive)

#14 Soils Research Building (6 paint samples)

- Peach interior (1 negative)
- White/yellow interior (2 negative)
- White interior (1 negative)
- White exterior (2 positive)

#15 Ecology Building (8 paint samples)

- White interior (1 positive, 3 negative)
- Gray interior (1 negative)
- Yellow interior (1 negative)
- Pink/brown interior (1 negative)
- White exterior (1 negative)

#17 Carpenter Shop (5 paint samples)

- Blue interior (1 negative)
- Green interior (1 negative)
- White interior (1 negative)
- Gray interior (1 negative)
- Blue exterior (1 positive)

#18 Apiculture Laboratory (3 paint samples)

- White interior (2 negative)
- White exterior (1 positive)

#25 Extracting Building (1 paint sample)

- Yellow/white (1 negative)

#26 Crop Processing & Storage (5 paint samples)

- White interior (3 negative)
- Blue (1 negative)
- White exterior (1 negative)

#35 Machinery Storage & Repair (2 paint samples)

- Off-white interior (1 negative)
- Gray interior (1 negative)

#36 Forage Building (0 paint samples)

#39 Apiculture Storage (0 paint samples)



#40 Seed Storage (1 paint sample)
▪ Brown exterior (1 negative)

#43 Soils Field Building (0 paint samples)

#45 Chemical Storage (0 paint samples)

Cinder block Storage (1 paint sample)
▪ Brown exterior (1 negative)

Tin Shed (0 paint samples)

The following is considered lead containing paint:

- **Black interior paint** in the dark room located in the basement of #1 Administration Office
- **White/yellow interior paint** in the #10 Canola Laboratory basement in storage rooms 2, 3, 1 and 9
- **White exterior paint** located:
 - #1 Administration Building doors and windows trim
 - #10 Canola Lab doors and windows trim
 - #14 Soils Research Building exterior door and window trim
 - #18 Apiculture Building exterior
- **White interior paint** in the #15 Ecology building on the walls and ceiling of the 2nd floor
- **Blue exterior paint** on the #17 Carpenter shop

Every building contained batteries such as button cell, emergency lights, alarm systems, equipment battery packs, etc.

4.3.3 POLYCHLORINATED BIPHENYLS (PCBs)

There were fluorescent light fixtures found throughout the entire site. It is understood some buildings on site have been retrofitted and there are fluorescent light ballasts of concern on site. The table below outlines the PCBs of concern.



Table 28: PCB Results Summary for Beaverlodge

LOCATION (BUILDING, FLOOR, ROOM)	DESCRIPTION	*TYPE
#10 Canola Laboratory/2 nd /sw office	2 Fluorescent light ballast	CGE 15A296A AB121969
#10 Canola Laboratory/2 nd /lunch room	1 Fluorescent light ballast	CGE Leaking
#14 Soils Research/1 st /SW Lab	Fluorescent light ballast	Phillips SM2E75STPC
#14 Soils Research/1st/SW Lab	4 Fluorescent light ballasts	Sola 570-302SX Sola 570-302SX CGE 89G325.. Mar.1956 (Leaking) CGE 89G545.. Mar. 12 1956 (Leaking)
#14 Soils Research/2 nd /Lab 1	Fluorescent light ballast	CGE 16A240N
#14 Soils Research/2nd/Lab 2	2 Fluorescent light ballasts	Sola 570-302SX CGE 16A296.. (Leaking)
#17 Carpenter Shop/office	1 fluorescent light ballast	Advance (patent date 56-60)
#26 Storage/Main/hall	7 Fluorescent light ballasts	CGE 17A257EW Non PCB Leaking Philips SM2E75STPC CGE 17A297TW CGE 17A296T CGE 15..... (damaged) Phillips SM2E75STPC (damaged) Phillips SM2E75STPC
#26 Storage/Main/Lab 1	2 Fluorescent light ballasts	Adlite ADM2E7553TP Adlite ADM2E7553TP
#26 Storage/Main/Seed storage	Fluorescent light ballast	CGE 15A296T
#26 Storage/Main/Air Drying Room	2 Fluorescent light ballasts	Adlite ADM2E7553TP Adlite ADM2E7553TP
#26 Storage/Main/Seed Cleaning	Fluorescent light ballast	Philips SM2E75STPC (Leaking)
#26 Storage/Main/Lab 2	6 Fluorescent light ballasts	Sola 550190SX (Leaking) CGE 15A296T (Leaking PCB) Advance HQM2540FLC CGE 15A296T CGE (Damaged) Philips RQM2S40TPC
#26 Storage/Main/ Office 2	4 Fluorescent light ballasts	CGE 15A296T Philips RQM2S40TPC Philips RQM2S40TPC Philips RQM2S40TPC
#26 Storage/Main/ Office 3	2 Fluorescent light ballasts	CGE 15A296T CGE 15A296T
#26 Storage/Main/ Office 4	3 Fluorescent light ballasts	CGE 17A240A CGE 17A240N CGE 17A240N

*All light ballasts on site should be verified and checked; not all light ballast could be verified due to leakage and location of date stamp



4.3.4 MERCURY

Fluorescent light tubes in the fluorescent light fixtures may contain varying amounts of mercury vapor, even newly purchased tubes/bulbs. There are hundreds of fluorescent tubes and some compact fluorescent bulbs throughout the buildings. The table below outlines the areas of concern.

Table 29: Mercury Results Summary for Beaverlodge

BUILDING	LOCATION	TYPE/ESTIMATED QUANTITY
#10 Canola Laboratory	1 st floor hallway	1 mercury thermostat
#14 Soils Research Building	1 st floor hallway and 2 nd floor Lab 1	2 mercury thermostats
#14 Soils Research Building	1 st floor growth chamber	2 mercury thermometers
#15 Ecology	1 st floor hallway	1 mercury thermostat
#17 Carpenter Shop	Northwest corner of the shop	1 mercury thermostat
#25 Honey Extraction Building	Main area on west wall	1 mercury thermostat
#26 Storage	Cooler	1 mercury thermometer
#26 Storage	Air Drying Room	1 mercury thermostat
#36 Forage Building	Lab	1 mercury thermometer
	Lunch Room	1 mercury thermometer
	Cool Room	1 mercury thermometer
#45 Chemical Storage	Centre room	1 mercury thermostat

4.3.5 OZONE DEPLETING SUBSTANCES (ODS)

Many of the ODS in the building have already been inventoried and many have been removed. The table below outlines the remaining ODS of concern.

Table 30: ODS Results Summary for Beaverlodge

LOCATION (BUILDING, FLOOR, ROOM)	DESCRIPTION OF THE SYSTEM	TYPE OF ODS	ESTIMATED QUANTITY
#1 Administration/main floor/storage	Mini fridge	R12	1 oz
#10 Canola Laboratory/2 nd floor/office 2	Westinghouse Fridge	R12	5 oz
#10 Canola Laboratory/2 nd floor/office 2	Coop Fridge	R12	5.25 oz
#10 Canola Laboratory/main floor/east hallway	Incubator (521715)	R12	9.0 oz
#10 Canola Laboratory/main floor/east hallway	Incubator (521714)	R12	9.0 oz
#10 Canola Laboratory/main floor/storage	Incubator (521717)	R12	9.0 oz
#14 Soils Research Building/1 st /growth chamber room	Growth Chamber (5215440)	R12	*
#14 Soils Research Building/1 st /NW lab	Kenmore Fridge (274571)	R12	5 oz
	GE Fridge (179933)		4.2 oz
#14 Soils Research Building/2 nd /Lab 2	Frigidaire Fridge	R12	4.75 oz
#15 Ecology Building	Fridge & Freezer	*	*
#18 Apiculture Laboratory (suspect)	Chest Freezer (179642)	*	*
#36 Forage Building	Woof Fridge (216755)	R12	7.1 oz
#36 Forage Building	GE Fridge (156891)	R12	7.4 oz
#36 Forage Building	WCI freezer (208643)	R12	8.0 oz

* Unable to verify type and/or quantity

A/C = air conditioning



The following is a summary of the ozone depleting substances still present on site:

- There are 9 fridges and 3 freezers which contain R-12
- There are 3 incubators and 1 growth chamber which contain R-12

4.3.6 RADIOACTIVE MATERIALS

Radioactive items were observed at the following locations:

Table 31: Radioactive Results Summary for Beaverlodge

Location (Building, Floor, Room)	Description	Estimated Quantity
#1 Administration Office/basement/hallway	Smoke detector	1
#1 Administration Office/main floor/hallway	Smoke detector	1
#1 Administration Office/2 nd floor/east hallway	Smoke detector	1
#14 Soils Research Building/2 nd floor/hallway	Smoke detector	1
#18 Apiculture Laboratory/basement/under stairs sitting on a shelf	Smoke detector	1
#35 Garage/2 nd /north side, middle shelf	Smoke detectors (stored in a box)	7

The smoke detectors observed are currently in use, except for the 7 stored in the #35 garage.

4.3.7 MISCELLANEOUS CHEMICALS

Miscellaneous chemicals were observed at the following locations:

Table 32: Miscellaneous Chemicals Summary for Beaverlodge

LOCATION (BUILDING, FLOOR, ROOM)	DESCRIPTION	ESTIMATED QUANTITY
#10 Canola Laboratory/main floor	Miscellaneous laboratory chemicals	-
#10 Canola Laboratory	Fume hood filter system	1
#14 Soils Research Building	Miscellaneous laboratory chemicals	-
#14 Soils Research Building/lab 2	Fume hood filter system	1
#15 Ecology Building	Miscellaneous laboratory and cleaning chemicals	-
#15 Ecology Building	Fume hood filter system	2
#17 Carpenter Shop/paint storage	Paint Solvents and other miscellaneous shop chemicals (WD 40, etc.)	150 cans 20 L
#18 Apiculture Laboratory	fume hood located at the northeast corner of the building	1
# 25 Honey Extraction Building	Rat/mice poison storage	-
#35 Garage	Paints, solvents, oils, ATF, antifreeze, etc.	-
#44 Chemical Storage	Specialized building to house chemicals	-
Tin Shed	Fuel, fertilizer, etc.	-



4.3.8 MOULD

Some suspect mould, water damage and conditions which may lead to mould were observed at the subject site. The table below summarizes the locations of the damage.

Table 33: Mould/Water Damage Results Summary for Beaverlodge

LOCATION (BUILDING, FLOOR, ROOM)	DESCRIPTION	ESTIMATED QUANTITY
#10 Canola Laboratory/basement	Water damage and mould 0.3 m above floor level, visible mould on pipe box in storage 4, under window in storage 6 and on shelving units	190 m ²
#10 Canola Laboratory/main floor/ storage room	Water damage on the east wall and pipe box in storage room	10 m ²
#14 Soils Research/1 st /furnace room	Water damage on the ceiling	0.5 m ²
#14 Soils Research/1 st /NW lab	Water damage on west wall at pipe	2 m ²
#14 Soils Research/2 nd / Lab 2	Water damage on ceiling at furnace chimney and 2 fume hood chimneys	0.5 m ² each
#15 Ecology Building	Water damage in the areas of the chimneys for the two fume hoods and furnace	0.5 m ² each
#17 Carpenter Shop	Water damage in the basement area from previous flooding (concrete staining)	-
#25 Honey Extraction/washroom	Water damage on ceiling tile	0.3 m ²
#26 Storage	Suspect mould and water damage on pipe and walls on south wall of threshing room	2 m ²
#26 Storage	Water damage on ceiling in the northwest corner of office 1	0.2 m ²
#26 Storage	Water damage on the ceiling in the seed storage room	0.3 m ²
#26 Storage	Water damage on the ceiling in the furnace room	3 m ²
#26 Storage	Water damage on the ceiling in the air drying room (2 areas)	0.2 m ² 1 m ²
#26 Storage	Water damage in the area of the fan in the men's washroom	0.3 m ²
#26 Storage	Suspect mould and water damage in the southwest area of the woman's washroom	2 m ²
#26 Storage	Water damage in the main hallway adjacent the cooler	2 m ²
#26 Storage	Water staining on the plywood walkway the full length of the attic	-

There appears to be suspect mould growth at the following locations:

- #10 Canola Laboratory in the entire basement approximately 0.3 m above the floor level.
- #26 Storage in the women's washroom and threshing room



There appears to be water damaged materials, which may lead to mould growth at the following locations:

- #10 Canola Laboratory in the entire basement and on the main floor in the storage room on the west wall and west portion of the ceiling
- #14 Soil Research had water staining in the area of all the chimneys for the fume hoods and furnace
- #15 Ecology building had water staining in the area of all the chimneys for the fume hoods and furnace
- #26 Storage building at various locations on the ceiling and in the women's washroom wall

4.3.9 OTHER

- #26 Storage building had an extensive rodent problem in the attic. Several deceased squirrels and mice were observed. The squirrels were nesting in the attic space and disturbing and redistributing the ACM vermiculite.



4.3.10 SUMMARY OF RESULTS BY BUILDING

#1 Administration Office

The following table is a summary of the hazardous materials identified in the #1 Administration Office. Refer to Appendix 2b-3 - 5 for diagrams and Appendix 2c-1 - 4 and 25 for photographs.

Table 34: #1 Administration Office Hazardous Materials Summary for Beaverlodge

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM brown linoleum	main floor, east door shoe rack	1 m ²
ACM square patterned linoleum	Basement: kitchen, conference room, basement hall Main floor: storage rooms 2 nd floor: office 18 and 20	100 m ² 30 m ² 30 m ²
ACM brown/white floor tile (9" x 9")	Basement hallway	8 m ²
ACM sink insulation	Basement dark room and kitchen	2 sinks
ACM ceiling texture	Main floor entrance, east hallway and office 3	84 m ²
ACM drywall mud	Half of the building (approximately 25 rooms)	580 m ²
ACM stucco	Exterior	444 m ²
Black interior lead paint	Basement dark room	30 m ²
White exterior lead paint	Exterior window and door frames	42 windows 3 doors
ODS - R12	Mini fridge; Main floor storage room	1 oz
Radioactive smoke detectors	Hallways in the basement, main floor and 2 nd floor	3



#10 Canola Laboratory

The following table is a summary of the hazardous materials identified in the #10 Canola Laboratory. Refer to Appendix 2b-6 - 8 for diagrams and Appendix 2c-4 – 7 and 25 and 27 for photographs.

Table 35: #10 Canola Laboratory Hazardous Materials Summary for Beaverlodge

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM Brown floor tile	2 nd floor office 5	20 m ²
ACM light brown and dark brown floor tile	Basement storage rooms 6 and 7 and hallway into these rooms	45 m ²
ACM drywall mud	Entire main floor (8 rooms) and 2 nd floor (13 rooms) and two rooms in the basement	1600 m ²
ACM light fixture insulation	Basement: west hallway Main floor: W-N Lab, northeast entrance, main entrance and storage room 2 nd floor: hallway (2), storage, office 4, 8, 10 and stairway	1 4 7
ACM Caulking	Basement coolers (storage 4 and 5)	1 m
ACM Pipe insulation	Basement coolers (storage 4 and 5)	8 m
ACM boiler insulation	Basement furnace room Boiler is 1.5 m x 1.5 m x 1.2 m Insulation is approx. 0.13 m thick	1 boiler
White/yellow interior lead paint	Basement storage rooms 2, 3, 1 and 9	120 m ²
White exterior lead paint	Exterior window and door frames	38 windows 4 doors
PCB fluorescent light ballasts	2 nd floor: SW office and lunch room	3
Mercury thermostat	Main floor hallway	1
ODS – R12	2 nd floor, office 2 (2 units) Main floor, east hallway (2 units) Main floor, storage (1 unit)	10.25 oz 18.0 oz 9.0 oz
Laboratory chemicals	Main floor	-
Fume hood filter system	NW Lab	1
Mould	Basement	190 m ²



#14 Soils Research Building

The following table is a summary of the hazardous materials identified in the #14 Soils Research Building. Refer to Appendix 2b-9 - 10 for diagrams and Appendix 2c-7 - 11 and 23 for photographs.

Table 36: #14 Soils Research Building Hazardous Materials Summary for Beaverlodge

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM square pattern linoleum	1 st floor rooms: NE lab, hallway, growth chamber room and washroom	84 m ²
ACM Gray 12 x 12 floor tile	1 st floor entry way (under ACM linoleum)	20 m ²
ACM white/gray 9 x 9 floor tile and mastic	1 st floor: SW lab 2 nd floor: all (except power panel room)	170 m ²
ACM light and dark brown 9 x 9 floor tile and mastic	1 st floor: NW lab and under the stairs	55 m ²
ACM dark gray 9 x 9 floor tile	2 nd floor: power panel room	8 m ²
ACM drywall mud	1 st floor: SW lab, NW lab, and furnace room	200 m ²
Transite board	2 nd floor walls, ceiling and floor	600 m ²
Bronze sink insulation	1 st floor SW lab	2
Gray sink insulation	1 st floor NE lab	2
White exterior lead paint	Exterior window and door frames	14 windows 3 doors
PCB fluorescent light ballasts	1 st floor: SW lab 2 nd floor: Lab 1 and 2	5 3
Mercury thermometer	Growth chamber on the 1 st floor	2
Mercury thermostat	1 st floor hallway and 2 nd floor Lab 1	2
ODS – R12	1 st floor growth chamber room (1 unit) 1 st floor NW lab (2 units) 2 nd floor Lab 2 (1 unit)	- 9.2 oz 4.75 oz
Radioactive smoke detector	2 nd floor hallway	1
Fume hood filter system	2 nd floor lab 2	1
Laboratory chemicals	1 st and 2 nd floor	-
Water damage	1 st floor furnace room 1 st floor NW lab 2 nd floor Lab 2	0.5 m ² 2 m ² 0.5 m ²



#15 Ecology Building

The following table is a summary of the hazardous materials identified in the #15 Ecology Building. Refer to Appendix 2b-11 – 13 for diagrams and Appendix 2c-12 – 15 and 26 - 27 for photographs.

Table 37: #15 Ecology Building Hazardous Materials Summary for Beaverlodge

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM white/blue 12 x 12 floor tile	1 st floor: north and south lab, office and entry	90 m ²
ACM white/gray 9 x 9 floor tile	1 st floor: north and south storage, washroom and hallway	60 m ²
ACM drywall mud	1 st floor: furnace room	38 m ²
White/silver sink insulation	1 st floor S lab	2
Gray countertop	1 st floor N lab 2 nd floor adjacent stairwell on north side	0.6 m x 3.5 m 0.7 m x 1.7 m
Green countertop	2 nd floor adjacent stairwell on east side	0.7 m x 1.2 m
White interior lead paint	2 nd floor walls and ceiling	150 m ²
Mercury thermostat	1 st floor hallway	1
Fume hood filter system	fume hoods located in the north and south lab	2
Laboratory chemicals	1 st floor in the labs in storage cabinet	-
Water damage	1 st floor furnace room 2 nd floor chimney areas 3 rd floor chimney areas	0.3 m ² 0.3 m ² each 0.4 m ² each



#17 Carpenter Shop

The following table is a summary of the hazardous materials identified in the #17 Carpenter Shop. Refer to Appendix 2b-14 - 15 for a diagram and Appendix 2c-15 - 17 and 26 for photographs.

Table 38: #17 Carpenter Shop Hazardous Materials Summary for Beaverlodge

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM gray 12 x 12 floor tile	office	16 m ²
ACM gray 9 x 9 floor tile	washroom	6 m ²
ACM drywall mud	Entrance hallway, office, utility room, washroom and 1/2 of the walls in the paint storage room	164 m ²
ACM Vermiculite	Attic	225 m ²
ACM cement boards	Basement leaning against the wall (stored) x 2	1.2 m x 0.9 m 1.2 m x 0.9 m
ACM light fixture insulation	Incandescent light fixture stored in the storage space above the office	1
Blue exterior lead paint	Exterior of building	350 m ²
PCB fluorescent light ballasts	Office	1
Mercury thermostat	Northwest corner of the shop	1
Miscellaneous chemicals	Paint storage room	150 cans 20 L

#18 Apiculture Laboratory

The following table is a summary of the hazardous materials identified in the #18 Apiculture Building. Refer to Appendix 2b-16 - 17 for a diagram and Appendix 2c-18 and 27 for photographs.

Table 39: #18 Apiculture Laboratory Hazardous Materials Summary for Beaverlodge

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM Caulking	Basement coolers (storage 1 - 4)	2 m
ACM Vermiculite	Attic	110 m ²
White exterior lead paint	Exterior window and door frames and siding	110 m ²
ODS – R12	Basement chest freezer	1
Radioactive smoke detector	Basement under the stairs storage area – sitting on a shelf	1
Fume hood filter system	fume hood located at the northeast corner of the building	1



#25 Honey Extraction Building

The following table is a summary of the hazardous materials identified in the #25 Honey Extraction Building. Refer to Appendix 2b-18 & 19 for a diagram and Appendix 2c-18 for photographs.

Table 40: #25 Honey Extraction Building Hazardous Materials Summary for Beaverlodge

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
Mercury thermostat	Main area on west wall	1
Miscellaneous chemicals	Work room (rat/mouse poison)	-
Water damage	Washroom ceiling	0.3 m ²

#26 Crop Processing & Storage

The following table is a summary of the hazardous materials identified in the #26 Crop Processing & Storage. Refer to Appendix 2b-20 for a diagram and Appendix 2c-18 - 24 for photographs.

Table 41: #26 Storage Hazardous Materials at Summary for Beaverlodge

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM green 9 x 9 floor tile	Washrooms, hallway adjacent the washrooms and office 4	50 m ²
ACM white/gray 9 x 9 floor tile	Lab 1 and office 2 and 3	30 m ²
ACM drywall mud	Entire building (17 rooms) walls and ceiling	1210 m ²
ACM Transite board	Northwest corner of the threshing room and northeast corner of the furnace room	11 m
ACM countertop	Lab 2 office 3	13 m x 0.7 m 7 m x 0.7 m
ACM Vermiculite	Attic	985 m ²
PCB fluorescent light ballasts	Entire building	30
Mercury thermostat	Cooler	1
Mercury thermometer	Air drying room	1
Mould/water damage	Ceiling and walls in woman's washroom	11 m ²
Rodents	Attic	-



#35 Garage

The following table is a summary of the hazardous materials identified in the #35 Garage. Refer to Appendix 2b-21-22 for a diagram and Appendix 2c-24 for photographs.

Table 42: #35 Garage Hazardous Materials Summary for Beaverlodge

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM vermiculite	Brown/gray in cinder block wall transecting the center portion of the shop	16 m long x 5 m high 80 m ²
Radioactive	Smoke detectors, 2 nd floor storage	7
Miscellaneous chemicals	Throughout the building	-

#36 Forage Building

The following table is a summary of the hazardous materials identified in the #36 Forage Building. Refer to Appendix 2b-23-24 for a diagram.

Table 43: #36 Forage Building Hazardous Materials Summary for Beaverlodge

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
Mercury thermometers	Lab, Lunch Room and Cool Room	3
ODS – R12	Main room (2 units) Cool room (1 unit)	14.5 oz 8.0 oz

#39 Apiculture Storage

There were no hazardous materials observed.

#40 Seed Storage

There were no hazardous materials observed.

#43 Soils Field Building

There were no hazardous materials observed.



#45 Chemical Storage

The following table is a summary of the hazardous materials identified in the #45 Chemical Storage.

Table 44: #45 Chemical Storage Hazardous Materials Summary for Beaverlodge

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
Mercury thermostat	center room	1
Chemical	Building	-

Cinder block Storage

There were no hazardous materials observed.

Tin Shed

There were some jerry cans with fuel, oil and fertilizer observed in this building.



4.4 ASSESSING RISK EXPOSURE FOR ASBESTOS

There are eight major factors which assist in evaluating the condition of a particular asbestos installation.

The eight factors include:

1. Condition of Material
2. Water Damage
3. Exposed Surface Area
4. Accessibility
5. Activity and Movement
6. Air Plenum or Direct Air Stream
7. Friability
8. Asbestos Content

These factors have been put together into the following tables to allow for assessment to determine the degree of risk associated with existing asbestos. The parameters in Table 17 are applied to the ACM to derive a risk rating. These risk ratings are then compared to Table 18 to determine what type of action is required.

Table 45: Assessing Risk Exposure

FACTOR	DESCRIPTION	RATING OF RISK EXPOSURE
Accessibility of Material	Accessible in high activity areas	High (h)
	Accessible in low activity areas beyond the reach of the area occupants	Medium (m)
	Enclosed	Low (l)
Condition of Materials	Severely damaged	High (h)
	Mild to moderate damage	Medium (m)
	Good condition	Low (l)
Friability of Materials	Easily breaks apart	High (h)
	Mild to moderate friability	Medium (m)
	Non-friable	Low (l)

* Information from *Alberta Asbestos Abatement Manual*. Government of Alberta, Employment, Immigration and Industry. July 2009.



Table 46: Determining Level of Control Required

	ASBESTOS NOT PRESENT IN RETURN AIR PLENUM		ASBESTOS PRESENT IN RETURN AIR PLENUM
	LESS THAN 20% ASBESTOS CONTENT IN MATERIAL	GREATER THAN 20% ASBESTOS CONTENT IN MATERIAL	
Immediate Control Required	2 Hs or 3 Ms	1 H or 2 Ms	Control required unless 3 Ls and less than 20% asbestos content in material
Control Required	1 H or 2 Ms	1 M	
No Control Required	1 M or 3 Ls	3 Ls	

* Information from *Alberta Asbestos Abatement Manual*. Government of Alberta, Employment, Immigration and Industry. July 2009.

The table below outlines the results of the above methodology to determine priorities for dealing with ACM and which ACM may be causing a high risk to occupants of the building.

Table 47: ACM Risk of Exposure for Beaverlodge

SAMPLE	DESCRIPTION	LOCATION	CONDITION	RESULT	RISK EXPOSURE (ACCESSIBLE) (CONDITION) (FRIABILITY)	CONTROL REQUIRED
A1	White/ silver Sink insulation	#15 South lab sinks	Good	1.4% (chrysotile)	(M)(L)(L)	No Control
A3a	White w/graygray 9x9 floor tile	#15 south lab floor tile E wall	Good	1.3% (chrysotile)	(H)(L)(L)	Control
A5	White w/graygray 9x9 floor tile	#15 south storage	Fair	1.3% (chrysotile)	(M)(M)(L)	Control
A7a	White/ blue 12x12 floor tile	#15 west door way	Poor	1.8% (chrysotile)	(M)(H)(L)	Control
A8a	White/ blue 12x12 floor tile	#15 main floor office	Poor	1.6% (chrysotile)	(M)(H)(L)	Control
A9	White/ blue 12x12 floor tile	#15 middle of north lab	Poor	1.8% (chrysotile)	(M)(H)(L)	Control
A11	GrayGray Counter top	#15 north lab counter on north wall	Fair	20% (chrysotile)	(H)(M)(L)	Immediate
A15	Drywall mud	#15 utility room NW corner	Good	1.4% (chrysotile)	(L)(L)(H)	Control
A16	Drywall mud	#15 utility room SW corner	Good	1.6% (chrysotile)	(L)(L)(H)	Control
A18	White w/blue 12x12 floor tile	#15 hallway utility room	Fair	2.1% (chrysotile)	(M)(M)(L)	Control
A20	GrayGray Counter top	#15 2 nd floor table adjacent stairs north	Poor	15% (chrysotile)	(H)(H)(L)	Immediate



SAMPLE	DESCRIPTION	LOCATION	CONDITION	RESULT	RISK EXPOSURE (ACCESSIBLE) (CONDITION) (FRIABILITY)	CONTROL REQUIRED
A21	Green Counter top	#15 2 nd floor table adjacent stairs east	Fair	20% (chrysotile)	(H)(M)(L)	Immediate
A33	Brown Linoleum	#1 main east door shoe rack	Fair	25% (chrysotile)	(H)(M)(L)	Immediate
A37	Drywall mud	#1 basement hall	Poor	2.4% (chrysotile)	(L)(M)(H)	Control
A41	Brown w/white 9x9 floor tile	#1 basement hallway floor	Fair	1.6% (chrysotile)	(H)(M)(L)	Control
A42	Drywall mud	#1 basement furnace room	Good	1.8% (chrysotile)	(L)(L)(H)	Control
A46	Silver Sink insulation	#1 basement dark room	Good	1.4% (chrysotile)	(M)(L)(L)	No Control
A49	Brown Squares lino	#1 basement conference room	Good	25% (chrysotile)	(H)(L)(L)	Control
A51	Drywall mud	#1 basement conference room SW corner	Good	1.3% (chrysotile)	(L)(L)(H)	Control
A52	Drywall mud	#1 basement kitchen SE corner	Good	1.2% (chrysotile)	(L)(L)(H)	Control
A53	Bronze Sink insulation	#1 basement kitchen sink	Good	1.3% (chrysotile)	(M)(L)(L)	No Control
A56	Brown Squares lino	#1 main floor storage east	Poor	25% (chrysotile)	(H)(H)(L)	Immediate
A60	Ceiling texture	#1 main floor hall in front of reception	Good	3.5% (chrysotile)	(M)(L)(H)	Control
A61	Ceiling texture	#1 main floor hall at east stairs	Good	3.3% (chrysotile)	(M)(L)(H)	Control
A62	Ceiling texture	#1 main floor office SW area	Good	3.8% (chrysotile)	(M)(L)(H)	Control
A68	Drywall mud	#1 2 nd floor office 20 NW corner	Good	1.3% (chrysotile)	(L)(L)(H)	Control
A70	Multi coloured Stucco	#1 exterior main entrance	Good	1.3% (chrysotile)	(M)(L)(H)	Control
A71	Multi coloured Stucco	#1 exterior main entrance	Good	1.4% (chrysotile)	(M)(L)(H)	Control
A72	Multi coloured Stucco	#1 exterior main entrance	Good	1.3% (chrysotile)	(M)(L)(H)	Control
A75	Brown/ white 9x9 floor tile	#1 basement hallway	Fair	1.6% (chrysotile)	(H)(M)(L)	Control
A79	Gray Caulking	#18 basement cooler #2 inside	Good	10% (chrysotile)	(M)(L)(L)	No Control
A89	Brown Vermiculite	#18 attic north	Good	0.14% (actinolite)	(L)(L)(H)	Control



SAMPLE	DESCRIPTION	LOCATION	CONDITION	RESULT	RISK EXPOSURE (ACCESSIBLE) (CONDITION) (FRIABILITY)	CONTROL REQUIRED
A90	Brown Vermiculite	#18 attic south	Good	0.87% (actinolite)	(L)(L)(H)	Control
A91	Brown Vermiculite	#18 attic south	Good	0.93% (actinolite)	(L)(L)(H)	Control
A96	Black/ silver Light insulation	#10 2 nd floor office 4 light fixture backing	Good	95% (chrysotile)	(L)(L)(H)	Control
A98a	Brown 12x12 floor tile	#10 2 nd floor office 5	Good	1.4% (chrysotile)	(H)(L)(L)	Control
A102	Silver/ black Light insulation	#10 main floor storage light	Good	50% (chrysotile)	(L)(L)(H)	Control
A114a	Light brown 9x9 floor tile	#10 basement storage 7	Poor	2.0% (chrysotile)	(H)(H)(L)	Immediate
A115a	Dark brown 9x9 floor tile	#10 basement storage 7	Poor	3.25% (chrysotile)	(H)(H)(L)	Immediate
A116a	Light brown 9x9 floor tile	#10 basement storage 8	Poor	2.25% (chrysotile)	(H)(H)(L)	Immediate
A117a	Dark brown 9x9 floor tile	#10 basement storage 8	Poor	2.5% (chrysotile)	(H)(H)(L)	Immediate
A118	Black Caulking	#10 basement cooler storage 5	Good	25% (chrysotile)	(M)(L)(L)	Control
A119	Gray Caulking	#10 basement cooler storage 5	Good	10% (chrysotile)	(M)(L)(L)	No Control
A120	White Pipe insulation	#10 basement storage 6	Good	50% (chrysotile)	(M)(M)(H)	Immediate
A121	White Insulation	#10 basement furnace	Poor	65% (chrysotile)	(M)(H)(H)	Immediate
A126	Drywall mud	#10 2 nd floor office 6 closet	Good	1.5% (chrysotile)	(L)(L)(H)	Control
A128	Drywall mud	#10 2 nd floor storage closet	Good	1.25% (chrysotile)	(L)(L)(H)	Control
A129	Drywall mud	#10 main floor under electrical box	Good	1.5% (chrysotile)	(L)(L)(H)	Control
A135a	Gray 12x12 floor tile	#14 entry tile under linoleum	Fair	1.5% (chrysotile)	(H)(M)(L)	Control
A139	Gray Cement board	#14 SW lab leaning on wall x 2 boards	Good	25% (chrysotile)	(H)(L)(L)	Immediate
A141	Bronze Sink insulation	#14 SW lab sinks	Good	2.3% (chrysotile)	(M)(L)(L)	No Control
A143b	Black Mastic	#14 SW lab floor	Fair	1.3% (chrysotile)	(L)(M)(M)	Control
A146	Drywall mud	#14 furnace room walls	Fair	2.1% (chrysotile)	(L)(M)(H)	Control
A150	Drywall mud	#14 growth chamber room ceiling	Fair	2.1% (chrysotile)	(L)(M)(H)	Control
A153a	Light brown 9x9 floor tile	#14 under stairs floor	Fair	3.5% (chrysotile)	(H)(M)(L)	Control



SAMPLE	DESCRIPTION	LOCATION	CONDITION	RESULT	RISK EXPOSURE (ACCESSIBLE) (CONDITION) (FRIABILITY)	CONTROL REQUIRED
A153b	Black Mastic	#14 under stairs floor	Poor	1.2% (chrysotile)	(L)(H)(M)	Control
A154	Dark brown 9x9 floor tile	#14 under stairs floor	Fair	4.7% (chrysotile)	(H)(M)(L)	Control
A155a	Light brown 9x9 floor tile	#14 NW lab floor	Fair	1.5% (chrysotile)	(H)(M)(M)	Control
A156a	Dark brown 9x9 floor tile	#14 NW lab floor	Fair	4.8% (chrysotile)	(H)(M)(M)	Control
A156b	Black Mastic	#14 NW lab floor	Fair	1.2% (chrysotile)	(M)(L)(M)	Control
A158	Drywall mud	#14 NW lab ceiling	Fair	1.8% (chrysotile)	(L)(M)(H)	Control
A160	Gray Sink insulation	#14 NE lab sinks	Good	1.7% (chrysotile)	(M)(L)(L)	No Control
A162	Brown Squares sheet lino	#14 NE lab west corner	Poor	20% (chrysotile)	(H)(H)(H)	Immediate
A166	Gray Cement board	#14 power panel room	Good	25% (chrysotile)	(M)(L)(L)	Control
A167a	Dark Gray 9x9 floor tile	#14 power panel room	Fair	4.8% (chrysotile)	(H)(M)(L)	Control
A171a	White/ Gray 9x9 floor tile	#14 lab 1 north wall	Fair	1.3% (chrysotile)	(H)(M)(L)	Control
A176	White/ Gray Cement board	#14 upstairs hall SW corner	Poor	25% (chrysotile)	(L)(M)(L)	Control
A177	White/ Gray Cement board	#14 office 1 ceiling above stairs	Good	25% (chrysotile)	(M)(L)(L)	Control
A178	White/ Gray 9x9 floor tile	#14 office 2 nd floor NE corner	Good	1.3% (chrysotile)	(M)(L)(L)	Control
A181	Brown/ silver Vermiculite	#17 attic SE access	Good	0.25% (actinolite)	(H)(L)(L)	Control
A182	Brown/ silver Vermiculite	#17 attic SE access	Good	0.25% (actinolite)	(L)(L)(H)	Control
A183	Brown/ silver Vermiculite	#17 attic access	Good	Trace (actinolite)	(L)(L)(H)	Control
A184	Drywall mud	#17 garage Ceiling SE	Good	2.4% (chrysotile)	(M)(L)(L)	Control
A185	Brown/ silver Vermiculite	#17 attic SE access	Good	0.25% (actinolite)	(M)(L)(L)	Control
A186	Drywall mud	#17 office SW corner	Good	1.5% (chrysotile)	(L)(L)(H)	Control
A187a	Gray 12x12 floor tile	#17 office door	Good	1.7% (chrysotile)	(H)(L)(L)	Control
A189a	Gray 9x9 floor tile	#17 washroom	Good	1.6% (chrysotile)	(H)(L)(L)	Control
A190	Drywall mud	#17 washroom NE corner	Good	2.7% (chrysotile)	(L)(L)(H)	Control
A198	Brown/ Gray Vermiculite	#35 cinder block wall	Good	0.46% (actinolite)	(L)(L)(H)	Control



SAMPLE	DESCRIPTION	LOCATION	CONDITION	RESULT	RISK EXPOSURE (ACCESSIBLE) (CONDITION) (FRIABILITY)	CONTROL REQUIRED
A199	Drywall mud	#26 threshing room south wall	Fair	3.3% (chrysotile)	(L)(L)(H)	Control
A200	Gray Cement Board	#26 threshing room NW enclosure	Good	25% (chrysotile)	(M)(L)(L)	Control
A204	Drywall mud	#26 seed storage	Poor	3.2% (chrysotile)	(L)(H)(H)	Immediate
A206	Gray/ white Cement board	#26 furnace room south wall	Good	25% (chrysotile)	(M)(L)(L)	Control
A207	Drywall mud	#26 furnace room east wall	Poor	3.7% (chrysotile)	(L)(H)(H)	Immediate
A208	Drywall mud	#26 air drying room	Good	2.5% (chrysotile)	(L)(L)(H)	Control
A212	Gray Cement counter top	#26 office 3 south and east walls	Good	25% (chrysotile)	(H)(L)(L)	Immediate
A214a	Green 9x9 floor tile	#26 washroom hall south	Poor	1.3% (chrysotile)	(H)(H)(L)	Immediate
A216	Drywall mud	#26 woman's washroom west	Poor	3.1% (chrysotile)	(L)(H)(H)	Immediate
A217	Drywall mud	#26 office 4 east wall	Fair	2.9% (chrysotile)	(L)(M)(H)	Control
A218	Drywall mud	#26 main hall south wall	Fair	2.7% (chrysotile)	(L)(M)(H)	Control
A224	Drywall mud	#26 main hall at attic stairs	Fair	2.0% (chrysotile)	(L)(M)(H)	Control
A225	Brown/ silver Vermiculite	#26 Attic north west	Good	0.75% (actinolite)	(L)(L)(H)	Control
A226	Brown/ silver Vermiculite	#26 Attic middle east	Good	1.25% (actinolite)	(L)(L)(H)	Control
A227	Brown/ silver Vermiculite	#26 Attic south east	Good	1.5% (actinolite)	(L)(L)(H)	Control

According to the above risk assessment the following ACM items should be dealt with immediately:

#1 Administration Office

- Shoe rack covered in brown linoleum near the east main door
- Brown squares sheet linoleum in the east storage room on the main floor

#10 Canola Laboratory

- Light brown and dark brown 9x9 floor tile in storage rooms 7 and 8 in the basement
- White insulation around the furnace in the basement
- Pipe insulation in the coolers



#14 Soils Research Building

- Gray cement board in the SW lab (leaning on walls)
- Brown squares sheet linoleum in the west corner of the NE lab

#15 Ecology Building

- Gray countertops in north lab along north wall and on the 2nd floor table adjacent to the stairs (north)
- Green countertop on the 2nd floor table adjacent to the stairs (east)

#17 Carpenter Shop

- Vermiculite insulation leaking out of the ceiling located in the storage area above the office

#26 Storage

- Water damaged drywall mud in the seed storage room, east wall of the furnace room, and west women's washroom
- Gray cement countertop along the south and east walls of office #3 and Lab 2
- Damaged green 9x9 floor tiles in the south hall washroom



4.5 CONCLUSIONS

➤ ASBESTOS

- The **plumbing insulation** in storage rooms 4 and 5 and around the boiler in #10 Canola laboratory contains from 50% to 85% chrysotile asbestos.

Any ACM plumbing insulation which is exposed or damaged (the protective wrap has been damaged or removed and there is water damage) may cause a high risk of exposure to occupants.

The ACM pipe insulation in storage rooms 4 and 5 is in fair condition and does not contain a wrap to enclose the ACM insulation. The white boiler insulation is in poor condition, is highly friable and is moderately accessible. It also has an extremely high asbestos content. The risk of exposure is high and the insulation should be removed immediately.

- The **vermiculite insulation** in several of the buildings contains up to 1.5% actinolite asbestos.

The ACM vermiculite insulation is located in the attics of #17 Carpenter shop, #18 Apiculture laboratory, #26 Storage as well as the ceiling of #17 Carpenter shop and #35 Garage (cinder block wall).

Although all of the insulation in the attics and in the wall was in good condition and does not require immediate abatement, the insulation leaking out of the ceiling in #17 Carpenter shop does pose a high risk of exposure and should be abated immediately.

Also, there was a small storage area in the attic in #26. There were cloth bags and some other items stored in this area and due to the squirrel activity (and other activity) there was ACM vermiculite insulation scattered throughout this area. This area is high risk and should be abated.

The vermiculite insulation poses a relatively high risk of exposure when it is disturbed because it is highly friable.

- The **drywall mud** in several of the buildings contains up to 3.7% chrysotile asbestos.

The ACM drywall mud is located in #1 Administration office 2nd floor and basement, #10 Canola laboratory main and 2nd floors, #14 Soils research building, #15 Ecology building SW and NW corner of the utility room, #17 Carpenter shop and #26 Storage building.



All areas of the above buildings contain various amounts of drywall on either the walls or ceiling. Most of the drywall mud tested was in fair to good condition and does not present a high risk of exposure. The following locations contain drywall mud that is in poor condition and presents a high risk of exposure requiring immediate abatement;

- Water damaged drywall mud in the seed storage room, the furnace room, west women's washroom in the #26 Storage building.
- There are several different patterns of **floor tiles** that contain up to 4.8% chrysotile asbestos. The tile patterns are: white with gray, white with blue, brown with white, brown, light brown, dark brown, gray, dark gray and green and are located as follows:

The brown with white 9x9 tiles are located in #1 Administration office basement hallway. The brown 12x12 tiles are located in #10 Canola laboratory on the 2nd floor in office #5. The light brown and dark brown 9x9 tiles are located in #10 Canola laboratory in storage rooms #7 and #8 in the basement. Also light brown and dark brown 9x9 tiles are located in #14 Soils research building under the stairs and in the NW lab. The gray 12x12 floor tiles are located in #14 Soils research building in the entrance. The dark gray 9x9 floor tiles are located in #14 Soils research building in the power panel room. The white with gray 9x9 floor tiles are located in #14 Soils research building on the 2nd floor. The white with gray 9x9 tiles are located in #15 Ecology building north and south storage, washroom and hallway. The white with blue 12x12 tiles are located in #15 Ecology building north and south lab, office and entry. The gray 9x9 and 12x12 tiles are located in the #17 Carpenter shop office door and washroom. The green and white/gray 9x9 tiles are located in #26 Storage building in the washrooms and washroom hallway, lab 1 and office 2, 3 and 4.

In most cases, no asbestos found in the associated mastic or leveling compound. ACM floor tiles without asbestos in the mastic pose a low risk of exposure as long as they are in good condition. The exception was #14 Soils research building in the SW and NW lab and under the stairs. ACM floor tiles with asbestos in the mastic pose a moderate risk of exposure if the tiles deteriorate.

Most of the floor tiles tested were in fair to good condition and do not present a high risk of exposure. The following locations had floor tiles that were in poor condition and present a high risk of exposure and require immediate abatement;

- The light brown and dark brown 9x9 tiles are located in #10 Canola laboratory in storage rooms #7 and #8 in the basement.
- The green 9x9 tiles are located in #26 Storage building on the south washroom hall.



- The brown and brown squares **linoleum sheet flooring** contain between 20% and 25% chrysotile asbestos.

The brown squares flooring in #1 Administration office was located in the basement conference room, kitchen as well as in the 2nd floor offices #18 and #20. These were in good condition and therefore only require control. The brown linoleum shoe rack (east door) and the brown squares flooring (storage rooms on the main floor and) in #1 Administration building are in poor condition and present a high risk of exposure requiring immediate abatement. The brown squares flooring in #14 Soils research building in the the NE lab are in poor condition and present a high risk of exposure requiring immediate abatement.

- The gray and white/gray **transite boards** located in #14 Soil research building, #17 Carpenter shop and #26 Storage building contain 25% chrysotile asbestos.

In building #14, the white/gray cement boards in the 2nd floor walls, ceiling and floor and the gray boards in the power panel room were in good condition. The cement boards pose a moderate risk of exposure because they are moderately accessible and access should be controlled. In building #26, the gray cement boards in the NW enclosure of the threshing room and the gray/white boards on the south wall of the furnace room were in good condition. The cement boards pose a moderate risk of exposure because they are moderately accessible and access should be controlled.

The panel boards are a low hazard as long as they are not disturbed. If the boards need to be disturbed by cutting, drilling, etc. they will release asbestos fibres and become a high risk hazard.

In building #14, the two gray ACM cement boards observed in the SW lab were in good condition. There are also two transite boards leaning against the wall in building #17. The cement boards pose a high risk of exposure because they are highly accessible although non-friable. The white/gray cement boards observed in the SW corner of the upstairs hall were in poor condition and moderately accessible, therefore a presenting a high risk of exposure.

- There is an **insulating coating under the sinks** located in the basement dark room and basement kitchen of #1 Administration building, the SW and NE labs of #14 Soil research building, south lab of #15 Ecology building that contain asbestos.

There is a low asbestos content, low friability and moderate accessibility. The above sinks insulations do not pose a risk to occupants.



- There is **interior caulking** located on the basement cooler (gray and black) storage 5 in #10 Canola laboratory and the basement cooler (gray) inside #18 Apiculture laboratory which contains 10% to 25% chrysotile asbestos.

The caulking has a moderate to high asbestos content, low friability and is in good condition. As long as the condition of the caulking does not deteriorate there is a low risk of exposure.

- The **countertops** in #15 Ecology building and #26 Storage building contain between 15% and 25% chrysotile asbestos.

The gray and green countertops were located along the north wall of the north lab, table adjacent to the east and north stairs on the 2nd floor in the #15 Ecology building. Also, a gray countertop was present along the south and east walls of office #3 and Lab 2 of #26 Storage building.

The countertops ranged in condition from poor to good and all are highly accessible. They also have a high asbestos content and can be damaged making them highly friable. The risk of exposure is high for all ACM containing countertops and they should be immediately abated.

- The white **ceiling texture** in the hall from the reception area to the east stairwell and office 3, all of which are on the main floor, in #1 Administration office contains up to 3.8% chrysotile asbestos.

The ceiling texture is in good condition, is highly friable and is moderately accessible. It also has a low asbestos content. The risk of exposure is moderate as long as the texture ceiling stays in good condition and should be controlled.

- The **exterior stucco** on the main entrance of the #1 Administration office contains up to 1.4% chrysotile asbestos.

The stucco is in good condition, is highly friable and is moderately accessible. It also has a low asbestos content. The risk of exposure is moderate and should be controlled.

- The black/silver **light insulation** in the west hallway in the basement, storage room, NE entrance, main entrance, W-N lab on the main floor and in the hallway, storage, office (4, 8 & 10) and stairway on the 2nd floor and office #4 light fixture backing in #10 Canola laboratory contains between 50 to 95% chrysotile asbestos. There was a light fixture being stored in the storage area above the office of #17 Carpenter Shop.

The light insulation is in good condition, is highly friable and is not accessible. It also has an extremely high asbestos content. The risk of exposure is moderate and should be controlled.



The light fixture in the storage area above the office in #17 Carpenter shop is not in use and is a higher risk because it is not enclosed and is accessible.

➤ **LEAD**

There is lead based paint located:

- Black interior lead paint in the dark room in the basement of #1 Administration Office
- White/yellow interior paint in the #10 Canola Laboratory basement in storage rooms 1, 2, 3 and 9
- White exterior paint located in:
 - #1 Administration Office doors and windows trim
 - #10 Canola Lab doors and windows trim
 - #14 Soils Research Building exterior door and window trim
 - #18 Apiculture Building exterior
- White interior paint in the #15 Ecology building on the walls and ceiling of the 2nd floor
- Blue exterior paint on the #17 Carpenter shop

Every building contained batteries such as button cell, emergency lights, alarm systems, equipment battery packs, etc. which contain lead.

➤ **PCBs**

- There were **fluorescent light fixtures** found throughout the entire site, forty of which were identified to contain PCBs. It is understood some buildings on site have been retrofitted and there are fluorescent light ballasts of concern on site.
- PCB containing fluorescent light ballasts were noted in the site buildings were as follows: three in #10 Canola Laboratory, eight in #14 Soils Research, one in #17 Carpenter Shop and twenty-eight in #26 Storage.

➤ **MERCURY**

- Fluorescent light tubes in the fluorescent light fixtures may contain varying amounts of mercury vapor, even newly purchased tubes/bulbs. There are hundreds of fluorescent tubes and some compact fluorescent bulbs throughout the buildings.
- There was one **mercury thermostat** in #10 Canola Laboratory, two in #14 Soils Research Building, one in #15 Ecology Building, one in #17 Carpenter Shop, one in #25 Honey Extraction Building, one in the #26 Storage and one in #45 Chemical Storage.



- There was two **mercury thermometers** in #14 Soils Research Building, one in #26 Storage and three in #36 Forage Building.

➤ **OZONE DEPLETING SUBSTANCES**

- Many of the ODS in the building had already been removed. Nine fridges, three freezers, three incubators and one growth chamber all **containing R-12** still remained on site.
- One **ODS containing fridge** was observed in #1 Administration, two in #10 Canola Laboratory, three in #14 Soils Research Building, one in #15 Ecology Building and two in #36 Forage Building.
- One **ODS containing freezer** was observed in #15 Ecology Building, one in #18 Apiculture Laboratory and one in #36 Forage Building.
- Three **ODS containing incubators** were observed in #10 Canola Laboratory.
- One **ODS containing growth chamber** was observed in #14 Soils Research Building.

➤ **RADIOACTIVE MATERIALS**

- Twelve **radioactive smoke detectors** were found on the subject site, three in #1 Administration, one in #14 Soils Research Building, one in #18 Apiculture Laboratory and seven (stored in box) in the #35 Garage.
- Five were in use and seven were being stored.

➤ **MISCELLANEOUS CHEMICALS**

- Miscellaneous chemicals such as various laboratory chemicals, paint, solvents, rat/mouse poisons, oils, anti-freeze, fuel, fertilizer, ATF, WD-40, etc. were observed on site.

Miscellaneous chemicals were observed at #10 Canola Laboratory, #14 Soil Research Building, #15 Ecology Building, #17 Carpenter Shop, , #25 Honey Extraction Building, #35 Garage, #44 Chemical Storage and the tin shed.

- **Fume hood filter systems** were observed at #10 Canola Lab, #14 Soils Research Lab, #15 Ecology Building and #18 Apiculture Laboratory. Depending on the use of the fume hood, there may be specific requirements for removal and disposal.



➤ **MOULD**

- **Water damage** which can lead to mould growth was observed at the following locations: #10 Canola Laboratory, #14 Soil Research Building, #15 Ecology Building, #17 Carpenter Shop, #26 Storage Building and #25 Honey Extraction building.
- **Mould growth** was observed approximately 0.3m above the floor in the entire basement of #10 Canola Laboratory and approximately 2m² in the women's washroom in #26 Storage.

➤ **OTHER**

Building #26 Storage has an extensive rodent problem in the attic. Several deceased squirrels and mice were observed. The squirrels are nesting in the attic space and disturbing/redistributing the ACM vermiculite.



4.6 RECOMMENDATIONS

➤ ASBESTOS

The table below summarizes the extent and potential impact of the asbestos in the building.

Table 48: Extent and Recommendations of ACM for Beaverlodge

ACM	EXTENT	IMPACT*
No Issues (currently)		Caution
Immediate abatement		
#1 Administration Office		
Drywall Mud	Half of building Estimated: 580 m ²	The majority of the drywall mud was in good condition. If the drywall mud is in good condition and not disturbed there is low risk of exposure. If the condition of the drywall deteriorates, or there are renovations, there is a higher risk of exposure and it should be abated.
Floor Tiles	Basement hallway (brown/white tiles) Estimated: 8 m ²	As long as the tiles are in good to fair condition, there is low risk. The majority of the tiles were in fair condition and pose a low risk of exposure. If the condition of the tiles deteriorates, or there are renovations, there is a higher risk of exposure and they should be abated.
Sheet Linoleum	Basement (brown squares) Estimated: 100 m ² 2 nd Floor (brown squares) Estimated: 30 m ²	The brown squares flooring in the basement conference room, hall and kitchen along with the 2 nd floor offices #18 and #20 were in good condition and therefore only requires being controlled.
Sheet Linoleum	Shoe rack (brown) Estimated: 1 m ² Main Floor (brown squares) Estimated: 30 m ²	The brown linoleum shoe rack and the brown squares flooring (storage rooms on the main floor) are in poor condition and present a high risk of exposure requiring immediate abatement.
Sink insulation	Basement dark room and kitchen Estimated: 2 sinks	The sink insulation is in good condition and was observed in a cabinet. There is low risk as long as the insulation is not disturbed. Controls should be implemented to ensure the non-disturbance of this ACM, including the restriction of storage of items under the sinks or educating occupants using this space.
Ceiling Texture	Main floor entrance, east hallway and office 3 Estimated: 85 m ²	The ceiling texture is in good condition, is highly friable and is moderately accessible. It also has a low asbestos content. The risk of exposure is moderate and should be controlled.
Stucco	Exterior Estimated: 440 m ²	The stucco is in good condition, is highly friable and is moderately accessible. It also has a low asbestos content. The risk of exposure is moderate and should be controlled.
#10 Canola Laboratory		
Floor Tiles	2 nd floor office 5 (brown tiles) Estimated: 20 m ²	As long as the tiles are in good condition, there is low risk. The brown tiles on the 2 nd floor were in good condition and pose a low risk of exposure. If the condition of the tiles deteriorates, or there are renovations, there is a higher risk of exposure and should be abated.



ACM	EXTENT	IMPACT*
Floor Tiles	Basement storage 6 & 7 and hallways (light and dark brown) Estimated: 45 m ²	The light and dark brown tiles in the basement were in poor condition. This presents a high risk of exposure, requiring immediate abatement.
Drywall Mud	Entire main floor, 2 nd floor and 2 rooms in basement Estimated: 1600 m ²	The majority of the drywall mud was in good condition. If the drywall mud is in good condition and not disturbed there is low risk of exposure. If the condition of the drywall deteriorates, or there are renovations, there is a higher risk of exposure and it should be abated. The drywall in the basement was water damaged and should be abated immediately
Pipe Insulation	Basement coolers (storage 4 & 5) Estimated: 8 m	The pipe insulation around the coolers is currently in fair condition. However, it was not enclosed with a pipe wrap and therefore accessible. There is a high risk to occupants if the ACM wrap is damaged or the ACM is exposed. This exposed insulation should be abated immediately
Light Insulation	Basement-west hallway Estimated: 1 Main floor-W-N lab, NE & main entrance, storage room Estimated: 4 2 nd floor-hallway, storage, office 4, 8, 10 and stairway Estimated: 7	The light insulation is in good condition, is highly friable and is not accessible. It also has an extremely high asbestos content. The risk of exposure is moderate and should be controlled.
Interior Caulking	Basement coolers (storage 4 & 5) Estimated: 1 m	The caulking is located in a relatively unused area and is in good condition. There is little risk to the occupants.
Boiler Insulation	Basement furnace room boiler Estimated: 1 unit (1.5 m ³)	The insulation is in poor condition, is highly friable and is moderately accessible. It also has high asbestos content. The risk of exposure is high and the insulation should be removed immediately.
#14 Soils Research Building (demolition)		
Floor Tiles without asbestos mastic	1 st floor entry (gray 12x12) Estimated: 20 m ² 2 nd floor-power panel room (dark gray 9x9) Estimated: 8 m ²	As long as the tiles are in good condition, there is low risk. The majority of the tiles were in fair condition and pose a low risk of exposure. These floor tiles do not need to be abated prior to demolition.
Floor tiles with asbestos mastic	1 st floor-SW lab, 2 nd floor-all (white/gray 9x9) Estimated: 170 m ² 1 st floor-1 st floor-NW lab, under stairs (light & dark brown 9x9) Estimated: 55 m ²	As long as the tiles are in good condition, there is low risk. The majority of the tiles were in fair condition and pose a low risk of exposure. These floor tiles must be abated before demolition.
Sheet Linoleum	1 st floor-NE lab, hallway, growth chamber room, washroom (brown squares) Estimated: 84 m ²	The brown squares flooring is in poor condition and presents a high risk of exposure requiring immediate abatement. This linoleum needs to be abated prior to demolition



ACM	EXTENT	IMPACT*
Transite Boards	2 nd floor-walls, ceiling, floor Estimated: 600 m ²	<p>The panel majority boards are only moderately accessible and are in good condition. They are low risk as long as they are not disturbed by cutting, hammering, drilling, etc. All maintenance staff should be educated and trained regarding this ACM.</p> <p>The 2 transite boards leaning on the wall of SW lab and on the 2nd floor in the SW corner of the hall are both highly accessible and pose a risk.</p> <p>All the transite board needs to be abated before demolition.</p>
Sink insulation	1 st floor-SW lab (bronze) 1 st floor-NE lab (gray) Estimated: 4 sinks	<p>The sink insulation is in good condition and was observed in a cabinet. There is low risk as long as the insulation is not touched or disturbed.</p> <p>The sink insulation (or entire sink unit) needs to be abated before demolition.</p>
Drywall Mud	1 st floor-SW lab, NW lab, furnace room Estimated: 200 m ²	<p>The majority of the drywall mud was in fair condition. If the drywall mud is in good condition and not disturbed there is low risk of exposure.</p> <p>All drywall needs to be abated before demolition.</p>
#15 Ecology Building		
Sink insulation	1 st floor-S lab (white/silver) Estimated: 2 sinks	<p>The sink insulation is in good condition and was observed in a cabinet. There is low risk as long as the insulation is not disturbed. Controls should be implemented to ensure the non-disturbance of this ACM, including the restriction of storage of items under the sinks or educating occupants using this space.</p>
Floor Tiles	1 st floor-north & south lab, office, entry (blue/white 12x12) Estimated: 90 m ² 1 st floor-north & south storage, washroom, hallway (white/gray 9x9) Estimated: 60 m ²	<p>As long as the tiles are in good condition, there is low risk. The tiles were in fair to good condition and pose a low risk of exposure. If the condition of the tiles deteriorates, or there are renovations, there is a higher risk of exposure and it should be abated.</p>
Countertops	1 st floor-N lab, 2 nd floor-north side adj. to stairwell (gray) Estimated: 3.3 m ² 2 nd floor-east side adj. to stairwell (green) Estimated: 0.84 m ²	<p>The countertops ranged in condition from poor to good and all are highly accessible. They also have a high asbestos content and can be damaged. The risk of exposure is high for all ACM containing countertops and they should be immediately abated.</p>
Drywall Mud	1 st floor-furnace room (yellow) Estimated: 38 m ²	<p>The drywall mud was in good condition. If the drywall mud is in good condition and not disturbed there is low risk of exposure. If the condition of the drywall deteriorates, or there are renovations, there is a higher risk of exposure and should be abated.</p>



ACM	EXTENT	IMPACT*
#17 Carpenter Shop		
Vermiculite Insulation	Attic Estimated: 225m ²	The insulation leaking out of the ceiling in the storage area above the office does pose a high risk of exposure and should be abated immediately. The vermiculite insulation is undisturbed in the main portion of the ceiling. If the asbestos containing vermiculite remains undisturbed there is little risk to occupants. If personnel are required to access this area, they must wear proper personal protective equipment (PPE) to avoid potential exposure to airborne fibres. Abatement should be considered where maintenance work is required that may disturb the vermiculite.
Drywall Mud	Entrance hallway, office, utility room, washroom, ½ walls in paint storage room Estimated: 164 m ²	The drywall mud was in good condition. If the drywall mud is in good condition and not disturbed there is low risk of exposure. If the condition of the drywall deteriorates, or there are renovations, there is a higher risk of exposure and it should be abated.
Floor Tiles	Office (gray 12x12) Estimated: 16 m ² Washroom (gray 9x9) Estimated: 6 m ²	The floor tiles were in good condition. As long as the tiles are in good condition, there is low risk. Any damaged tiles should be removed and replaced.
Transite Boards	Leaning against wall (2) Estimated: 2.16 m ²	The 2 transite boards leaning on the wall are highly accessible, non-functional and are in poor condition posing an immediate risk. These boards should be removed.
Light Insulation	Incandescent light fixture stored in crawl space above office Estimated: 1	The light insulation is in good condition, is highly friable and is not accessible. It also has a high asbestos content. The risk of exposure is moderate and should be controlled.
#18 Apiculture Laboratory		
Interior Caulking	Basement coolers (storage 1-4) Estimated: 2 m	The caulking has a moderate to high asbestos content, low friability and is in good condition. As long as the condition of the caulking does not deteriorate there is a low risk of exposure.
Vermiculite Insulation	Attic Estimated: 110 m ²	The vermiculite insulation is undisturbed. If the asbestos containing vermiculite remains undisturbed there is little risk to occupants. If personnel are required to access this area, they must wear proper personal protective equipment (PPE) to avoid potential exposure to airborne fibres. Abatement should be considered where maintenance work is required that may disturb the vermiculite.
#26 Storage		
Transite Boards	NW corner of the threshing room & NE corner of the furnace room Estimated: 11 m	They are low risk as long as they are not disturbed by cutting, hammering, drilling, etc. All relevant staff should be educated and trained regarding this ACM.
Floor Tiles	Washrooms, hallway, office 4 (green 9x9) Estimated: 50 m ² Lab 1 and office 2 & 3 Estimated : 30m ²	The tiles are in poor condition and pose a medium risk. The damaged tiles should be immediately abated and replaced.



ACM	EXTENT	IMPACT*
Vermiculite Insulation	Attic Estimated: 540 m ²	High risk to occupants if the ACM is exposed and disturbed. This insulation is disturbed by the rodent activity and storage of miscellaneous items in the attic. There is insulation leaking from the ceiling into certain rooms, where there is a high risk of exposure. There is also water damage on the ceiling which is holding the ACM in place. This ACM should be abated immediately.
Drywall Mud	Entire building (walls & ceiling) Estimated: 1210 m ²	The drywall mud was in good condition with the exception of certain areas with water damage. If the drywall mud is in good condition and not disturbed there is low risk of exposure. If the condition of the drywall deteriorates, or there are renovations, there is a higher risk of exposure and should be abated. The drywall mud which is in poor condition (water damaged) can lead to a high risk of exposure and should be abated.
Counter Top	Lab 2, office 3 (gray) Estimated: 14 m ²	The countertops were in good condition and are highly accessible. They also have a high asbestos content and can be damaged. The risk of exposure is high for all ACM containing countertops and they should be immediately abated.
#35 Garage		
Vermiculite	Transecting center portion of shop (brown/gray cinder block) Estimated: 80 m ²	This insulation is contained within the cinderblock wall and is in good condition. There is only a high risk to occupants if the ACM is exposed and disturbed. If the vermiculite remains undisturbed there is little risk to occupants. However, if there is to be any demolition to the wall, the vermiculite should be abated first.

*NOTE: any ACM materials must only be handled/abated by trained and experienced personnel.

Only ACM in poor condition (i.e. damaged or friable) or that could be disturbed during renovation, maintenance, or other activities, requires abatement.

Asbestos abatement must be carried-out by qualified personnel who are experienced and trained in asbestos removal. Air monitoring and inspections must be completed during the abatement to ensure the safety of the abatement personnel and any unprotected persons in the area.

A management plan needs to be developed to address any ACM remaining on site.

An inventory of all asbestos containing materials should be maintained, and updated whenever any ACM is abated. An inspection of all ACM should be conducted on a regular basis, at least annually, to identify any change in the condition of the ACM.

Maintenance staff and contractors should be made aware, either by labeling of ACM, or by training, of the location of existing ACM, so that is not accidentally disturbed during any renovation or maintenance work.



➤ **LEAD**

There are several areas which contain lead based paint in the buildings. Lead based paint does not pose a risk unless it is disturbed and dust is created allowing for the lead to become airborne. Also, all batteries (emergency lights, alarm systems, miscellaneous) should be recycled and properly disposed of. The table below summarizes the locations and extent of the lead based paint.

Table 49: Extent and Recommendations of Lead Based Paint for Beaverlodge

LEAD PAINT	EXTENT	IMPACT*
#1 Administration Office		<p>There is little risk to occupants as long as the paint remains in good to fair condition and is not disturbed. Disturbance of lead based paint causes the release of lead in the dust.</p> <p>If the lead based paint is to be disturbed, then the workers must wear appropriate PPE.</p> <p>When there is disposal of the lead based paint materials the landfill must be notified of the lead content of the paint. The landfill may require abatement or further testing of the lead paint before disposal, if the paint is in poor condition.</p>
Exterior White	Doors frames and window trim Total Estimate: 3 doors and 42 windows	
Interior Black	Basement dark room Total Estimate: 30 m ²	
#10 Canola Laboratory		
Interior White/yellow	Basement storage rooms 1, 2, 3 and 9 Total Estimate: 120 m ²	
Exterior White	Door frames and window trim Total Estimate: 4 doors and 38 windows	
#14 Soils Research Building (demolition)		
Exterior White	Door frames and window trim Total Estimate: 3 doors and 14 windows	
#15 Ecology Building		
Interior White	2 nd floor walls and ceilings Total Estimate: 150 m ²	
#17 Carpenter Shop		
Exterior Blue	Exterior Total Estimate: 350 m ²	
#18 Apiculture Building		
Exterior White	Door frames, window trim and siding Total Estimate: 110 m ²	

*NOTE: any lead based materials must only be handled/abated by trained and experienced personnel.

➤ **PCBs**

All fluorescent light ballasts should be checked for PCBs at the time of removal using the most current version of Environment Canada publication: Identification of Lamp Ballasts Containing PCBs. Those that do contain PCBs must be handled, packaged and disposed of by the current regulations and personnel must be equipped with proper personal protection equipment.

The following outlines known PCBs of concern:



Table 50: Extent and Recommendations of PCB Containing Light Ballasts for Beaverlodge

PCB	EXTENT	IMPACT*
#10 Canola Laboratory		
Fluorescent Light Ballasts	Second floor S.W. office and lunch room (*leaking) Total Estimate: 3	As long as the PCB containing fluorescent light ballasts are in good condition and not damaged and PCBs remain enclosed (not leaking) there is low risk to occupants. It is recommended all leaking fluorescent light ballasts are removed and disposed immediately.
#14 Soil Research Building		
Fluorescent Light Ballasts	Main floor S.W. lab (*2 leaking) and second floor labs one and two (*1 leaking) Total Estimate: 8	
#17 Carpenter Shop		
Fluorescent Light Ballasts	Total Estimate: 1	
#26 Storage		
Fluorescent Light Ballasts	Total Estimate: 28	

➤ **MERCURY**

Fluorescent light tubes in the fluorescent light fixtures may contain varying amounts of mercury vapor, even newly purchased tubes/bulbs. There are hundreds of fluorescent tubes and some compact fluorescent bulbs throughout the buildings. All mercury containing items should be stored to protect from breakage and recycled according to the applicable regulations.

The following outlines mercury containing materials of concern:



Table 51: Extent and Recommendations of Mercury Containing Materials for Beaverlodge

MERCURY	EXTENT	IMPACT*
#10 Canola Laboratory		
Thermostats	1 st floor hallway Total Estimate: 1	As long as the mercury containing materials are in good condition and not damaged and mercury remains enclosed (not leaking) there is low risk to occupants. Any mercury items should be recycled and disposed according to current regulations.
#14 Soils Research Building		
Thermostats	1 st floor hallway and 2 nd floor lab 1	
Thermometers	1 st floor growth chamber Total Estimate: 2 thermostats and 2 thermometers	
#15 Ecology Building		
Thermostats	1 st floor hallway Total Estimate: 1	
#17 Carpenter Shop		
Thermostats	N.W. corner of shop Total Estimate: 1	
#25 Honey Extraction Building		
Thermostats	Main area on west wall Total Estimate: 1	
#26 Storage		
Thermostats	Air drying room	
Thermometers	Cooler Total Estimate: 1 thermostat and thermometers	
#36 Forage Building		
Thermometers	Lab, lunch room and cool room Total Estimate: 3	
#45 Chemical		
Thermostats	Center room Total Estimate: 1	

➤ **OZONE DEPLETING SUBSTANCES**

The following outlines the ODS containing materials of concern:



Table 52: Extent and Recommendations of Ozone Depleting Substances for Beaverlodge

ODS	EXTENT	IMPACT*
#1 Administration		The ODS units should be recycled/recovered by a qualified and experienced worker according to ozone depleting substance and halocarbons regulations.
Mini-fridge	Main floor storage Total Estimate: 1 (1 oz R12)	
#10 Canola Laboratory		
Fridges	2 nd floor office 2	
Incubators	Total Estimate: 1 fridge (5 oz R12), 1 fridge (5.25 oz R12), and 3 incubators (27 oz R12 total)	
#14 Soils Research Building		
Fridges Growth Chamber	1 st floor growth chamber room, 1 st floor N.W. lab and 2 nd floor lab 2 Total Estimate: 1 growth chamber (unknown amount R12), 1 fridge (5 oz R12), 1 fridge (4.2 oz R12) and 1 fridge (4.75 oz R12)	
#15 Ecology Building		
Fridge Freezer	Total Estimate: 1 suspect fridge and 1 suspect freezer	
#18 Apiculture Laboratory		
Freezer	Total Estimate: 1 freezer (unknown R12 amount)	
#36 Forage Building		
Fridges Freezers	Total Estimate: 1 fridge (7.1 oz R12), 1 fridge (7.4 oz R12) and freezer (8.0 oz R12)	

➤ **RADIOACTIVE MATERIALS**

The following outlines radioactive materials of concern:

Table 53: Extent and Recommendations of Radioactive Materials for Beaverlodge

RADIOACTIVE MATERIAL	EXTENT	IMPACT*
#1 Administration		When radioactive materials are not in use and are to be disposed of they should be disposed of according to the current regulations of the Nuclear Safety Control Act and Nuclear Substances and Radiation Devices Regulations. Radioactive smoke detectors, in quantities of 10 or less, may be disposed in normal household garbage.
Smoke detectors	Basement hallway, main floor hallway and 2 nd floor east hallway Total Estimate: 3	
#14 Soils Research Building		
Smoke detector	2 nd floor hallway Total Estimate: 1	
#18 Apiculture Laboratory		
Smoke detector	Basement under stairs on shelf Total Estimate: 1	
#35 Garage		
Smoke detectors (stored in a box)	2 nd floor north side shelving Total Estimate: 7	



➤ **MISCELLANEOUS CHEMICALS**

All miscellaneous chemicals need to be disposed and stored according to current regulations and manufactures recommendations.

➤ **MOULD**

The following outlines mould and water damaged areas of concern:

Table 54: Extent and Recommendations of Mould Growth and Water Damage for Beaverlodge

MOULD/WATER DAMAGE	EXTENT	IMPACT*
#10 Canola Laboratory		
Water damage	Basement and main floor storage room	It is recommended that the source of the water leakage be determined and repaired, and any water damaged materials which are potential sources of mould growth, be abated. The areas with visible 'suspect' mould growth should be abated immediately.
Mould	Total Estimate: 190m ²	
#14 Soils Research Building		
Water damage	1 st floor furnace room, 1 st floor N.W. lab and 2 nd Lab 2	
	Total Estimate: 3.5m ²	
#15 Ecology Building		
Water damage	Chimney areas	
	Total Estimate: 1 m ²	
#17 Carpenter Shop		
Water damage	Basement area	
	Total Estimate: unknown	
#25 Honey Extraction		
Water damage	Ceiling tile	
	Total Estimate: 0.3 m ²	
#26 Storage		
Water damage	Threshing room, office 1, seed storage room, furnace room, air drying room, men's washroom, women's washroom, main hallway and attic	
Mould	Total Estimate: 4 m ² mould and 7 m ² water damage	

➤ **PESTS**

#1 Administration Office had a significant amount of squirrels and mice disturbing the ACM vermiculite. A qualified pest control contractor should be brought in to eliminate the problem. If this involves entering attic spaces, or disturbing ACM vermiculite insulation, the contractor will need to ensure that the workers are adequately protected from exposure to airborne fibres. The feces should be cleaned up by experienced and trained personnel.



If any other suspect materials become exposed during demolition or maintenance activities, the suspect materials should be tested.

Procedures for hazardous materials identified in this report should be developed and communicated to anyone who may come in contact with these materials. Also, anyone who may come in contact with hazardous materials should be informed on how to identify where they may be present, and how to proceed if they observe some suspect materials.

A management and monitoring plan should be developed and implemented to address the hazardous materials identified in this report and any possible future hazardous materials which may be encountered.



5.0 FORT VERMILLION

The following are the results of the investigation at the Fort Vermillion Research Centre. Please refer to Appendix 3 for a detailed room description, sampling diagrams, a photographic log and a copy of the laboratory reports.

5.1 SCOPE OF WORK

The hazardous materials assessment includes:

- assessment and sampling of suspect materials which may contain asbestos and lead based paint;
- assessment of polychlorinated biphenyls (PCB), mercury, ozone-depleting substances (ODS), radioactive materials and mould;
- analysis and reporting of findings with recommendations.

5.2 SITE DESCRIPTION

The subject site is located at the Fort Vermillion Research Center situated just west of the Town of Fort Vermillion, AB. The site consists of thirteen different buildings, twelve of which are included in this audit.

#2 ADMINISTRATION OFFICE

The building is mixed construction with the exterior walls consisting of wood and concrete stucco and the roof is tar/gravel. The administration block is a two-story with a basement. The interior walls were either drywall or plaster on wood studs. The floors consisted of concrete, tile, laminate or linoleum. Excessive water damage was noted on the ceilings on the main and upper levels. The north portion of the building has appeared to shift as there was a large crack in the walls through both levels. The building has an estimated area of 720 m². The building is scheduled for demolition and subsequently, there are no services to the building.

#6 GARAGE AND STORAGE

The building is mixed construction with the exterior walls consisting of wood siding and a metal roof. The interior walls and ceiling was wood plank with a dirt floor. There were wood chips for insulation. There are six metal garage doors. The garage has an estimated area of 120 m².

#14 DRYING AND THRESHING SHED

The building is mixed construction with the exterior walls consisting of wood siding over a wood frame and a metal roof. Wood chips are used for insulation and the floor is painted concrete. This building has an estimated area of 80 m².



#23 WORKSHOP AND OFFICE

The building consists of exterior wood siding which was painted white and a metal roof. The floor is painted concrete and there are two drain/pipe sumps. The workshop has an estimated footprint of 160 m².

#33 PROCESSING AND CARPENTER SHOP

The building consists of exterior wood siding which was painted white on red and a metal roof. The floor was painted concrete and there were two sump pits. Mouse feces were noted around the building. The workshop has an approximate footprint of 140 m².

#37 DRYING SHED

The building is mixed construction with the exterior walls consisting of metal siding over wood boards and a metal roof. The floor is concrete and asbestos boards covered the walls and ceiling. The shed has an approximate area of 18 m².

#57 SEWAGE LIFT PUMP HOUSE

The building is mixed construction with the exterior walls consisting of wood siding which was painted white and a metal roof. The painted concrete floor inside was in poor condition. The pump house has an approximate area of 20 m².

#59 TIN BARN STORAGE

The building is mixed construction with the exterior walls consisting of metal siding over treated wood and a metal roof. There was no insulation present and farm equipment was stored inside. The barn has an approximate area of 200 m².

#60 DUPLEX HOUSE

The building consists of exterior stucco on cement on wood framing. There are asphalt shingles on the roof and red paint on the window trim and eaves trough. It is a two-story building with two separate living units. There was a basement on each side. The duplex has an approximate footprint of 150 m².

#60a GARAGE

The building consists of exterior wood siding on wood framing. There are asphalt shingles on the roof and red paint on the window trim and eaves trough. The floor is a concrete slab. The garage has an area of approximately 45 m².



#62 WEIGH SCALE

The building consists of painted wood siding with a treated wood interior and a metal roof. There is a dirt floor and no insulation. The scale has a total approximate area of 6 m².

PUMP HOUSE

The building is mixed construction with the exterior walls consisting of wood siding painted white and a metal roof. The floor was painted concrete and water/structural damage was noted. The pump house and lean-to has an area of approximately 60 m².

For a detailed list of the rooms and construction materials, refer to Appendix 1.



5.3 RESULTS

5.3.1 ASBESTOS CONTAINING MATERIALS (ACM)

Seventy nine (including three duplicates) of suspected ACM were collected and sent for analysis. Twenty three of the samples were found to contain to be asbestos containing. The results are summarized in the table below and are contained in Appendix 1.

Table 55: Asbestos Analysis Results Summary for Fort Vermillion

SAMPLE	COLOUR	DESCRIPTION	LOCATION (# - BUILDING NO.)	CONDITION	RESULT* (ASBESTOS TYPE)
A1	Silver	Duct Insulation	#33 east room	Poor	65% (chrysotile)
A2	White	Putty	#33 exterior window	Poor	None detected
A3	Brown	Vermiculite	#33 walls	Good	None detected
A4	Brown	Vermiculite	#33 walls	Good	None detected
A5	Brown	Vermiculite	#33 walls	Good	None detected
A6	Gray	Chimney mortar	#33 furnace room attic	Good	None detected
A7	Green	Welding blanket	#23 storage area	Fair	None detected
A8	White	Putty	#23 exterior window south	Poor	None detected
A9	Black	Insulation	#23 attic loose wire	Poor	None detected
A10	Black	Tar paper	#23 shop north wall	Good	None detected
A11	Green	Board	#23 shop	Poor	25% (chrysotile)
A12	Silver	Mortar	#23 chimney	Fair	None detected
A13	Black	Wire insulation	#14 wire attic	Fair	None detected
A14	White	Caulking	#14 east window	Poor	0.25% (chrysotile)
A15	White	Drywall mud	#60 basement	Good	2.5% (chrysotile)
A16	Yellow w/ blue and brown	Floor tile	#60 basement stair landing	Poor	None detected
A17	Off white w/ brown	Floor tile	#60 entry way	Poor	1.7% (chrysotile)
A18	White	Drywall mud	#60 entry way	Fair	3.1% (chrysotile)
A19	Brown	Linoleum	#60 stair runner	Poor	None detected
A20	Green	Drywall mud	#60 Conference room south closet	Poor	2.0% (chrysotile)
Dup 1 (A20)	Green	Drywall mud	#60 Conference room south closet	Poor	1.2% (chrysotile)
A21	Orange w/blue & purple	Floor tile	#60 washroom closet	Good	None detected
A22	White	Drywall mud	#60 washroom	Fair	None detected
A23	White	Drywall mud	#60 stairwell	Fair	1.5% (chrysotile)
A24	White	Stucco	#60 exterior northwest	Good	None detected
A25	White	Stucco	#60 exterior southwest	Good	None detected
A26	White	Stucco	#60 exterior east	Good	None detected
A27	White	Pipe wrap	#60 basement	Good	None detected
A28	Black/red	Shingle	#60 under deck dog house	Good	None detected
A29	Black	Tar paper	#60 exterior	Good	None detected



SAMPLE	COLOUR	DESCRIPTION	LOCATION (# - BUILDING NO.)	CONDITION	RESULT* (ASBESTOS TYPE)
A30a	White w/blue	Floor tile	#60 south washroom	Fair	None detected
A30b	White w/blue	Mastic	#60 south washroom	Fair	None detected
A31	Black	Tar paper	#57 exterior wall	Good	None detected
A32	White	Caulking	#57 door	Poor	None detected
A33	Brown	Floor tile	#2 basement vault	Poor	None detected
A34	Brown w/flecks	Floor tile	#2 basement vault	Poor	None detected
A35a	Brown w/dark brown	Floor tile	#2 basement under stairs	Poor	4.7% (chrysotile)
A35b	Brown w/dark brown	Mastic	#2 basement under stairs	Poor	None detected
A36a	Brown w/dark brown	Floor tile	#2 basement SE storage room	Poor	5.3% (chrysotile)
A36b	Brown w/dark brown	Mastic	#2 basement SE storage room	Poor	None detected
A37	Brown w/dark brown	Floor tile	#2 basement SE storage room	Poor	5.1% (chrysotile)
A38	White	Pipe insulation	#2 basement NE office	Fair	60% (chrysotile)
A39	White	Pipe insulation	#2 basement NE office	Fair	65% (chrysotile)
A40	White	Pipe insulation	#2 basement NE office	Fair	65% (chrysotile)
A41	Green	Transite board	#2 basement utility room	Fair	30% (chrysotile)
A42	White	Pipe insulation	#2 basement utility room	Fair	55% (chrysotile)
Dup 2 (A42)	White	Pipe insulation	#2 basement utility room	Fair	70% (chrysotile)
A43	White	Pipe insulation	#2 basement utility room	Fair	80% (chrysotile)
A44	Green	Flooring	#2 north stairwell	Poor	None detected
A45	Green	Flooring	#2 main entrance	Poor	None detected
A46	Green	Flooring	#2 main men's washroom	Poor	None detected
A47	Brown	Insulation paper	#2 main NW office	Good	None detected
A48	Brown	Insulation paper	#2 main east office	Good	None detected
A49	White	Plaster	#2 main reception	Poor	None detected
A50	White	Plaster	#2 main – girls washroom	Poor	None detected
A51	White	Plaster	#2 main SE office	Poor	None detected
A52a	White	Plaster	#2 main NW office	Poor	None detected
A52b	White	Plaster	#2 main NW office	Poor	None detected
A53a	White	Plaster	#2 2 nd floor NW office ceiling	Poor	None detected



SAMPLE	COLOUR	DESCRIPTION	LOCATION (#- BUILDING NO.)	CONDITION	RESULT* (ASBESTOS TYPE)
A53b	White	Plaster	#2 2 nd floor NW office ceiling	Poor	None detected
A54a	White	Plaster w/stipple	#2 2 nd floor south room ceiling	Poor	None detected
A54b	White	Plaster w/stipple	#2 2 nd floor south room ceiling	Poor	None detected
A55a	White	Plaster w/stipple	#2 2 nd floor file room	Poor	None detected
A55b	White	Plaster w/stipple	#2 2 nd floor file room	Poor	None detected
A56	White	Plaster w/stipple	#2 2 nd floor file room	Poor	None detected
A57	Gray	Floor	#2 2 nd floor hall	Poor	None detected
Dup 3 (A57)	Gray	Floor	#2 2 nd floor hall	Poor	None detected
A58	Gray	Floor	#2 2 nd floor south room	Poor	None detected
A59	Gray	Floor	#2 2 nd floor NE office	Poor	None detected
A60	Yellow	Stucco	#2 main exterior entrance	Good	None detected
A61	White/brown	Caulk	#2 main floor east window	Poor	None detected
A62	White/brown	Caulk	#2 window inside foyer	Poor	None detected
A63a	Yellow	Stucco	#2 exterior north wall	Good	None detected
A63b	Yellow	Stucco	#2 exterior north wall	Good	None detected
A64	Gray	Mortar	#2 exterior chimney	Poor	None detected
A65a	Off white	Stucco	#2 exterior chimney	Poor	None detected
A65b	Off white	Stucco	#2 exterior chimney	Poor	None detected
A66a	Gray	Parchment	#2 exterior west bottom	Poor	None detected
A66b	Gray	Parchment	#2 exterior west bottom	Poor	None detected
A67	Gray	Parchment	#2 exterior north bottom	Poor	None detected
A68	Black	Shingle	Pump house lean 2 roof	Poor	None detected
A69	Gray	Caulking	Pump house south window	Poor	0.25% (chrysotile)
A70	Brown	Vermiculite	Pump house lean 2 roof	Poor	0.32% (actinolite)
A71	Brown	Vermiculite	Pump house roof	Poor	0.32% (actinolite)
A72	White	Wall board	#37 walls	Good	25% (chrysotile)
A73	Yellow	Insulation board	#37 insulation on dryer north doors	Fair	70% (chrysotile)
A74	Black	Door gasket	#37 gasket in doors north	Poor	None detected
A75	Black	Door gasket	#37 gasket in south dryer doors	Poor	None detected
A76	White	Insulation board	#37 dryer south doors	fair	10% (amosite) & 10% (chrysotile)

BOLD – over criteria*

* Criteria: ≥1% asbestos: asbestos containing material as defined by the Alberta Asbestos Abatement Manual, July 2009. Vermiculite is positive for asbestos with asbestos present in any amount.



- all building materials containing more than 1% (by weight) asbestos must be removed prior to demolition (Work Safe Alberta ASB003 – Asbestos Revised July 2009 and OHS Code Part 4) *with some exceptions*

Due to the size and amount of ACM possibly present on this site, representative sampling was conducted. It was not practical or necessary to sample every item which may be an ACM. If the representative samples test positive for asbestos, it is assumed the identical materials, which were not tested, are also positive. For example, the drywall mud and pipe elbow insulation tested positive and therefore all drywall mud and pipe insulation is assumed to be positive for asbestos.

Below is a list of the types of materials sampled and the results for asbestos (# samples positive and/or # samples negative) in brackets.

#2 Administration Office (44 asbestos samples)

- Brown floor tile (1 negative)
- Brown with flecks floor tile (1 negative)
- Brown with dark brown floor tile (3 positive)
 - Mastic (2 negative)
- White pipe insulation (5 positive)
- Green transite board (1 positive)
- Green flooring (3 negative)
- Brown insulation paper (2 negative)
- White plaster (7 negative)
- White plaster with stipple (5 negative)
- Gray flooring (3 negative)
- Yellow stucco (3 negative)
- White/brown caulk (2 negative)
- Gray mortar (1 negative)
- Off white stucco (2 negative)
- Gray parchment (3 negative)



#6 Garage and Storage (0 asbestos samples)

#14 Drying and Threshing Shed (2 asbestos samples)

- Black wire insulation (1 negative)
- White caulking (1 negative)

#23 Workshop and Office (6 asbestos samples)

- Green welding blanket (1 negative)
- White putty (1 negative)
- Black wire insulation (1 negative)
- Black tar paper (1 negative)
- Green board (1 positive)
- Silver mortar (1 negative)

#33 Processing & Carpenter Shop (6 asbestos samples)

- Silver duct insulation (1 positive)
- White putty (1 negative)
- Brown vermiculite (3 negative)
- Gray chimney mortar (1 negative)

#37 Drying Shed (5 asbestos samples)

- White wall board (1 positive)
- Yellow insulation board (1 positive)
- Black door gasket (2 negative)
- White insulation board (1 positive)

#57 Sewage Lift Pump House (2 asbestos samples)

- Black tar paper (1 negative)
- White caulking (1 negative)

#59 Tin Barn Storage (0 asbestos samples)

#60 Duplex House (16 asbestos samples)

- Drywall mud (4 positive)
- Yellow with blue and brown floor tile (1 negative)
- Off-white with brown floor tile (1 positive)
- Brown linoleum (1 negative)
- Orange with blue and purple flooring (1 negative)
- Stucco (3 negative)
- White pipe wrap (1 negative)
- Black/red shingle (1 negative)
- Black tar paper (1 negative)
- White with blue floor tile (1 negative)
 - Mastic (1 negative)



#60A Garage (0 asbestos samples)

#62 Weigh Scale (0 asbestos samples)

Pump House (4 asbestos samples)

- Black shingle (1 negative)
- Gray caulking (1 negative)
- Brown vermiculite (2 positive)

There is vermiculite spilling from the ceiling space due to ceiling failure.

The following is considered to be ACM (refer to Appendix 3 for room details, diagrams outlining the locations and a photographic log):

- The **silver duct insulation** in #33 Processing & Carpenter Shop east room contains 65% chrysotile asbestos.
- The **drywall mud** in the #60 Duplex House contains up to 3.1% chrysotile asbestos.
- The **green board** in #23 Shop contains 25% chrysotile asbestos.
- The **white pipe insulation** in the #2 Administration Office basement contains 55 to 80% chrysotile asbestos.
- The **transite board** in the #2 Administration Office basement utility room contains 30% chrysotile asbestos.
- The brown with **dark brown floor tile** in #2 Administration Office building contains 4.7% chrysotile asbestos. There was no asbestos found in the associated mastic or leveling compound.
- The **off-white with brown floor tile** in #60 Duplex House contains 1.7% chrysotile asbestos. There was no asbestos found in the associated mastic or leveling compound.
- The **vermiculite** insulation found in the roof of the pump house contains 0.32% actinolite asbestos.
- The **wall board** in the #37 Drying Shed contains 25% chrysotile asbestos.
- The **insulation board** on the north dryer doors in the #37 Drying Shed contains 70% chrysotile asbestos.
- The **insulation board** on the south dryer doors in the #37 Drying Shed contains 10% amosite and 10% chrysotile.



5.3.2 LEAD PRODUCTS

Twenty eight (including duplicates) representative samples were sampled and placed in sealable containers for lead content analysis. Please refer to Appendix 3 for a detailed description, a sampling diagram, a photographic log and a copy of the laboratory reports. Six of the samples are considered lead based paint containing 0.5%, or above, lead by weight.

Table 56: Lead in Paint Analysis Results Summary for Fort Vermillion

SAMPLE	COLOUR	LOCATION (#- BUILDING NO.)	RESULTS (% LEAD BY WEIGHT)*
P1	White/red	#33 exterior paint	0.28
P2	Silver	#33 interior	0.0088**
P3	White	#33 interior west	0.027**
P4	White/red	#23 exterior paint	0.1
P5	Silver/white	#23 interior	0.0085**
P6	White	#14 interior east	0.011
PDup 1 (P6)	White	#14 interior east	0.012
P7	White/red	#14 exterior	0.2
P8	Light green	#60 basement door & frame	0.4**
P9	Light gray	#60 basement stairs	0.26
P10	Yellow	#60 basement stairwell	0.87
P11	Pink	#60 upstairs hall closet	0.13**
P12	Red	#60 exterior trim	0.36***
P13	White	#60 exterior trim	1.6
P14	White	#60A exterior	3.6
P15	White	#57 exterior	1.6
P16	White	#57 interior	0.011
P17	Light green	#2 interior basement; NW lab	0.0053
P18	Peach/pink	#2 main woman's washroom	0.058
P19	Yellow/green	#2 main NW office	0.42
P20	White/green	#2 main floor SE office	0.0099
P21	Brown	#2 exterior trim east	0.4
P22	Yellow	#2 exterior trim east	0.42
P23	White	Pump house exterior	1.6
PDup 2 (P23)	White	Pump house exterior	1.5
P24	White	Pump house west room	0.015
P25	White	#59 tin barn exterior paint	0.043
P26	White	#62 exterior paint	1.3

BOLD – over criteria

* lead >0.5% by weight is considered to be lead containing paint (Work Safe Alberta CH061 and the Federal Hazardous Products Act)

**Matrix/substrate interference possible. Sample results are not corrected for contamination by field or analytical blanks

***Insufficient sample provided to perform QC re-analysis

Below is a list of the colours of paints sampled and the results (# samples positive and/or # samples negative for lead based paint) in brackets.



#2 Administration Office (6 paint samples)

- Light green interior (1 negative)
- Peach/pink interior (1 negative)
- Yellow/green interior (1 negative)
- White/green interior (1 negative)
- Brown exterior (1 negative)
- Yellow exterior (1 negative)

#6 Garage and Storage (0 paint samples)

#14 Drying and Threshing Shed (2 paint samples)

- White interior (1 negative)
- White/red exterior (1 negative)

#23 Workshop and Office (2 paint samples)

- Silver/white interior (1 negative)
- White/red exterior (1 negative)

#33 Processing and Carpenter Shop (3 paint samples)

- Silver interior (1 negative)
- White interior (1 negative)
- White/red exterior (1 negative)

#37 Drying Shed (0 paint samples)

#57 Sewage Lift Pump House (2 paint samples)

- White interior (1 negative)
- White exterior (1 positive)

#59 Tin Barn Storage (1 paint sample)

- White exterior (1 negative)

#60 Duplex House (6 paint samples)

- Light green interior (1 negative)
- Light gray interior (1 negative)
- Yellow interior (1 positive)
- Pink interior (1 negative)
- Red exterior (1 negative)
- White exterior (1 positive)

#60A Duplex Garage (1 paint sample)

- White exterior (1 positive)

#62 Weigh Scale (1 paint sample)

- White exterior (1 positive)



Pump House (2 paint samples)

- White interior (1 negative)
- White exterior (1 positive)

The following is considered lead containing paint:

- **White** paint on the exterior of the following:
 - #57 Sewage Lift Pump House
 - #60 Duplex House trim
 - #60A Duplex Garage
 - #62 Weigh Scale
 - Pump house

- **Yellow** paint in the stairwell of the basement in the #60 Duplex House.

5.3.3 POLYCHLORINATED BIPHENYLS (PCBs)

There were fluorescent light fixtures found throughout the entire site. It is understood this site has been retrofitted and there are no fluorescent light ballasts of concern remaining on site. Random fluorescent light ballasts were checked for PCBs and all were negative.

5.3.4 MERCURY

Fluorescent light tubes in the fluorescent light fixtures may contain varying amounts of mercury vapor, even newly purchased tubes/bulbs. There are hundreds of fluorescent tubes and some compact fluorescent bulbs throughout the buildings. The table below outlines the areas of concern.

Table 57: Mercury Results Summary for Fort Vermillion

BUILDING	LOCATION	TYPE / ESTIMATED QUANTITY
Throughout entire area and located in every room	Light bulbs and tubes	Fluorescent light tubes and bulbs
#2 Administration Office	Main level hallway	1 mercury thermostat
#14 Drying & Threshing Shed	West Room	1 mercury thermostat
#23 Workshop and Office	Shop	2 mercury thermostats
#33 Processing & Carpenter Room	West Room	1 mercury thermostat
#33 Processing & Carpenter Room	Seed Storage	1 mercury thermostat
#60 Duplex House	Living Room #2	1 mercury thermostat
Pump House	West Room	1 mercury thermostat



5.3.5 OZONE DEPLETING SUBSTANCES (ODS)

Many of the ODS in the building have already been removed. The table below outlines the remaining four ODS of concern.

Table 58: ODS Results Summary for Fort Vermillion

LOCATION (BUILDING/FLOOR/ROOM)	DESCRIPTION OF THE SYSTEM	TYPE OF ODS	ESTIMATED QUANTITY
#2 Administration Office /bsmt/NW lab	A/C Unit	*	*
#2 Administration Office /office 11	A/C Unit	*	*
#33 Processing & Carpenter/ east room	Older freezer	*	*
#33 Processing & Carpenter	Copeland Evaporator	*	*
#60 Duplex House	Two fridges	*	*

* unable to verify type and quantity

A/C = air conditioning

The following is a summary of the ozone depleting substances still present on site:

- There were 3 **fridges** which are suspected to contain R-12.
- There was 1 **evaporator** which is suspected to contain R-502.
- There were 2 a/c units which are suspected to contain R-11

5.3.6 RADIOACTIVE MATERIALS

No radioactive materials were observed on site.

5.3.7 MISCELLANEOUS CHEMICALS

Miscellaneous chemicals were observed at the following locations:



Table 59: Miscellaneous Chemicals Summary for Fort Vermillion

LOCATION (BUILDING, FLOOR, ROOM)	DESCRIPTION	ESTIMATED QUANTITY
#23 Workshop and Office/shop	Diesel fuel conditioner	2 L
	Oil	60 L
	Paint	4 L
	General cleaners	-
	Liquid buffer	1 L
	WD40	3 cans
	Jet Clean Plus	20 L
	Brake fluid	2 L
	Acetone	0.5 L
	Antifreeze	28 L
	Power Steering Fluid	1 L
	Varsol	20 L
	#33 Processing & Carpenter Shop	Paint
Sealer/primer		2 L
Plastic cement		8 L
Roof repair		8 L
Solvents		20 L
#57 Sewage Lift Pump House/interior	Coolant	4 L
#60 Duplex House/Boot room	Engine oil	5 L
#60 Duplex House/Boot room	Paint	2 L
#60 Duplex House/basement	Paint	30 L
#60 Duplex House/basement	Solvent	4 L
#60A Duplex Garage/interior	Paint	4 L
Pump House/East room	Chlorine	40 kg

5.3.8 MOULD

Some suspect mould and water damage and conditions which may lead to mould were observed at the subject site. The table below summarizes the locations of the damage.



Table 60: Mould/Water Damage Results Summary for Fort Vermillion

LOCATION (BUILDING, FLOOR, ROOM)	DESCRIPTION	ESTIMATED QUANTITY
#2 Administration Office, 2 nd floor ceiling	Water damage; ceiling failure and suspect mould observed throughout the entire building	Building size = 240 m ² x 3 levels
#2 Administration Office, main floor		
#2 Administration Office, basement		
#14 Drying and Threshing Shed	Water damage on ceiling in east room; 3 areas of water damage	0.2 m ² 0.6 m ² 0.3 m ²
#33 Processing & Carpenter Shop	Suspect mould in attic on ceiling along west wall	0.4 m ²
#60 Duplex House - north	Washroom #2; north wall and east closet	1 m ²
#60 Duplex House - north	Entrance closet on ceiling and exterior wall	2 m ²
#60 Duplex House - north	Conference room; south closet on ceiling and down the exterior wall	3 m ²
#60 Duplex House – south	NW bedroom closet ceiling	1 m ²
#60 Duplex House - south	Upstairs washroom on ceiling	0.5 m ²
Pump House	Exterior; lean-to roof on north side	3 m
Pump House	Interior; lean-to ceiling area; partial ceiling failure	2 m ²

There appears to be suspect mould growth and/or water damage at the following locations:

- #2 Administration Office
 - At the time of this assessment there were no utilities servicing the building and it had been abandoned
 - There had been a flood in the basement before the water service was shut-off
 - There was extensive water damage through the entire building. The basement damage from the flood and the main and 2nd floor from snow/rain entering the building through holes in the roof and windows
 - There were cracks in the walls on the north portion of the building
- #14 Drying and Threshing Shed
 - The ceiling located in the east room showed signs of water damage and suspect mould
- #33 Processing and Carpenter Shop
 - The attic ceiling had some water staining however the area was dry at the time of the assessment
- #60 Duplex House
 - It appeared there may have been water intrusion into the building envelope on the west face at the middle of the structure (where the two duplexes meet)



- There was water damage on the west wall in both closets from the ceiling towards the ground
 - On the exterior of the building at the subject location, there appeared to be an ice jam in the gutter
 - There was also water damage and suspect mould observed in both the washrooms
- Pump House
- The lean-to (or porch) portion of the pump house has significant water damage to the ceiling on the interior and roof on the exterior
 - The ceiling is sagging and close to collapsing

3.3.9 OTHER

PESTS

Building #6 Garage and Storage had a significant amount of bird and rodent feces.

Building #33 Processing and Carpenter Shop had a significant amount of rodent feces in the attic area and some in the main floor area.

SPILLS/STAINS

Building #23 Workshop and Office had two sumps and one pit and **Building #33 Processing and Carpenter Shop** had three pits in the floor which may have contamination.



5.3.10 SUMMARY OF RESULTS BY BUILDING

#2 Administration Office

The following table is a summary of the hazardous materials identified in the #2 Administration Office. Refer to Appendix 3b-3 - 5 for diagrams and Appendix 3c-2 - 4 and 8 - 9 for photographs.

Table 61: #2 Administration Office Hazardous Materials Summary for Fort Vermillion

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM floor tile (brown/dark brown)	Basement storage room and under the stairs	44 m ²
ACM pipe insulation	Entire basement; there may be insulated pipes in service areas not visible during the assessment (ex: walls)	≅ 120 m
ACM Transite Board	Walls and ceiling of the utility room in the basement	170 m ²
Mercury thermostat	Main level hallway	1
ODS – R11	2 air conditioning units; one in the basement NW Lab and one in the 2 nd floor NW office	8 oz
Mould/water damage	Water damage, ceiling failure and suspect mould observed throughout the entire building	922 m ²

6 Garage and Storage

The #6 Garage and Storage building contained a significant amount of bird and rodent feces, including remnants of carcasses used for feeding. Refer to Appendix 3b-6 for a diagram.

#14 Drying and Threshing Shed

The following table is a summary of the hazardous materials identified in the #14 Drying and Threshing Shed. Refer to Appendix 3b-7 for a diagram and Appendix 3c-9 for photographs.

Table 62: #14 Drying and Threshing Shed Hazardous Materials Summary for Fort Vermillion

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
Mercury thermostat	West room	1
Water damage	Ceiling in east room, 3 areas	0.023 m ² 0.061 m ² 0.18 m ²



#23 Workshop and Office

The following table is a summary of the hazardous materials identified in the #23 Workshop and Office. Refer to Appendix 3b-8 for a diagram and Appendix 3c-1 for a photograph.

Table 63: #23 Workshop and Office Hazardous Materials Summary for Fort Vermillion

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM Green Board	Main Shop on a mobile work bench adjacent the office doorway	0.9 m x 0.6 m
Mercury thermostat	North and south wall of main shop area	2
Miscellaneous chemicals	Main shop area	-

#33 Processing & Carpenter Shop

The following table is a summary of the hazardous materials identified in the #33 Processing & Carpenter Shop. Refer to Appendix 3b-9 for a diagram and Appendix 3c-1 for photographs.

Table 64: #33 Processing & Carpenter Shop Hazardous Materials Summary for Fort Vermillion

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM Duct insulation	East wall adjacent door on ductwork 0.3 m x 0.1 m x 2.4 m high	2.4 m
Mercury thermostat	West room and in the seed storage room	2
ODS – R12	East room (2 units)	8 oz
Miscellaneous chemicals	Main shop area	-
Suspect mould	On the attic ceiling, by the west wall	<1 m ²
Rodent feces	Attic space and some on the main level	44 m ²

#37 Drying Shed

The following table is a summary of the hazardous materials identified in the #37 Drying Shed. Refer to Appendix 3b-10 for a diagram and Appendix 3c-4 to 5 for photographs.

Table 65: #37 Drying Shed Hazardous Materials Summary for Fort Vermillion

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM Insulation board	North dryer doors and internal lining	1.5 m ²
ACM Insulation board	South dryer doors and internal lining	1.5 m ²
ACM Transite Board	Walls and ceiling	60 m ²



#57 Sewage Lift Pump House

The following table is a summary of the hazardous materials identified in the #57 Sewage Lift House. Refer to Appendix 3b-11 for a diagram and Appendix 3c-6 for photographs.

Table 66: #57 Sewage Lift Pump House Hazardous Materials Summary for Fort Vermillion

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
Lead in paint	White exterior paint on the trim and wood siding	20 m ²

#59 Tin Barn

There were no hazardous materials identified in #59 Tin Barn.

#60 Duplex House

The following table is a summary of the hazardous materials identified in the #60 Duplex House. The #2 identifier is referencing the south side residence. Refer to Appendix 3b-13 to 15 for diagrams and Appendix 3c-6 and 9-10 for photographs.

Table 67: #60 Duplex House Hazardous Materials Summary for Fort Vermillion

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM drywall mud	All walls and ceilings which are drywall (all rooms on main and 2 nd floor of both units)	792 m ²
ACM floor tile	Main entry way on north unit	3 m ²
Lead in paint	Yellow in basement stairwell of the north unit	6 m ²
Lead in paint	White exterior trim on basement windows , door casings and exterior decks	4 windows 4 doors 8 m ²
Mercury Thermostat	Both living rooms	2
ODS fridge-R12	Both kitchens	10 oz
Miscellaneous chemicals	Main entrance closet and basement	-
Water damage	Middle portion of the west wall there is water damage on first and 2 nd floors Some water damage and suspect mould in both the washrooms	6 m ² 1.5 m ²



#60A Duplex Garage

The following table is a summary of the hazardous materials identified in the #60A Duplex Garage. Refer to Appendix 3b-16 for a diagram and Appendix 3c-6 for photographs.

Table 68: #60A Duplex Garage Hazardous Materials Summary for Fort Vermillion

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
Lead in paint	White exterior on wood siding and trim	40 m ²

#62 Weigh Scale

The following table is a summary of the hazardous materials identified in the #62 Weigh Scale. Refer to Appendix 3b-17 for a diagram and Appendix 3c-7 for photographs.

Table 69: #62 Weigh Scale Hazardous Materials Summary for Fort Vermillion

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
Lead in paint	White exterior on siding and frames	10 m ²

Pump House

The following table is a summary of the hazardous materials identified in the Pump House. Refer to Appendix 3b-18 for a diagram and Appendix 3c-7 for photographs.

Table 70: Pump House Hazardous Materials Summary for Fort Vermillion

HAZARDOUS MATERIAL	ROOMS	ESTIMATED QUANTITY
ACM vermiculite	Attic insulation	60 m ²
Lead in Paint	White exterior on the wood siding and trim	60 m ²
Mercury thermometer	West room	1
Water damage	The lean-two or porch portion of the pump house has significant water damage to the ceiling on the interior and roof on the exterior edge	5 m ²



5.4 ASSESSING RISK EXPOSURE FOR ASBESTOS

There are eight major factors which assist in evaluating the condition of a particular asbestos installation.

The eight factors include:

1. Condition of Material
2. Water Damage
3. Exposed Surface Area
4. Accessibility
5. Activity and Movement
6. Air Plenum or Direct Air Stream
7. Friability
8. Asbestos Content

These factors have been put together into the following tables to allow for assessment to determine the degree of risk associated with existing asbestos. The parameters in Table 17 are applied to the ACM to derive a risk rating. These risk ratings are then compared to Table 18 to determine what type of action is required.

Table 71: Assessing Risk Exposure

Factor	Description	Rating of Risk Exposure
Accessibility of Material	Accessible in high activity areas	High (h)
	Accessible in low activity areas beyond the reach of the area occupants	Medium (m)
	Enclosed	Low (l)
Condition of Materials	Severely damaged	High (h)
	Mild to moderate damage	Medium (m)
	Good condition	Low (l)
Friability of Materials	Easily breaks apart	High (h)
	Mild to moderate friability	Medium (m)
	Non-friable	Low (l)

* Information from *Alberta Asbestos Abatement Manual*. Government of Alberta, Employment, Immigration and Industry. July 2009.



Table 72: Determining Level of Control Required

	Asbestos Not Present in Return Air Plenum		Asbestos Present in Return Air Plenum
	Less than 20% Asbestos Content in Material	Greater than 20% Asbestos Content in Material	
Immediate Control Required	2 Hs or 3 Ms	1 H or 2 Ms	Control required unless 3 Ls and less than 20% asbestos content in material
Control Required	1 H or 2 Ms	1 M	
No Control Required	1 M or 3 Ls	3 Ls	

* Information from *Alberta Asbestos Abatement Manual*. Government of Alberta, Employment, Immigration and Industry. July 2009.

The table below outlines the results of the above methodology to determine priorities for dealing with ACM and which ACM may be causing a high risk to occupants of the building.

Table 73: ACM Risk of Exposure for Fort Vermillion

Sample	Description	Location	Condition	Result	Risk Exposure (accessible) (condition) (friability)	Control Required
A1	Silver Duct Insulation	#33 east room	Poor	65% (chrysotile)	(M)(H)(M)	Immediate
A11	Transite Board	#23 shop	Poor	25% (chrysotile)	(H)(H)(L)	Immediate
A15	Drywall mud	#60 basement	Good	2.5% (chrysotile)	(L)(L)(H)	Control
A17	Off white w/ brown Floor tile	#60 entry way	Poor	1.7% (chrysotile)	(H)(H)(L)	Immediate
A18	Drywall mud	#60 entry way	Fair	3.1% (chrysotile)	(L)(M)(H)	Control
A20	Drywall mud	#60 Conference room south closet	Poor	2.0% (chrysotile)	(L)(H)(H)	Immediate
A23	Drywall mud	#60 stairwell	Fair	1.5% (chrysotile)	(L)(M)(H)	Control
A35a	Brown w/dark brown Floor tile	#2 basement under stairs	Poor	4.7% (chrysotile)	(L)(H)(H)	Immediate
A36a	Brown w/dark brown Floor tile	#2 basement SE storage room	Poor	5.3% (chrysotile)	(H)(H)(L)	Immediate
A37	Brown w/dark brown Floor tile	#2 basement SE storage room	Poor	5.1% (chrysotile)	(H)(H)(L)	Immediate



Sample	Description	Location	Condition	Result	Risk Exposure (accessible) (condition) (friability)	Control Required
A38	White Pipe insulation	#2 basement NE office	Fair	60% (chrysotile)	(L)(M)(M)	Immediate
A39	White Pipe insulation	#2 basement NE office	Fair	65% (chrysotile)	(L)(M)(M)	Immediate
A40	White Pipe insulation	#2 basement NE office	Fair	65% (chrysotile)	(L)(M)(M)	Immediate
A41	Transite board	#2 basement utility room	Fair	30% (chrysotile)	(L)(M)(L)	Control
A42	Pipe insulation	#2 basement utility room	Fair	55% (chrysotile)	(L)(M)(M)	Immediate
A43	Pipe insulation	#2 basement utility room	Fair	80% (chrysotile)	(L)(M)(M)	Immediate
A70	Brown Vermiculite	Pump house lean-to roof	Poor	0.32% (actinolite)	(L)(H)(H)	Immediate
A71	Brown Vermiculite	Pump house lean-to roof	Poor	0.32% (actinolite)	(L)(H)(H)	Immediate
A72	White Wall board	#37 walls	Good	25% (chrysotile)	(M)(L)(L)	Control
A73	Yellow Insulation board	#37 insulation on dryer north doors	Good	70% (chrysotile)	(M)(H)(L)	Control
A76	White Insulation board	#37 dryer south doors	Good	10% (amosite) & 10% (chrysotile)	(M)(H)(L)	Control

According to the above risk assessment the following items should be dealt with immediately:

#2 Old Administration

- Any ACM pipe insulation which is exposed (pipe wrap damaged or missing)
- ACM containing floor tiles (brown with dark brown)

#23 Workshop and office

- Green transite board in the shop on the mobile cart

#33 Processing and carpenter shop

- The silver duct insulation which is exposed

#60 Duplex house

- ACM containing floor tiles (off-white with brown) in the north unit entry way
- White and green drywall mud which is in poor condition; areas with water damaged drywall

Pump house and lean-to

- Vermiculite insulation in the roof



5.5 CONCLUSIONS

➤ ASBESTOS

- The **silver duct insulation**, in the #33 Processing and Carpenter shop (east room), contains 65% chrysotile asbestos.
 - The insulation on the exterior of the duct which sits on the east wall adjacent a door.
 - Any ACM duct insulation which is exposed or damaged poses a relatively high risk of exposure because it is in poor condition and has a high asbestos content.
- The **plumbing insulation**, in the #2 Administration Office building (basement-NE office and utility room) along the pipes contains from 55 to 80% chrysotile asbestos. Any pipes or tanks which are wrapped with pipe wrap and when pressure is applied, they are firm (not soft, indicating fiberglass insulation) have asbestos.
 - The amount of asbestos insulation around the piping is a rough estimate since there may be pipe insulation in the walls and ceiling which are currently not exposed.
 - Any ACM plumbing insulation which is exposed or damaged may cause a high risk of exposure to occupants.
- The **vermiculite insulation** in the Pump House lean-to contains 0.32% actinolite asbestos.
 - Both the roof of the pump house and the lean-to are assumed to be insulated with ACM vermiculite
 - The vermiculite insulation poses a relatively high risk of exposure because it is highly friable and it is spilling out from the ceiling onto the floor
- Some of the **drywall mud** tested in the Duplex house (white mud-basement, entry way, stairwell and green mud-conference room south closet) contains 1.2 to 3.1% chrysotile asbestos. All areas of the building contain various amounts of drywall on either the walls or ceiling.
 - It is assumed all drywall mud on the main floor, 2nd floor and in the basement contains asbestos.
 - The drywall mud is a moderate hazard as long as it is controlled and is not disturbed. The water damaged drywall mud poses high risk due to the poor condition of the mud.
- There are two different patterns of **floor tiles** that contain up to 5.3% chrysotile asbestos. The tile patterns are: brown with dark brown and off white with brown. There was no asbestos found in the associated mastic or leveling compound.



- The brown with dark brown floor tiles are located #2 Administration Office under the stairs and SE storage room. The off white with brown tiles are located in #60 Duplex house entrance way.
- ACM vinyl floor tiles pose a low risk as long as they are in good condition and the mastic does not contain asbestos.
- Several types of **insulation boards (transite)** were observed in the buildings;
 - Green board in the #23 Workshop and office contains 25% chrysotile asbestos was in poor condition.
 - White insulation board in the #37 Drying shed (south doors) contains 10% chrysotile asbestos and 10% amosite asbestos was in fair condition.
 - The panel boards pose a moderate to high risk of exposure because they are moderately accessible and have high asbestos content.
 - If the boards need to be disturbed by cutting, drilling, etc. they will release asbestos fibres and become a high risk hazard.

➤ **LEAD**

- **White** paint on the exterior of several buildings including the #57 Sewage lift pump house, #60 Duplex house (trim), #60A Duplex garage, #62 Weigh scale building and the Pump house.
- **Yellow** paint in the stairwell of the basement stairway in the north unit of the #60 Duplex house.

➤ **PCBs**

There were fluorescent light fixtures found throughout the entire site. It is understood this site has been retrofitted and there are no fluorescent light ballasts of concern remaining on site.

➤ **MERCURY**

Fluorescent light tubes in the fluorescent light fixtures may contain varying amounts of mercury vapor, even newly purchased tubes/bulbs. There are hundreds of fluorescent tubes and some compact fluorescent bulbs throughout the buildings.

There was one mercury thermostat in the #2 Administration Office, one in the #14 Drying and threshing shed, two in the #23 Workshop and office, two in #33 Processing and carpenter room, two in the #60 Duplex house and one in the Pump house.



➤ **OZONE DEPLETING SUBSTANCES**

Many of the ODS on site have been removed. There are suspect units contained: two A/C units are located in the #2 Administration Office building, An older freezer and a Copeland evaporator are located in #33 Processing and carpenter shop, and two fridges are located in #60 Duplex house.

➤ **RADIOACTIVE MATERIALS**

No radioactive materials were observed on site.

➤ **MISCELLANEOUS CHEMICALS**

Miscellaneous chemicals were observed in #23 Workshop and office, #33 Processing and carpenter shop, #57 Sewage lift pump house and #60 Duplex house. The chemicals were standard chemicals expected to be found in residential houses and working shops.

➤ **MOULD**

Mould and/or water damage which may lead to mould growth was observed in several locations. #2 Administration Office (office one, seven and nine ceilings), #14 Drying and threshing shed (ceiling in east room), #33 Processing and carpenter shop (attic), #60 Duplex house (washroom two north wall, east closet, bedroom two closet ceiling, conference room closet ceiling, upstairs washroom ceiling) and the Pump house (exterior near roof on north side, east room ceiling).

➤ **OTHER**

PESTS

There was several building which has mice. A few of the buildings (#6 Garage and #33 Processing and Carpenter Shop) contained a significant amount of feces from mice, other rodents and birds. The feces can be a source of bacteria and virus harmful to humans. Also, if ACM vermiculite is present in an invested building, the animals can damage the walls and re-distribute the vermiculite into accessible areas.

SPILLS/STAINS

Building #23 Workshop and Office had two sumps and one pit and Building #33 Processing and Carpenter Shop had three pits in the floor which may have contamination.



5.6 RECOMMENDATIONS

➤ ASBESTOS

The table below summarizes the extent and potential impact of the asbestos in the building.

Table 74: Extent and Recommendations of ACM for Fort Vermillion

ACM	Extent	Impact*
No Issues (currently)	Caution	Immediate abatement
#2 Administration Office – to be demolished		
Floor Tiles	Basement (brown with dark brown) Estimated: 44 m ²	The floor tiles were in poor condition. If this building is to be demolished, the floor tile may remain in place and does not need to be removed prior to demolition.
Transite Board	Basement Utility Room Estimated: 170 m ²	The transite board was in good condition. The ACM transite board needs to be abated prior to demolition.
Elbow/pipe Insulation	Entire basement Estimated: 120 m	The insulation was in fair condition with some exposed insulation. The ACM insulation needs to be abated prior to demolition.
#23 Workshop and Office		
Green Board (transite board)	Shop Mobile work bench Estimated: 0.5 m ²	The transite board was in poor condition and has a high asbestos content. It is at high risk and should be abated.
#33 Processing and Carpenter Shop		
Silver Duct Insulation	East room Estimated: 0.3 m x 0.1 m x 2.4 m high	High risk to occupants because the ACM insulation is damaged and exposed, with a high asbestos content. The insulation should be abated.
#37 Drying Shed		
Insulation	Within the dryers Estimated: 3 m ²	There is low risk since the insulation boards are intact, in good condition and within a dryer. All persons using these units should be educated and trained regarding this ACM.
Transite Board	Walls and ceiling Estimated: 60 m ²	The transite board was in good condition. They are low risk as long as they are not disturbed by cutting, hammering, drilling, etc. All persons using this building should be educated and trained regarding this ACM.
#60 Duplex House		
Floor Tiles	Entry way (off-white with brown) Estimated: 3 m ²	The tiles are in poor condition therefore there is a high risk. Any damaged tiles should be replaced.
Drywall Mud	All rooms with drywall Estimated: 792 m ²	The majority of the drywall mud was in good condition however there was some water damaged drywall in poor condition. If the drywall is in good condition and not disturbed there is low risk of exposure. If the drywall mud is in poor condition or if the condition of the drywall deteriorates, or there are renovations, there is a higher risk of exposure and it should be abated.
Pump House and Lean-to		
Vermiculite Insulation	Ceiling Estimated: 60 m ²	This area has a high risk of exposure and should be abated as soon as possible. If the area cannot be abated, the vermiculite should be cleaned up and the compromised ceiling repaired before entry of unprotected personnel.

*NOTE: any ACM materials must only be handled/abated by trained and experienced personnel.



Only ACM in poor condition (i.e. damaged or friable) or that could be disturbed during renovation, maintenance, or other activities, requires abatement.

Asbestos abatement must be carried-out by qualified personnel who are experienced and trained in asbestos removal. Air monitoring and inspections must be completed during the abatement to ensure the safety of the abatement personnel and any unprotected persons in the area.

A management plan needs to be developed to address any ACM remaining on site.

An inventory of all asbestos containing materials should be maintained, and updated whenever any ACM is abated. An inspection of all ACM should be conducted on a regular basis, at least annually, to identify any change in the condition of the ACM.

Maintenance staff and contractors should be made aware, either by labeling of ACM, or by training, of the location of existing ACM, so that is not accidentally disturbed during any renovation or maintenance work.

➤ **LEAD**

There are several areas which contain lead based paint in the buildings. Lead based paint does not pose a risk unless it is disturbed and dust is created allowing for the lead to become airborne. Also, all batteries (emergency lights, alarm systems, miscellaneous) should be recycled and properly disposed of. The table below summarizes the locations and extent of the lead based paint.

Table 75: Extent and Recommendations of Lead Based Paint

Lead Paint	Extent	Impact*
#57 Sewage Lift Pump House		There is little risk to occupants as long as the paint remains in good to fair condition and is not disturbed. Disturbance of lead based paint causes the release of lead in the dust.
Exterior White	Exterior paint on building Total Estimate: 20 m ²	
#60 Duplex House		If the lead based paint is to be disturbed, then the workers must wear appropriate PPE.
Exterior White	Trim Total Estimate: 8 m ² plus 4 windows and doors	
Interior Yellow	Basement stairwell Total Estimate: 6 m ²	
#60A Duplex Garage		When there is disposal of the lead based paint materials the landfill must be notified of the lead content of the paint. The landfill may require abatement or further testing of the lead paint before disposal, if the paint is in poor condition.
Exterior White	Trim Total Estimate: 40 m ²	
#62 Weigh Scale		
Exterior White	Exterior paint on building Total Estimate: 10 m ²	
Pump house and Lean-to		
Exterior White	Exterior paint on building Total Estimate: 60 m ²	

*NOTE: any lead based materials must only be handled/abated by trained and experienced personnel.



➤ **PCBs**

There were no PCBs identified in this report. All fluorescent light and HID ballasts should be checked for PCBs at the time of removal using the most current version of Environment Canada publication: Identification of Lamp Ballasts Containing PCBs. Those that do contain PCBs must be handled, packaged and disposed of by the current regulations and personnel must be equipped with proper personal protection equipment.

➤ **MERCURY**

Fluorescent light tubes in the fluorescent light fixtures may contain varying amounts of mercury vapor, even newly purchased tubes/bulbs. There are hundreds of fluorescent tubes and some compact fluorescent bulbs throughout the buildings. All fluorescent lights should be stored to protect from breakage and recycled accordingly.

There were mercury thermostats at:

- #2 Administration Office
- #14 Drying and Threshing Room
- #23 Workshop and Office
- #33 Processing and Carpenter shop
- #60 Duplex House

As long as the mercury containing materials are in good condition and not damaged and mercury remains enclosed (not leaking) there is low risk to occupants. Any mercury items should be recycled and disposed according to current regulations.

A best practice would be to replace the mercury containing thermostats with non-mercury containing units. These newer units are also typically more energy efficient than older mercury-containing units.

➤ **OZONE DEPLETING SUBSTANCES**

Many of the ODS in the building have been removed. The table below outlines the remaining ODS of concern.

- #2 Administration Office – two air conditioners
- #33 Processing and Carpenter shop – freezer and chiller
- #60 Duplex House – two fridges

The ODS units should be recycled/recovered by a qualified and experienced worker according to Ozone Depleting Substances and Halocarbons Regulations.



➤ **RADIOACTIVE MATERIALS**

No radioactive materials were observed on site.

➤ **MOULD**

Mould or water damage which may lead to mould growth was observed at the following locations:

#2 Administration Office
#14 Drying and Threshing Room
#33 Processing and Carpenter shop
#60 Duplex House
Pump House

It is recommended that the source of the water leakage be determined and repaired, and any water damaged materials which are potential sources of mould growth, be abated.

➤ **OTHER**

PESTS

#6 Garage and Storage had a significant amount of bird and rodent feces and #33 Processing and Carpenter Shop had a significant amount of rodent feces in the attic area.

A qualified pest control contractor should be brought in to eliminate the problem. If this involves entering attic spaces, or disturbing ACM vermiculite insulation, the contractor will need to ensure that the workers are adequately protected from exposure to airborne fibres. The feces should be cleaned up by experienced and trained personnel.

A qualified pest control contractor should be brought in to eliminate the problem. If this involves entering attic spaces, or disturbing ACM, the contractor will need to ensure that the workers are adequately protected from exposure to airborne fibres. The feces should be cleaned up by experienced and trained personnel.

SPILLS/STAINS

Building #23 Workshop and Office had two sumps and one pit and Building #33 Processing and Carpenter Shop had three pits in the floor which may have contamination.

Phase I Environmental Site Assessments should be completed to address this stain and other areas of potential contamination.



If any other suspect materials become exposed during demolition or maintenance activities, the suspect materials should be tested.

Procedures for hazardous materials identified in this report should be developed and communicated to anyone who may come in contact with these materials. Also, anyone who may come in contact with hazardous materials should be informed on how to identify where the hazards may be present and how to proceed if they observe some suspect materials.

A management and monitoring plan should be developed and implemented to address the hazardous materials identified in this report and any possible future hazardous materials which may be encountered.



6.0 LIMITATIONS

Lacombe

The attic space in the garage of building #2a could not be accessed. It is assumed to contain wood chip insulation as seen in the corners of the roof and from the spillage onto the floor. The cage storage in the attic of #21 could not be accessed. The majority of the pipes were not visible through the access panels and the volume of pipe insulation in building #21 could not be estimated. The ACM floor tile in #21 may be underestimated if it is also present under the laminate flooring. The laminate flooring could not be removed to check underneath without substantial damage. The front porch on #41 Beef Unit Residence could not be assessed because it was completely full of items from the floor to ceiling.

Beaverlodge

#14 Soil Research Building contained suspect ACM transite board and for this reason, this board was not drilled/broken to confirm ceiling insulation. The steel housing of the fume hood chimney could not be penetrated in #14; there may be ACM insulation in this area.

Fort Vermillion

The wall insulation in building #14 could not be verified because the walls were suspected to be ACM and therefore were not drilled through. Gaskets are known to contain asbestos and suspect gaskets were observed onsite. The gaskets were not sampled because they were in use and the gasket would have to be destroyed to be sampled. The attic in the west portion of the pump house could not be accessed so it is assumed it contains vermiculite insulation the same as the lean-to.

The subject sites were functioning facilities with areas of the subject buildings which could not be access.

All gaskets were in use and sampling would require dismantling of the subject equipment. Therefore there were no gaskets were sampled.

The diagrams provided and used in this report did not always correlate with the posted room numbers at the time of the sampling. Every effort was made to correlate room numbers, however there may be discrepancies or/and omissions. If there are discrepancies, the location should be verified on site.

This report is for the exclusive use of the client. Any third party use of this report and subsequent reliance or decisions based on this report is made at the sole risk of the third party. Ballast Environmental Consulting Ltd. has no obligation to any third party and will accept no responsibility for any damages suffered by third party use.



This assessment and subsequent conclusions and recommendations have been conducted with a reasonable level of care and skill and in accordance with current environmental assessment standards and practices for this geographic location at the time of the assessment.

This assessment is limited to the scope as previously defined under 1.2 Scope of Work. The data and findings are limited to the date of investigation. This assessment is not and should not be considered an opinion concerning past or present compliance of any past or present owner with any municipal, provincial or federal regulations. No warrantee or guarantee is expressed or implied.

Should you have any questions or comments, feel free to contact the undersigned at info@ballastenvironmental.com or 403.452.3110.

Sincerely,
Ballast Environmental Consulting Ltd.



for
Kassandra Cropley



for
Nicole Brooks, B.Sc.



Elvie Reinson, P.Biol., RPBio, EP



Marshall Denhoff, CIH, ROH

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result	
2: Residence	Bsmt	NW Area	unfinished	open to wood frame	drywall	concrete	-	open	beige	bare	-	-	-	-	-	-	-	-	
2: Residence	Bsmt	SW Area	unfinished	open to wood frame	drywall	concrete	-	open	beige	bare	-	mortar	A35	chimney	-	-	-	negative	
2: Residence	Bsmt	SE Area	unfinished	open to wood frame	drywall	concrete	-	open	beige	bare	-	-	-	-	-	-	-	-	
2: Residence	Bsmt	NE Area	unfinished	open to wood frame	drywall & wood panel	concrete	misc. chemicals	open	white & green	bare	-	-	-	-	white	P19	interior	negative	
												-	-	-	green	P18	stairwell	negative	
												stipple wire	A33	shoe box	-	-	-	negative	
												-	A34	frame	-	-	-	negative	
2: Residence	Main	Foyer	foyer	stipple	wood paneling & drywall	linoleum	-	white	off-white	multi gray	-	plaster	A43	walls	-	-	-	negative	
2: Residence	Main	Porch	porch	wood paneling	wood paneling	linoleum	-	white	white	brown	-	floor covering	A60	floor	-	-	-	negative	
2: Residence	Main	Dining Room	dining room	stipple	drywall	laminare	stipple different from rest of house	white	white	hardwood	-	stipple	A38	ceiling	-	-	-	negative	
2: Residence	Main	Kitchen	kitchen	stipple	drywall	laminare	stipple different from rest of house	white	white	hardwood	-	mortar	A39	chimney	-	-	-	negative	
												stipple	A61	ceiling	-	-	-	negative	
												stipple	A37	ceiling	-	-	-	negative	
2: Residence	Main	Living Room	living room	stipple	drywall	laminare	-	white	pink	hardwood	-	-	-	-	-	-	-	-	
2: Residence	Main	Hall	hall	stipple	drywall	laminare	-	white	beige	hardwood	-	drywall mud	A40	in closet	-	-	-	positive	
2: Residence	Main	Washroom	washroom	drywall	drywall	plywood	unfinished	white	white	bare	-	drywall mud	A42	wall	-	-	-	negative	
2: Residence	Main	Bedroom #1	bedroom	stipple	drywall	laminare	-	white	dark gray	hardwood	-	-	-	-	-	-	-	-	
2: Residence	Main	Bedroom #2	bedroom	stipple	drywall	laminare	-	white	green	hardwood	-	drywall mud	A41	closet	-	-	-	negative	
2: Residence	Attic	Attic	attic	wool baton insulation over vermiculite; mouse feces								vermiculite insulation	A63	attic	-	-	-	-	positive
												vermiculite insulation	A90	attic	-	-	-	-	positive
												vermiculite insulation	A91	attic	-	-	-	-	positive
2: Residence	Exterior	-	exterior	asphalt shingles	wood siding	-	-	gray	white & dark green trim	-	-	-	-	-	white	P20	exterior	negative	
												-	-	-	dark green	P13	trim	positive	
												tar paper	A44	south edge of house	-	-	-	negative	
												caulking	A36	window	-	-	-	negative	
												siding	A28	exterior walls	-	-	-	negative	
2A: Garage	Main	-	single garage	wood slats	wood slats	concrete	-	light green interior	exterior: white, interior: light green	bare	-	caulking	A46	exterior window	-	-	-	negative	

* no access ** limited visibility of area ***Sample not analyzed

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
10: Machine Pole Barn	Main	-	storage	wood	wood frame, metal siding	dirt floor	misc. chemicals and hydrocarbon staining	open frame	white & red, green exterior	n/a	-	-	-	-	red	P30	interior	negative
												-	-	-	white	P31	exterior	positive
21: Administration	Bsmt	4	office	tile	plaster	tile	-	white	white	green/black	2x4	9x9	A96	green/black floor tile	-	-	-	positive
21: Administration	Bsmt	5	office	tile	plaster	laminated	-	white	white	hardwood	2x4	-	-	-	-	-	-	-
21: Administration	Bsmt	6	office	tile	concrete	tile	-	white	white	green/black	2x4	9x9	A94	green/black floor tile	-	-	-	positive
												9x9	A95	green/black floor tile	-	-	-	positive
21: Administration	Bsmt	7	office	tile	plaster	tile	-	white	yellow	hardwood	2x4	-	-	-	-	-	-	-
21: Administration	Bsmt	8	office	tile	plaster	tile	-	white	white	green/black	2x4	-	-	-	-	-	-	-
21: Administration	Bsmt	9	office	tile	plaster	laminated	-	white	beige	hardwood	2x4	-	-	-	-	-	-	-
21: Administration	Bsmt	13*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21: Administration	Bsmt	14	electrical room	metal foil with fibre glass	plaster	concrete	-	-	brown	bare	-	-	-	-	brown	P5	wall	negative
												plaster	A22	wall	-	-	-	negative
21: Administration	Bsmt	16	washroom	tile	ceramic tile	tile	-	white	white	black & white	2x4	-	-	-	-	-	-	-
21: Administration	Bsmt	22	offices	tile	plaster	linoleum	-	white	off-white	peach marble (new)	2x4	-	-	-	-	-	-	-
21: Administration	Bsmt	26*	office	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21: Administration	Bsmt	27	office	tile	plaster	laminated	-	white	-	hardwood	2x4	-	-	-	-	-	-	-
21: Administration	Bsmt	29	office	tile	plaster	linoleum	-	white	white	brown streak	2x4	-	-	-	-	-	-	-
21: Administration	Bsmt	30	office	tile	plaster	laminated	-	white	-	hardwood	2x4	-	-	-	-	-	-	-
21: Administration	Bsmt	31*	office	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21: Administration	Bsmt	125*	office	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* no access ** limited visibility of area ***Sample not analyzed

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
21: Administration	Bsmt	Corridor 3	corridor	stipple	plaster	rock/ concrete	emergency light & hose cabinet	white	beige	rocks	-	stipple	A18	ceiling	-	-	-	negative
												pipe elbow insulation	A65	pipe elbow	-	-	-	positive
												pipe insulation	A66	pipe	-	-	-	positive
												pipe insulation	A67	pipe	-	-	-	positive
21: Administration	Bsmt	Corridor 4	corridor	stipple	plaster	rock/ concrete	emergency light, possible mercury switch & hose cabinet	white	beige	rocks	-	pipe insulation	A68	pipe	-	-	-	positive
												stipple	A20	ceiling	-	-	-	negative
												stipple	A23	ceiling	-	-	-	negative
21: Administration	Bsmt	Office	office	tile	plaster	linoleum	-	white	-	peach marble (new)	2x4	-	-	-	-	-	-	-
21: Administration	Bsmt	Printer Room	-	-	plaster	-	-	-	white	-	-	plaster	A19	wall	-	-	-	negative
21: Administration	Bsmt	Computer Room	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21: Administration	Bsmt	Boiler Room	boiler room	metal foil with fibre glass	plaster	concrete	mercury switch	-	white	-	-	plaster	A21	wall	-	-	-	negative
21: Administration	Main	Foyer	foyer	stipple	plaster & wood panelling	rock/ concrete	emergency light	white	white	rocks	-	-	-	-	-	-	-	-
21: Administration	Main	Vault	vault	plaster	plaster	concrete	-	white	white	gray	-	-	-	-	-	-	-	-
21: Administration	Main	102	office	tile	plaster	linoleum	-	white	-	tree bark	2x4	-	-	-	-	-	-	-
21: Administration	Main	103	office	tile	plaster	linoleum	-	white	pink	brown	2x4	brown sheet linoleum	A97	floor	-	-	-	negative
21: Administration	Main	104	office	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21: Administration	Main	105	office	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21: Administration	Main	106	office	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21: Administration	Main	109	office	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21: Administration	Main	110	office	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21: Administration	Main	111	office	tile	plaster	linoleum	-	white	yellow	gray lines	2x4	-	-	-	-	-	-	-
21: Administration	Main	112	washroom	tile	ceramic tile	tile	-	white	-	black & white	2x4	-	-	-	-	-	-	-
21: Administration	Main	113	washroom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* no access ** limited visibility of area ***Sample not analyzed

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result	
21: Administration	Main	113- Janitors Closet	closet	tile	plaster	concrete	misc. cleaners	white	white	black & white	1x1	-	-	-	green	P2	wall	negative	
												ceiling tile	A10	ceiling	-	-	-	negative	
												plaster	A11	wall	-	-	-	negative	
21: Administration	Main	Reception	reception	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21: Administration	Main	Post Office	post office	tile	plaster	linoleum	-	white	white	brown (new)	2x4	brown sheet linoleum	A98	floor	-	-	-	-	negative
21: Administration	Main	116	office	tile	plaster	linoleum	-	white	-	blue marble (new)	2x4	-	-	-	white on dark green	P3	window sills	negative	
21: Administration	Main	117	office	tile	plaster	linoleum	-	white	-	blue marble (new)	2x4	-	-	-	-	-	-	-	
21: Administration	Main	118	-	tile	plaster	linoleum	water damage & mercury switch	white	-	blue marble (new)	2x4	-	-	-	purple on white	P4	wall	negative	
												plaster	A15	ceiling	-	-	-	negative	
21: Administration	Main	120	office	tile	plaster	linoleum	water damage	white	-	tree bark	2x4	tree bark linoleum	A12	floor	-	-	-	-	negative
21: Administration	Main	121	office	tile	plaster	linoleum	-	white	-	blue/gray lines	2x4	-	-	-	-	-	-	-	
21: Administration	Main	122	office	tile	plaster	linoleum	-	white	yellow	blue/gray lines	2x4	-	-	-	-	-	-	-	
21: Administration	Main	123	office	tile	plaster	linoleum	-	white	white	blue/gray lines	2x4	blue/gray lines linoleum	A13	floor	-	-	-	-	negative
21: Administration	Main	124	office	tile	plaster	linoleum	-	white	white	blue/gray lines	2x4	-	-	-	-	-	-	-	
21: Administration	Main	125	office	textured	plaster	tile	-	white	white	multi	-	-	-	-	-	-	-	-	
21: Administration	Main	N Stairwell	stairwell	drywall	plaster	rock/ concrete	2 emergency lights	white	white	rocks	-	-	-	-	white	A9	wall	negative	
												plaster	A9	wall	-	-	-	negative	
21: Administration	Main	W Stairwell	stairwell	drywall	plaster	rock/ concrete	-	white	white	rocks	-	-	-	-	-	-	-	-	
21: Administration	Main	Corridor 1	corridor	stipple	plaster	rock/ concrete	fire hose cabinet	white	white	rocks	-	stipple	A16	ceiling	-	-	-	-	negative
												plaster	A14	attic access	-	-	-	-	negative
21: Administration	Main	Corridor 2	corridor	stipple	plaster	rock/ concrete	emergency light & hose cabinet	white	white	rocks	-	stipple	A17	ceiling	-	-	-	-	negative
21: Administration	Attic	Attic	attic	metal (new)	metal & brick	old roof (tar)	mercury switch; water damage	white	white	black	-	duct putty	A1	duct	-	-	-	-	negative
												mortar	A2	south	-	-	-	-	negative
												mortar	A3	north	-	-	-	-	negative
												roof panel	A4	south	-	-	-	-	negative
												roof panel	A5	east	-	-	-	-	negative
												roof panel	A6	north	-	-	-	-	negative
												roof tar	A7	north	-	-	-	-	negative
												roof tar	A8	east	-	-	-	-	negative
21: Administration	Exterior	-	exterior	-	brick	-	-	-	white & brick	-	-	-	-	-	white	P11	window frame	positive	
												mortar	A30	exterior walls	-	-	-	-	negative
												caulking	A31	window	-	-	-	-	negative
												caulking	A32	window	-	-	-	-	negative
38: Pump House	-	-	pump house	asphalt roof	wood	concrete	no insulation	white	interior white	bare	-	-	-	-	white	P24	exterior	positive	
												tar paper	A71	walls	-	-	-	-	negative

* no access ** limited visibility of area ***Sample not analyzed

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
38A: Beef Unit Garage	Main	1	-	wood	wood	concrete	mercury thermostat	white	white	gray	-	-	-	-	white	P23	wall	negative
												-	-	-	gray	P22	floor	negative
												floor tile	A70	behind furnace	-	-	-	positive
												mortar	A62	chimney	-	-	-	negative
38A: Beef Unit Garage	Main	2	-	wood	plywood	concrete	-	white	white	gray	-	-	-	-	-	-	-	-
38A: Beef Unit Garage	Main	3	-	wood	wood	plywood	-	white	white	gray	-	-	-	-	-	-	-	-
38A: Beef Unit Garage	Main	4	-	wood	wood	concrete	-	white	white	bare	-	-	-	-	-	-	-	-
38A: Beef Unit Garage	Attic	-	attic	wood	wood	-	wool over vermiculite insulation	-	-	-	-	vermiculite insulation	A93	attic	-	-	-	positive
												vermiculite insulation	A69	attic	-	-	-	positive
												vermiculite insulation	A92	attic	-	-	-	positive
38A: Beef Unit Garage	Exterior	Exterior	exterior	asphalt shingles	wood	-	-	gray	white	-	-	-	-	-	white	P21	exterior	positive
												-	-	-	white	P16	exterior	positive
												caulking	A73	window	-	-	-	negative
40: Beef Unit Test Barn	Main	Barn	barn/garage	plywood	plywood	concrete	-	white	brown & white	bare	-	-	-	brown	P25	interior	negative	
40: Beef Unit Test Barn	-	Corrals	corrals	wood & metal	wood & metal	-	-	bare	white & bare	-	-	-	-	white	P26	interior	negative	
40: Beef Unit Test Barn	Attic	-	attic	wood	tin	-	-	-	-	-	-	-	-	-	-	-	-	-
40: Beef Unit Test Barn	Exterior	-	exterior	eaves	wood soffits, metal siding	-	-	gray	white trim	-	-	caulking	A72	window	-	-	-	positive
41: Beef Unit Residence	Bsmt	Cold Room	cold room	wood	wood	concrete	-	bare	bare	gray	-	-	-	-	-	-	-	-
41: Beef Unit Residence	Bsmt	Utility Room	utility room	unfinished	concrete	concrete	-	n/a	bare	gray	-	-	-	-	gray	P15	floor	negative
												mortar	A49	chimney	-	-	-	negative
41: Beef Unit Residence	Bsmt	Foyer	foyer	tile	wood paneling	concrete	radioactive fire detector	white	brown	gray	1x1	ceiling tile	A50	ceiling	-	-	-	negative
												ceiling tile	A51	ceiling	-	-	-	negative
												ceiling tile	A52	ceiling	-	-	-	negative
												ceiling tile	A56	ceiling	-	-	-	negative
41: Beef Unit Residence	Bsmt	Basement Bedroom	bedroom	tile	wood paneling	carpet	-	white	dark purple	gray	1x1	-	-	-	-	-	-	-
41: Beef Unit Residence	Bsmt	Basement Living Room	living room	tile	wood paneling	carpet	-	light purple	dark & light purple	gray	1x2	ceiling tile	A57	ceiling	-	-	-	negative
41: Beef Unit Residence	Main	Porch	porch	tile	-	-	-	-	-	-	-	ceiling tile	A59	ceiling	-	-	-	negative
41: Beef Unit Residence	Main	Hallway	hallway	stipple	drywall	laminare	radioactive fire detector	white	dark brown	hardwood	-	-	-	-	-	-	-	-
41: Beef Unit Residence	Main	Stairwell	stairwell	stipple	drywall	laminare & linoleum	-	white	brown	hardwood	-	-	-	-	-	-	-	-
41: Beef Unit Residence	Main	Kitchen	kitchen	stipple	drywall	laminare over tile	-	white	brown	hardwood & tile: pink & beige	-	pink floor tile	A47	under laminare	-	-	-	negative
												beige floor tile	A48	under laminare	-	-	-	negative
41: Beef Unit Residence	Main	Dining Room	dining room	stipple	drywall	laminare	-	white	brown	hardwood	-	-	-	-	-	-	-	-
41: Beef Unit Residence	Main	Living Room	living room	stipple	drywall	laminare	-	white	brown	hardwood	-	-	-	-	-	-	-	-
41: Beef Unit Residence	Main	Main Bedroom	bedroom	stipple	drywall	laminare	-	white	yellow	hardwood	-	drywall mud	A53	behind door	-	-	-	negative

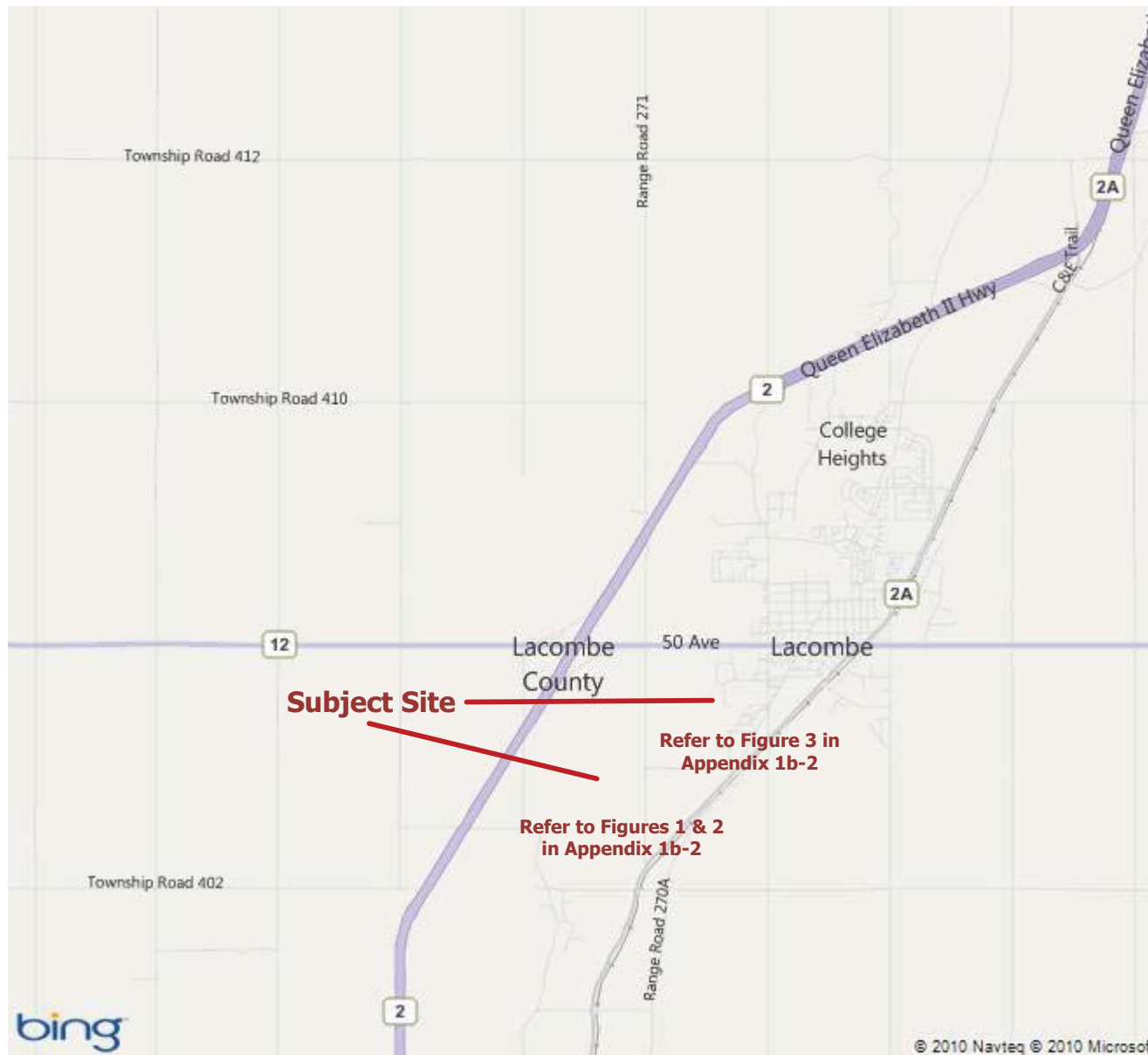
* no access ** limited visibility of area ***Sample not analyzed

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
41: Beef Unit Residence	Main	Bedroom #2	bedroom	stipple	drywall	laminat	-	white	yellow	hardwood	-	drywall mud	A55	behind door	-	-	-	negative
41: Beef Unit Residence	Main	Washroom	washroom	stipple	drywall & ceramic tile	linoleum	-	white	brown	blue & white	-	drywall mud	A54	closet	-	-	-	negative
41: Beef Unit Residence	Attic	-	attic	-	-	-	-	-	-	-	-	vermiculite insulation	A88	attic	-	-	-	positive
												vermiculite insulation	A89	attic	-	-	-	positive
												vermiculite insulation	A58	attic	-	-	-	positive
41: Beef Unit Residence	Exterior	-	exterior	asphalt shingles	siding	-	-	gray	white	-	-	-	-	-	-	-	-	-
41A: Shed	main	-	shed	wood slat	plywood & wood slat	wood slat	misc. chemicals	gray	white	bare	-	-	-	-	white	P17	exterior	positive
42A: Beef Unit Bull Barn	Main	-	barn	wood	corrugated tin	n/a	creosote poles	green	bare	-	-	-	-	-	-	-	-	-
42B: Dry Cow FeedLot	Main	-	feedlot	open frame-wood, asphalt shingles	wood with metal siding	concrete	creosote wood & old wiring	-	bare, green & white trim	bare	-	-	-	-	dark green	P27	trim/doors	negative
42F,H,I: Beef Unit Hay Sheds	Main	-	sheds	wood	wood poles	n/a	-	-	green	-	-	-	-	-	-	-	-	-
42J: Cow and Calf Shelter	Main	-	livestock shelter	wood & metal	wood & metal	n/a	-	-	-	-	-	-	-	-	-	-	-	-
42L: Storage	Main	-	storage	wood	wood	n/a	creosote poles	-	-	-	-	-	-	-	-	-	-	-
52: Machine & Vehicle Repair	Exterior	-	exterior	metal	metal	concrete	-	dark	white	bare	-	glazing	A87	window	-	-	-	positive
52: Machine & Vehicle Repair	Main	*Office	office	*	*	tile	*	*	*	brown streak	*	floor tile	A83	floor	-	-	-	positive
52: Machine & Vehicle Repair	Main	Washroom	washroom	tile	panels	ceramic tile	-	white	white	dark gray/brown	-	-	-	-	-	-	-	-
52: Machine & Vehicle Repair	Main	Stairwell	stairwell	-	-	rubber over wood	-	-	-	gray	-	-	-	-	-	-	-	-
52: Machine & Vehicle Repair	Main	East Bay	bay	open to framing	wood & plywood	concrete	2 mercury thermostats	open	white & gray	bare	-	insulation	A85	north wall	-	-	-	negative
												welding screen	A84	west part of bay	-	-	-	negative
												-	-	-	-	-	-	-
52: Machine & Vehicle Repair	Main	Tool Room	tool storage	open to framing	plywood	concrete	-	open	white	bare	-	-	-	yellow	P32	shelves	negative	
52: Machine & Vehicle Repair	Main	Furnace Room	furnace room	open to framing	wood	concrete	-	open	white & bare	bare	-	-	-	-	-	-	-	
52: Machine & Vehicle Repair	Main	Under Stairs	storage	stairs	cinderblock/wood	concrete	-	bare	bare	bare	-	-	-	-	-	-	-	
52: Machine & Vehicle Repair	Main	*Store	store	*	*	*	*	*	*	*	*	-	-	-	-	-	-	
52: Machine & Vehicle Repair	Main	West Bay	bay	wood frame	plywood	concrete	-	-	white	bare	-	insulation	A86	ceiling	-	-	-	negative
52: Machine & Vehicle Repair	Upper	Kitchen	kitchen	stipple	drywall	linoleum	mercury thermostat, R12 fridge	white	green	brown streak	-	linoleum	A82	floor	-	-	-	negative
												stipple	A80	ceiling	-	-	-	negative
												stipple	A81	ceiling	-	-	-	negative
												drywall mud	A77	wall	-	-	-	negative
												drywall mud	A78	wall	-	-	-	negative
52: Machine & Vehicle Repair	Upper	Office	office	*	*	*	*	*	*	*	*	-	-	-	-	-	-	

* no access ** limited visibility of area ***Sample not analyzed

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
52: Machine & Vehicle Repair	Upper	North Office	office	stipple	drywall	linoleum	-	white	green	brown streak	-	drywall mud	A76	wall	-	-	-	negative
												stipple	A79	ceiling	-	-	-	negative
53: Header House	Main	Corridor 5	corridor	metal	wood & cinderblock	rock/ concrete	mercury switch & emergency lights	white	yellow	gray	-	-	-	-	yellow over green	P10	wall	negative
53: Header House	Main	Boiler Room	boiler room	panel board	panel board	concrete	misc. chemicals	pink & brown	pink & brown	gray	-	-	-	-	pink/brown	A24	wall	***
												-	-	-	brown	A25	wall	***
												pink/brown panel board	A24	wall	-	-	-	positive
53: Header House	Main	3E	wood working	metal	wood paneling	tile	possible ACM cabinet	white	white	brown streak	-	brown streak floor tile	A27	floor	-	-	-	positive
53: Header House	Main	2E	AV equipment room	metal	wood & cinderblock	tile	-	white	pink	brown streak	-	-	-	-	pink over yellow	P8	wall	negative
												sink insulation	A64	underside of sink	-	-	-	positive
												brown streak floor tile	A26	floor	-	-	-	positive
53: Header House	Main	Wood Working Shop	shop	metal	wood	concrete	misc. chemicals	white	white	gray	-	-	-	-	-	-	-	-
53: Header House	Main	Storage Room	storage	metal	wood panels	concrete	-	white	-	gray	-	-	-	-	-	-	-	-
53: Header House	Main	Gym	gym	metal	wood	carpet	-	white	white	gray	-	-	-	-	white	P9	-	negative
53: Header House	Exterior	-	exterior	metal	metal	-	-	-	white	-	-	-	-	-	-	-	-	-
54: Animal Hospital	Main	Corral	open area	open wood frame	metal & wood	concrete	creosote wood & old wiring	open	bare	bare	-	-	-	-	-	-	-	-
54: Animal Hospital	Main	Corral	closed area	plywood	metal & wood	concrete & wood	-	white	white & bare	bare	-	-	-	-	-	-	-	-
54: Animal Hospital	Main	Hospital	hospital area	wood	wood	concrete	mercury thermostat	white	white	bare	-	vermiculite insulation	A75	wall	-	-	-	positive
												vermiculite insulation	A45	walls/ceiling	-	-	-	positive
												vermiculite insulation	A29	walls-exposed	-	-	-	positive
54: Animal Hospital	Main	Entrance	office	wood	wood	tile	-	white	white	brown streak	-	floor tile	A74	floor	-	-	interior	positive
54: Animal Hospital	Main	Chiller	chiller	plastic	plastic	concrete	-	white	white	bare	-	-	-	-	-	-	-	-
54: Animal Hospital	Attic	Attic	attic	wood	wood	wood	animal feces	-	-	-	-	-	-	-	-	-	-	-
54: Animal Hospital	Exterior	-	exterior	metal	wood & metal	concrete	ODS: R502	-	white trim	-	-	-	-	-	white	P28	doors/trim	negative

* no access ** limited visibility of area ***Sample not analyzed



Scale: NTS

VICINITY MAP



Date: Jan 17, 2011 Drawn by: Bing

Edited: Feb 16, 2011 Edited by: ER

Project Name: Hazardous Materials Assessment

Project Location: Lacombe Research Centre

Project No.: 11166

**Appendix
1b-1**



Figure 1



Figure 2



Figure 3

*Hay Sheds 42F, 42H & 42I not seen on diagrams but were assessed

Building Assessed Building Number #
Scale: NTS

BUILDINGS ASSESSED



Date: Jan 17, 2011

Drawn by: KC

Project Name: Hazardous Materials Assessment

Project No.: 11166

**Appendix
1b-2**

Edited: Feb 16, 2011

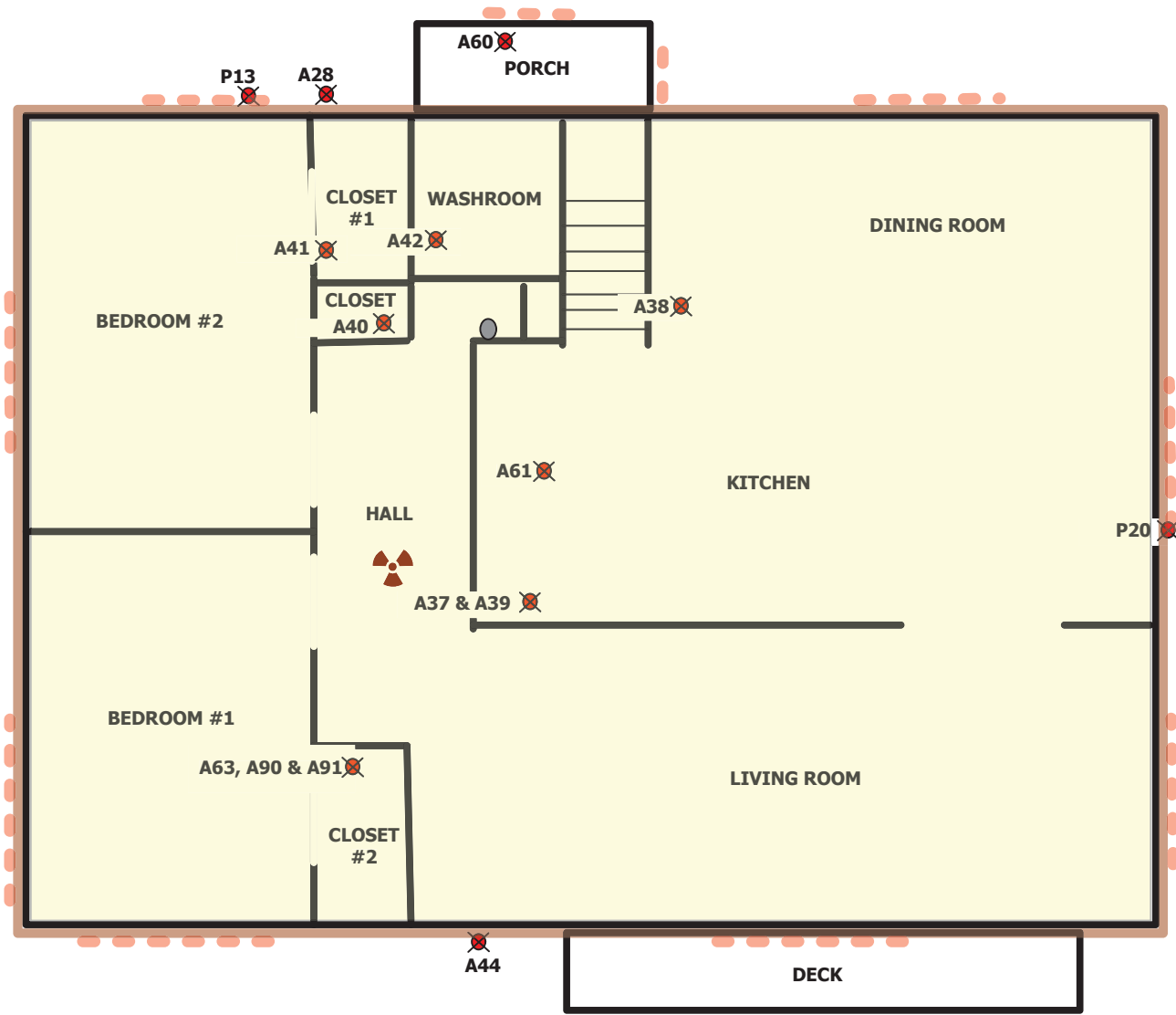
Edited by: ER

Project Location: Lacombe Research Centre



Sample ID
 A = asbestos sample
 P = paint sample

- Sampling Location
- Floor Covering containing Asbestos
- Drywall Mud/Stipple/Wall covering containing Asbestos
- Wall and/or Attic Insulation containing Asbestos
- Pipe/tank insulation containing Asbestos
- Ozone Depleting Substance (ODS)
- ACM Sink Coating
- Radioactive Items
- Mercury
- Lead paint
- Window caulking containing Asbestos



**SITE SAMPLING DIAGRAM: #2 RESIDENCE
Main Floor**














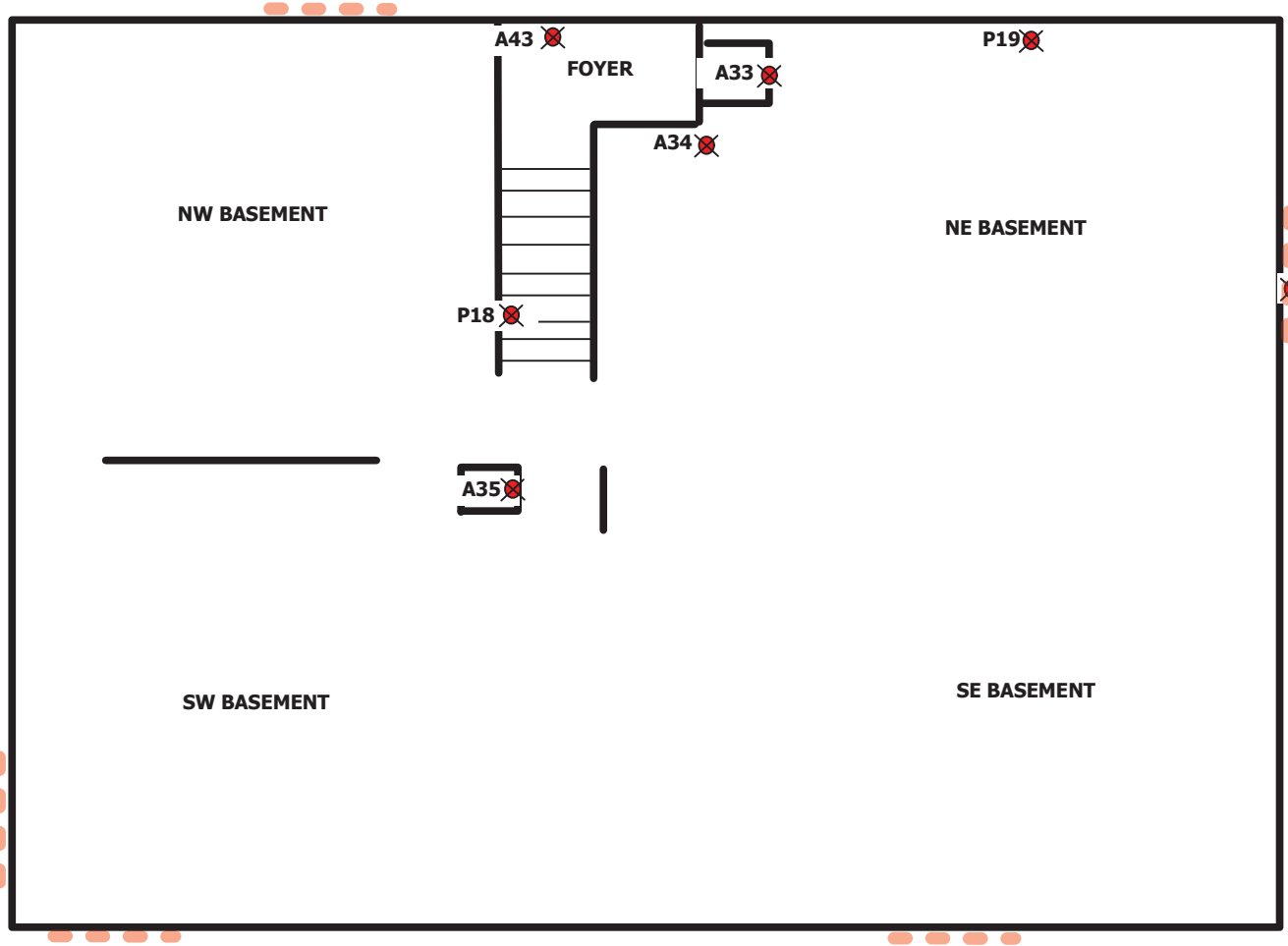
Date: Jan 17, 2011 Drawn by: KC
 Edited: Feb 16, 2011 Edited by: ER

Project Name: Hazardous Materials Assessment Project No.: 11166
 Project Location: Lacombe Research Centre

**Appendix
1b-3**



- Sample ID
 A = asbestos sample
 P = paint sample
-  Sampling Location
 -  Floor Covering containing Asbestos
 -  Drywall Mud/Stipple/ Wall covering containing Asbestos
 -  Wall and/or Attic Insulation containing Asbestos
 -  Pipe/tank insulation containing Asbestos
 -  Ozone Depleting Substance (ODS)
 -  ACM Sink Coating
 -  Radioactive Items
 -  Mercury
 -  Lead paint
 -  Window caulking containing Asbestos



Scale: NTS

**SITE SAMPLING DIAGRAM: #2 RESIDENCE
 Basement**



Date: Jan 17, 2011
 Edited: Feb 16, 2011












Drawn by: KC
 Edited by: ER

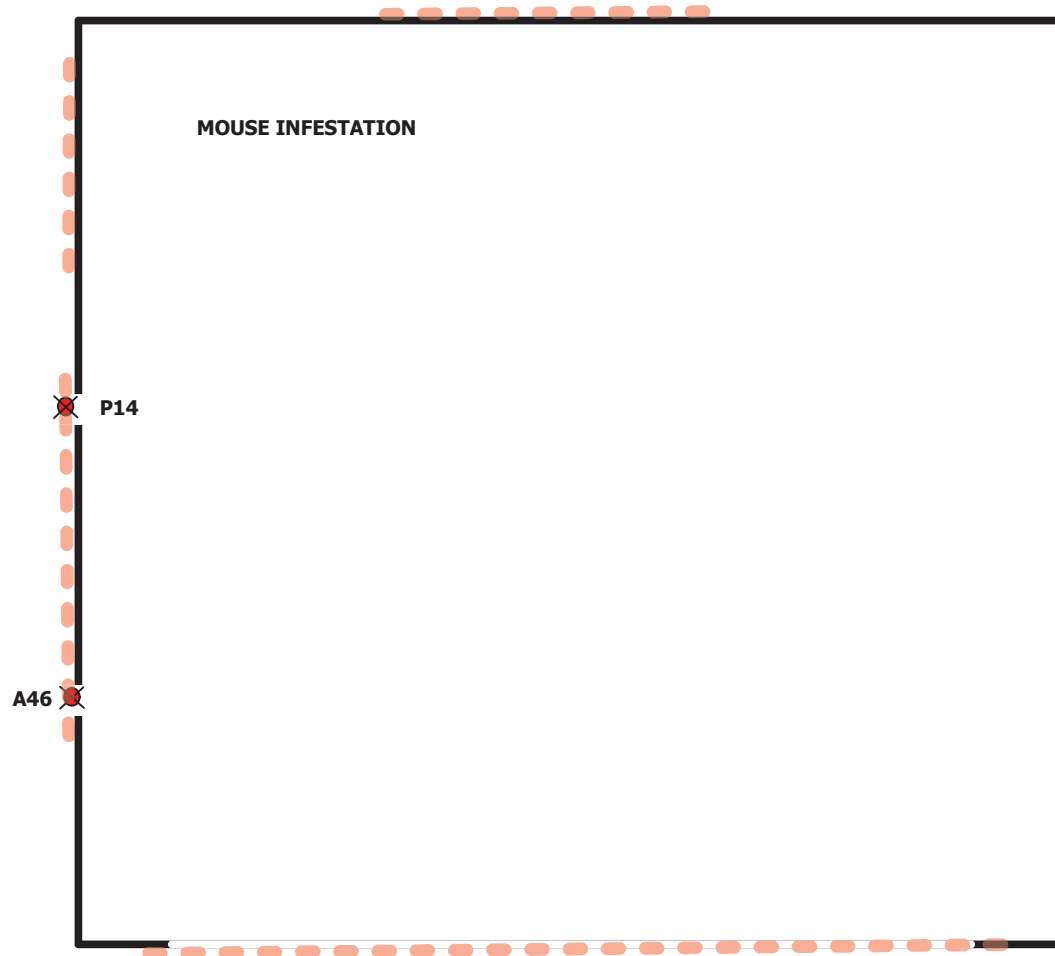
Project Name: Hazardous Materials Assessment
 Project Location: Lacombe Research Centre

Project No.: 11166

**Appendix
 1b-4**



- Sample ID
 A = asbestos sample
 P = paint sample
-  Sampling Location
 -  Floor Covering containing Asbestos
 -  Drywall Mud/Stipple/Wall covering containing Asbestos
 -  Wall and/or Attic Insulation containing Asbestos
 -  Pipe/tank insulation containing Asbestos
 -  Ozone Depleting Substance (ODS)
 -  ACM Sink Coating
 -  Radioactive Items
 -  Mercury
 -  Lead paint
 -  Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #2A GARAGE



Date: Jan 17, 2011

Drawn by: KC

Project Name: Hazardous Materials Assessment

Project No.: 11166

Edited: Mar 8, 2011












Edited by: KC

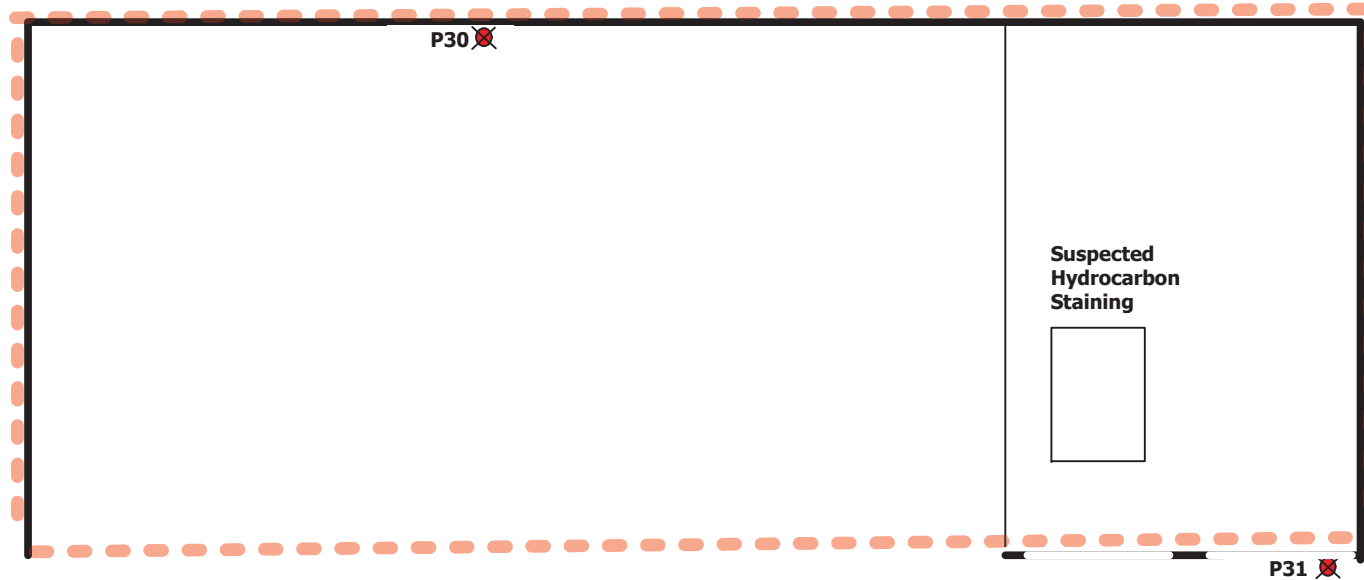
Project Location: Lacombe Research Centre

**Appendix
 1b-5**



Sample ID
 A = asbestos sample
 P = paint sample

-  Sampling Location
-  Floor Covering containing Asbestos
-  Drywall Mud/Stipple/Wall covering containing Asbestos
-  Wall and/or Attic Insulation containing Asbestos
-  Pipe/tank insulation containing Asbestos
-  Ozone Depleting Substance (ODS)
-  ACM Sink Coating
-  Radioactive Items
-  Mercury
-  Lead paint
-  Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #10 MACHINE POLE BARN Main



Date: Jan 17, 2011

Drawn by: KC

Project Name: Hazardous Materials Assessment

Project No.: 11166

**Appendix
1b-6**

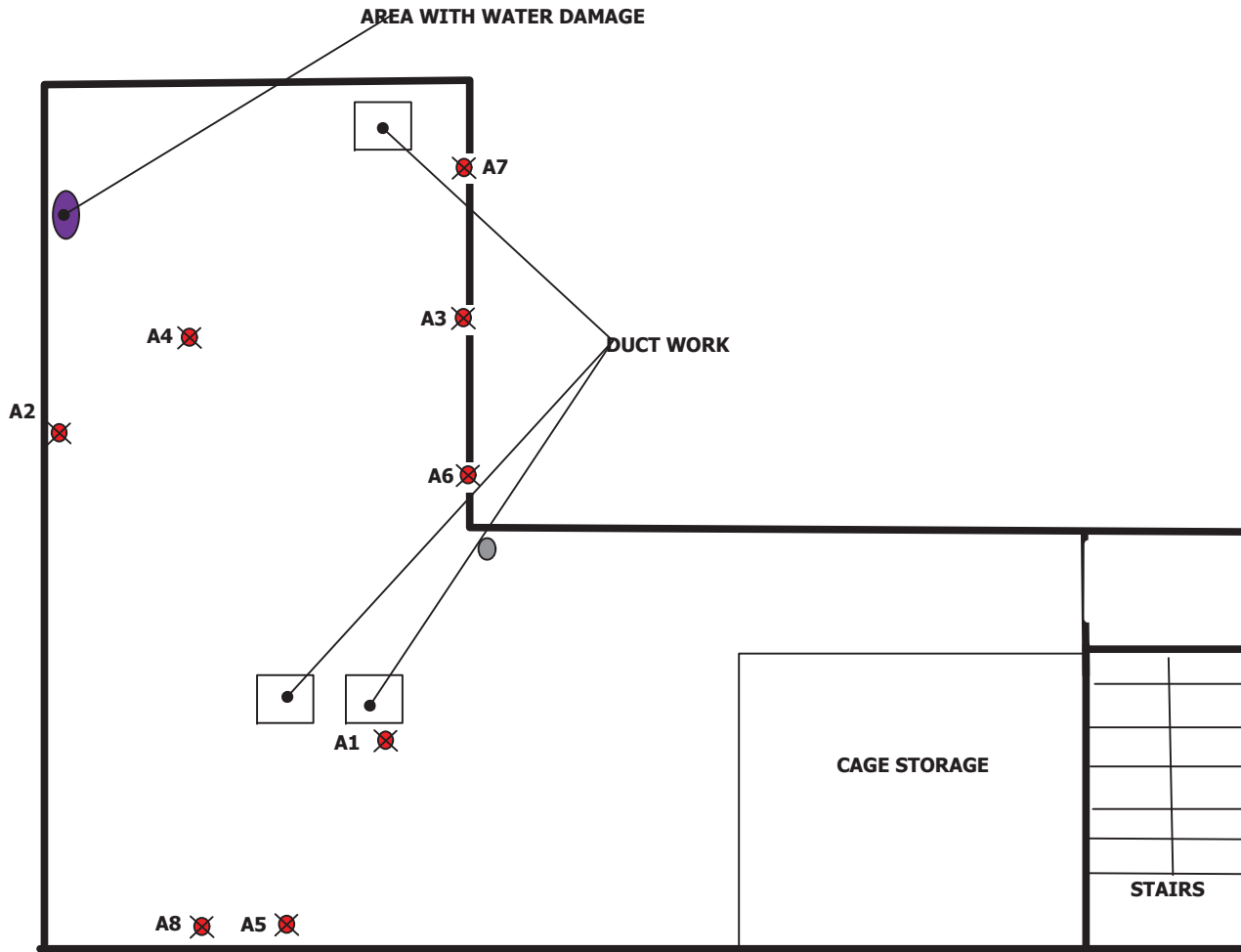
Edited: Feb 16, 2011

Edited by: ER

Project Location: Lacombe Research Centre



- Sample ID
A = asbestos sample
P = paint sample
- Sampling Location
- Floor Covering containing Asbestos
- Drywall Mud/Stipple/Wall covering containing Asbestos
- Wall and/or Attic Insulation containing Asbestos
- Pipe/tank insulation containing Asbestos
- Ozone Depleting Substance (ODS)
- ACM Sink Coating
- Radioactive Items
- Mercury
- Lead paint
- Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #21 ADMINISTRATION Attic



Date: Jan 17, 2011

Drawn by: KC

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix

Edited: Mar 8, 2011

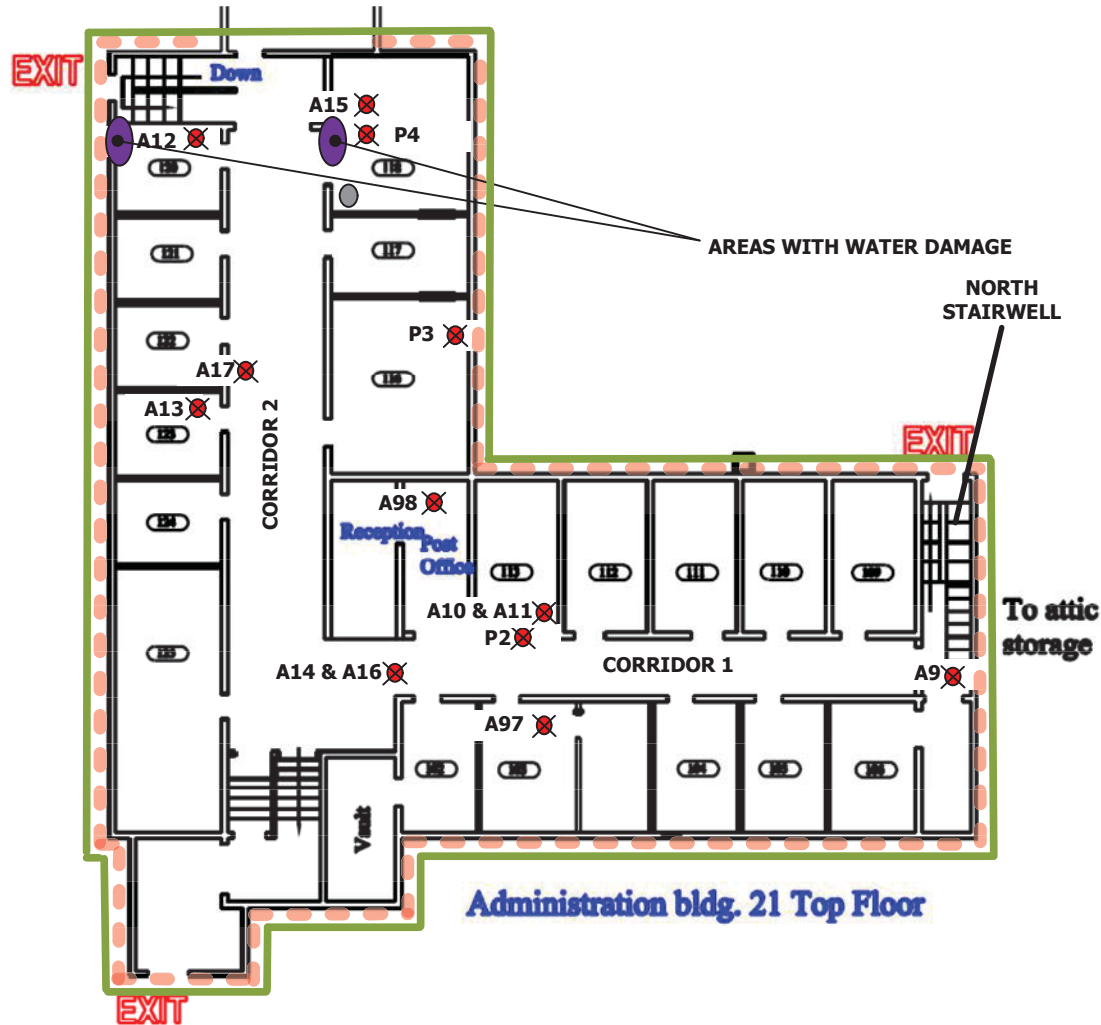
Edited by: KC

Project Location: Lacombe Research Centre

1b-7



- Sample ID
- A = asbestos sample
- P = paint sample
- Sampling Location
- Floor Covering containing Asbestos
- Drywall Mud/Stipple/Wall covering containing Asbestos
- Wall and/or Attic Insulation containing Asbestos
- Pipe/tank insulation containing Asbestos
- Ozone Depleting Substance (ODS)
- ACM Sink Coating
- Radioactive Items
- Mercury
- Lead paint
- Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #21 ADMINISTRATION Main



Date: Jan 17, 2011

Drawn by: KC

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix

Edited: Mar 8, 2011

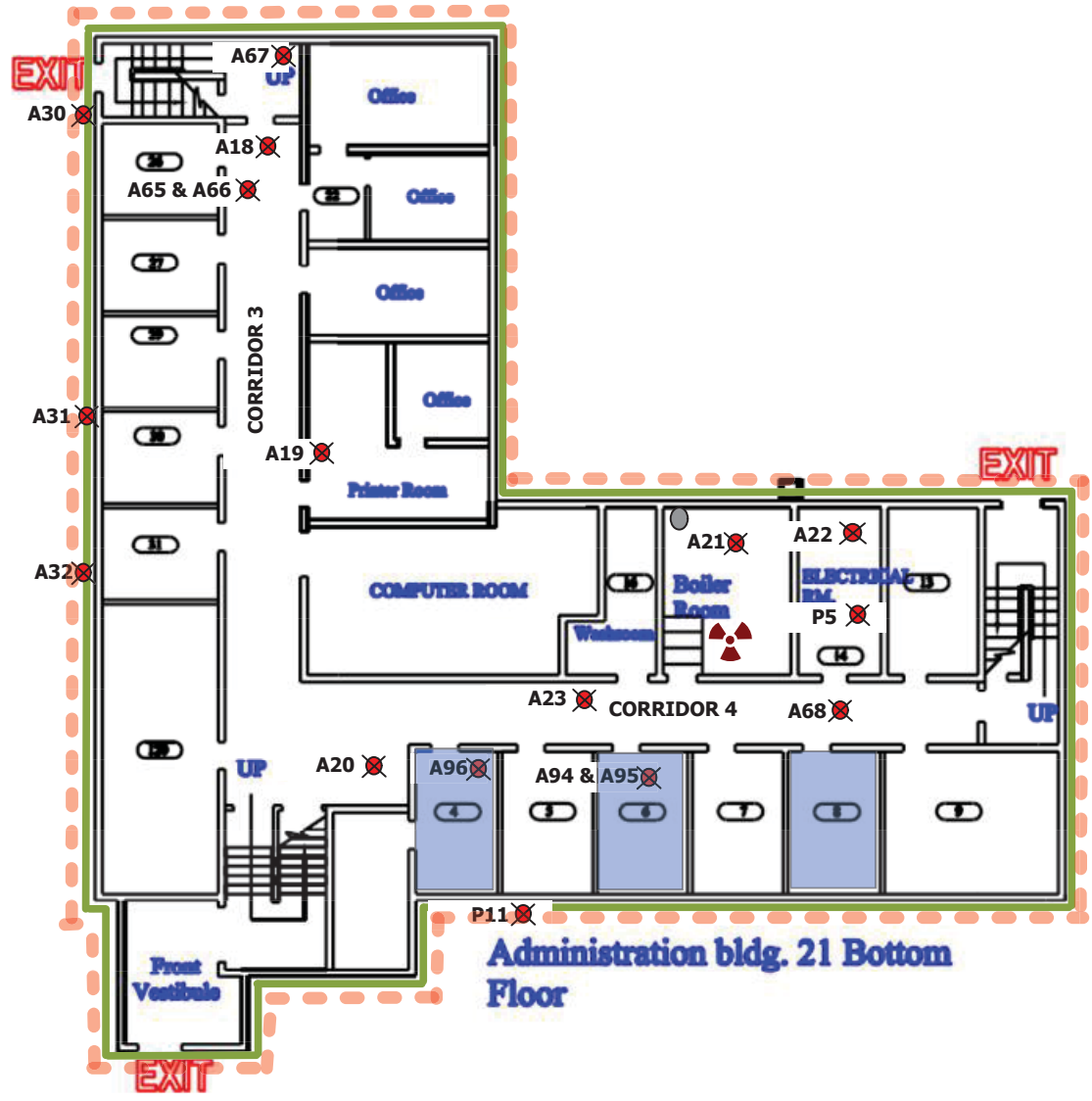
Edited by: ER

Project Location: Lacombe Research Centre

1b-8



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos














Scale: NTS

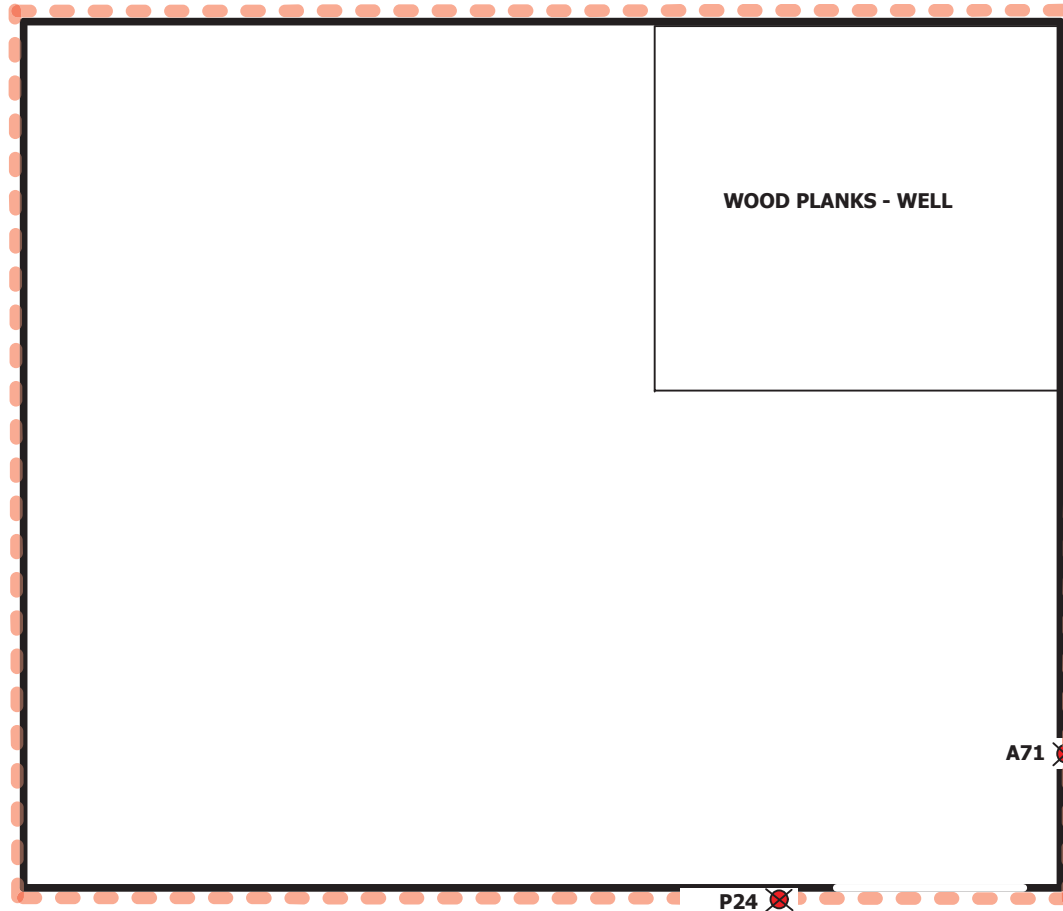
SITE SAMPLING DIAGRAM: #21 ADMINISTRATION Basement



Date: Jan 17, 2011 Drawn by: KC Project Name: Hazardous Materials Assessment Project No.: 11166 **Appendix 1b-9**
 Edited: Feb 16, 2011 Edited by: ER Project Location: Lacombe Research Centre



- Sample ID
 A = asbestos sample
 P = paint sample
-  Sampling Location
 -  Floor Covering containing Asbestos
 -  Drywall Mud/Stipple/Wall covering containing Asbestos
 -  Wall and/or Attic Insulation containing Asbestos
 -  Pipe/tank insulation containing Asbestos
 -  Ozone Depleting Substance (ODS)
 -  ACM Sink Coating
 -  Radioactive Items
 -  Mercury
 -  Lead paint
 -  Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #38 BEEF UNIT PUMP HOUSE



Date: Jan 17, 2011

Drawn by: KC

Project Name: Hazardous Materials Assessment

Project No.: 11166

**Appendix
1b-10**

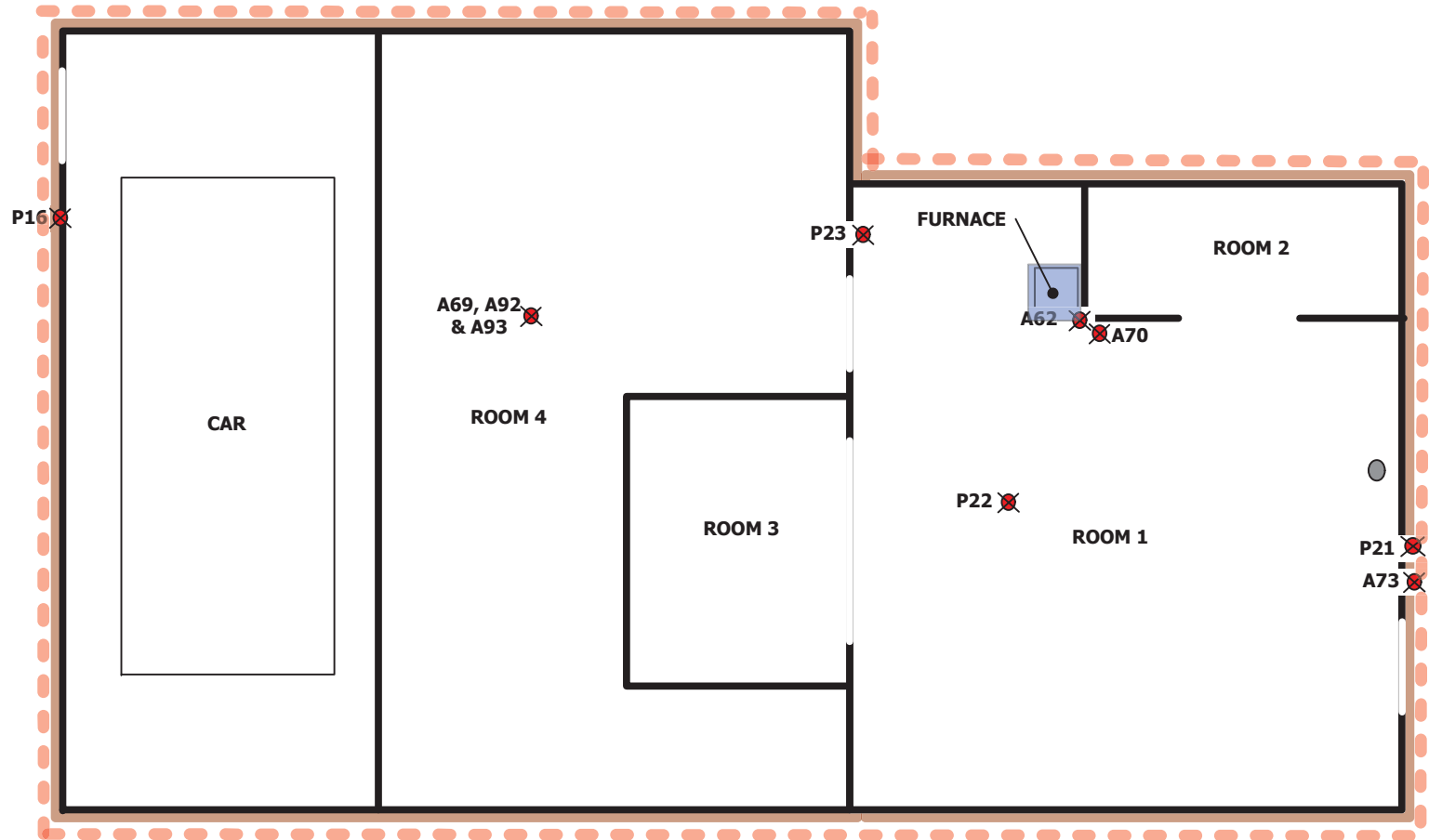
Edited: Mar 8, 2011

Edited by: KC

Project Location: Lacombe Research Centre



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #38A BEEF UNIT GARAGE



Date: Jan 17, 2011

Drawn by: KC

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix












Edited: Mar 8, 2011

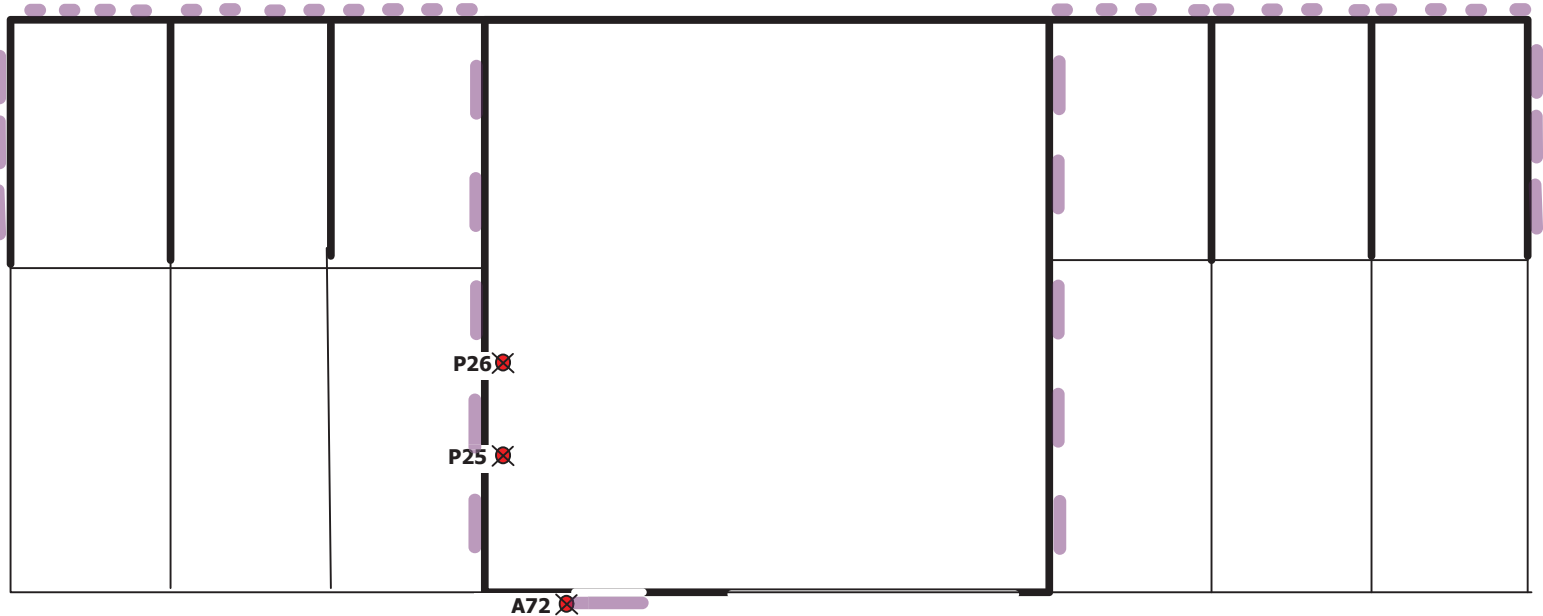
Edited by: KC

Project Location: Lacombe Research Centre

1b-11



- Sample ID
 A = asbestos sample
 P = paint sample
-  Sampling Location
 -  Floor Covering containing Asbestos
 -  Drywall Mud/Stipple/Wall covering containing Asbestos
 -  Wall and/or Attic Insulation containing Asbestos
 -  Pipe/tank insulation containing Asbestos
 -  Ozone Depleting Substance (ODS)
 -  ACM Sink Coating
 -  Radioactive Items
 -  Mercury
 -  Lead paint
 -  Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #40 BEEF UNIT TEST BARN



Date: Jan 17, 2011
 Edited: Feb 16, 2011

Drawn by: KC
 Edited by: ER

Project Name: Hazardous Materials Assessment
 Project Location: Lacombe Research Centre

Project No.: 11166

**Appendix
 1b-12**



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #41 BEEF UNIT RESIDENCE
Main



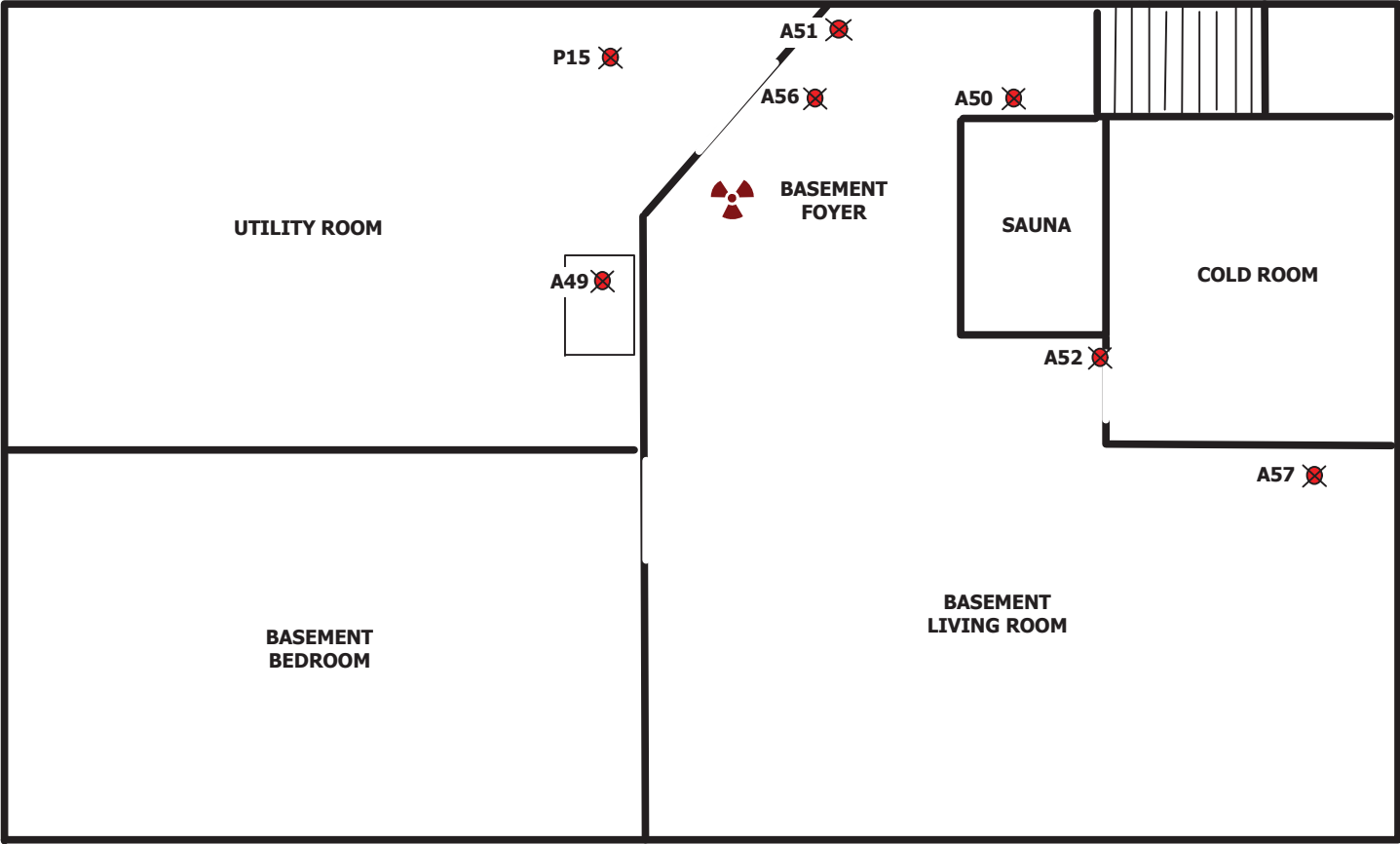
Date: Jan 17, 2011 Drawn by: KC Project Name: Hazardous Materials Assessment Project No.: 11166
 Edited: Feb 16, 2011 Edited by: ER Project Location: Lacombe Research Centre

Appendix
1b-13



Sample ID
 A = asbestos sample
 P = paint sample

- Sampling Location
- Floor Covering containing Asbestos
- Drywall Mud/Stipple/Wall covering containing Asbestos
- Wall and/or Attic Insulation containing Asbestos
- Pipe/tank insulation containing Asbestos
- Ozone Depleting Substance (ODS)
- ACM Sink Coating
- Radioactive Items
- Mercury
- Lead paint
- Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #41 BEEF UNIT RESIDENCE
Basement



Date: Jan 17, 2011

Drawn by: KC

Project Name: Hazardous Materials Assessment

Project No.: 11166












Appendix
1b-14

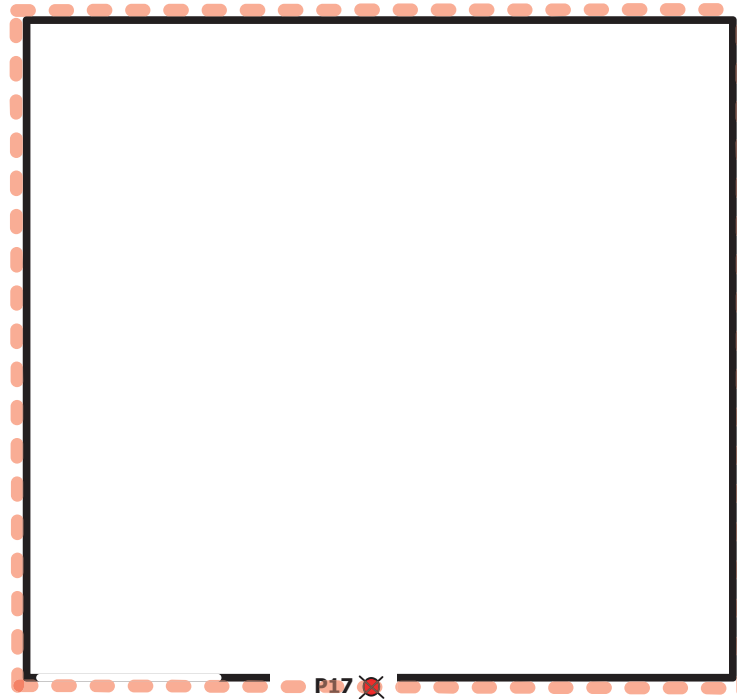
Edited: Feb 16, 2011

Edited by: ER

Project Location: Lacombe Research Centre



- Sample ID
 A = asbestos sample
 P = paint sample
-  Sampling Location
 -  Floor Covering containing Asbestos
 -  Drywall Mud/Stipple/ Wall covering containing Asbestos
 -  Wall and/or Attic Insulation containing Asbestos
 -  Pipe/tank insulation containing Asbestos
 -  Ozone Depleting Substance (ODS)
 -  ACM Sink Coating
 -  Radioactive Items
 -  Mercury
 -  Lead paint
 -  Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #41A SHED



Date: Jan 17, 2011

Drawn by: KC

Project Name: Hazardous Materials Assessment

Project No.: 11166

**Appendix
1b-15**

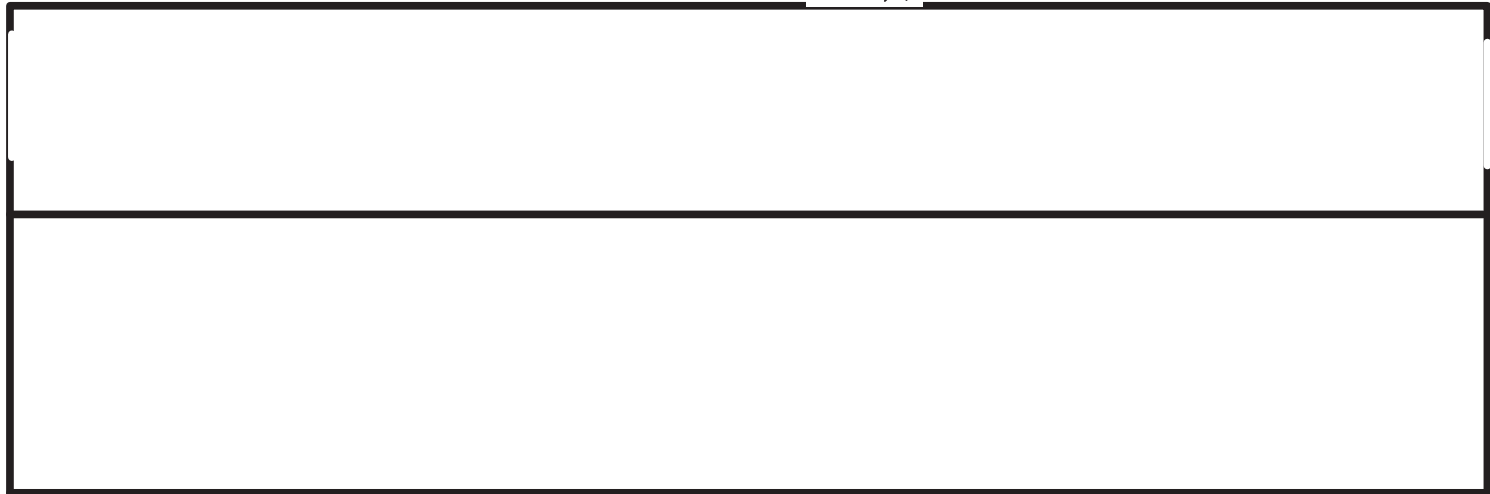
Edited: Feb 16, 2011












Edited by: ER

Project Location: Lacombe Research Centre



P27 



- Sample ID
 A = asbestos sample
 P = paint sample
-  Sampling Location
 -  Floor Covering containing Asbestos
 -  Drywall Mud/Stipple/Wall covering containing Asbestos
 -  Wall and/or Attic Insulation containing Asbestos
 -  Pipe/tank insulation containing Asbestos
 -  Ozone Depleting Substance (ODS)
 -  ACM Sink Coating
 -  Radioactive Items
 -  Mercury
 -  Lead paint
 -  Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #42B DRY COW FEEDLOT



Date: Jan 17, 2011

Drawn by: KC

Project Name: Hazardous Materials Assessment

Project No.: 11166

**Appendix
1b-16**

Edited: Feb 16, 2011

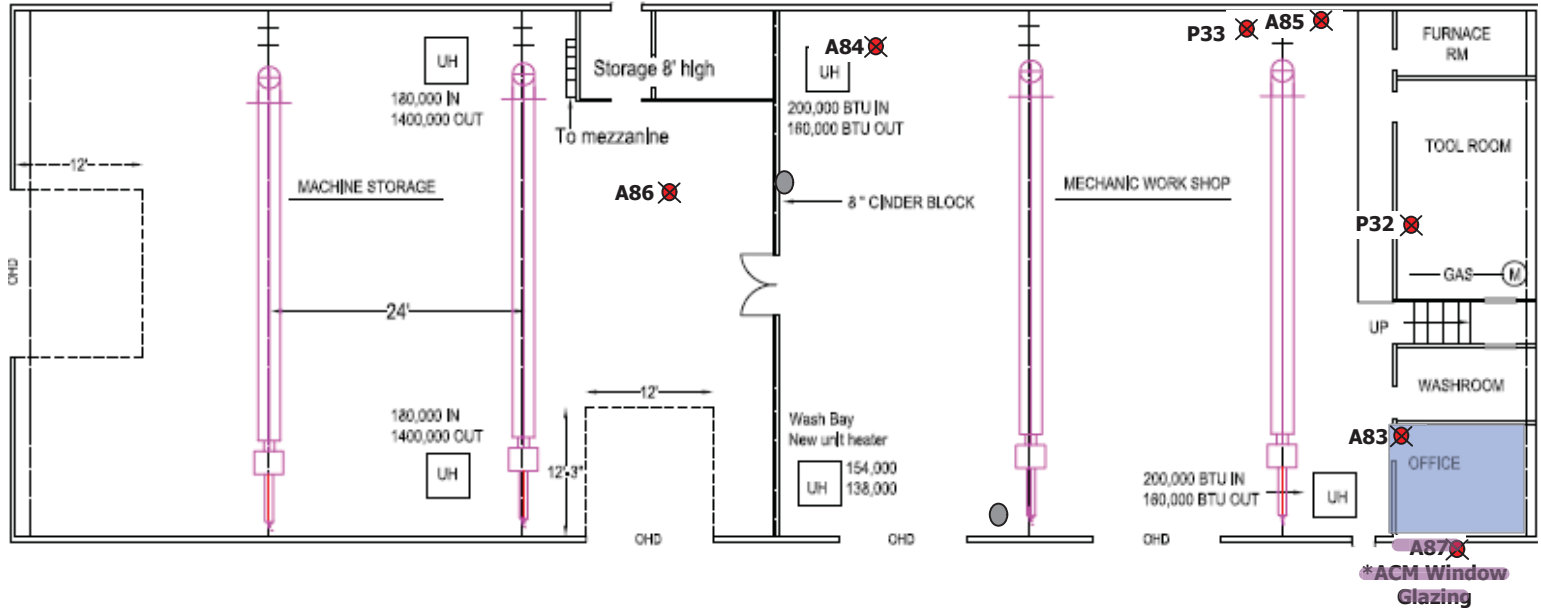
Edited by: ER

Project Location: Lacombe Research Centre



Sample ID
 A = asbestos sample
 P = paint sample

- Sampling Location
- Floor Covering containing Asbestos
- Drywall Mud/Stipple/Wall covering containing Asbestos
- Wall and/or Attic Insulation containing Asbestos
- Pipe/tank insulation containing Asbestos
- Ozone Depleting Substance (ODS)
- ACM Sink Coating
- Radioactive Items
- Mercury
- Lead paint
- Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #52 MACHINE & VEHICLE REPAIR



Date: Jan 17, 2011

Drawn by: KC

Project Name: Hazardous Materials Assessment

Project No.: 11166












**Appendix
1b-17**

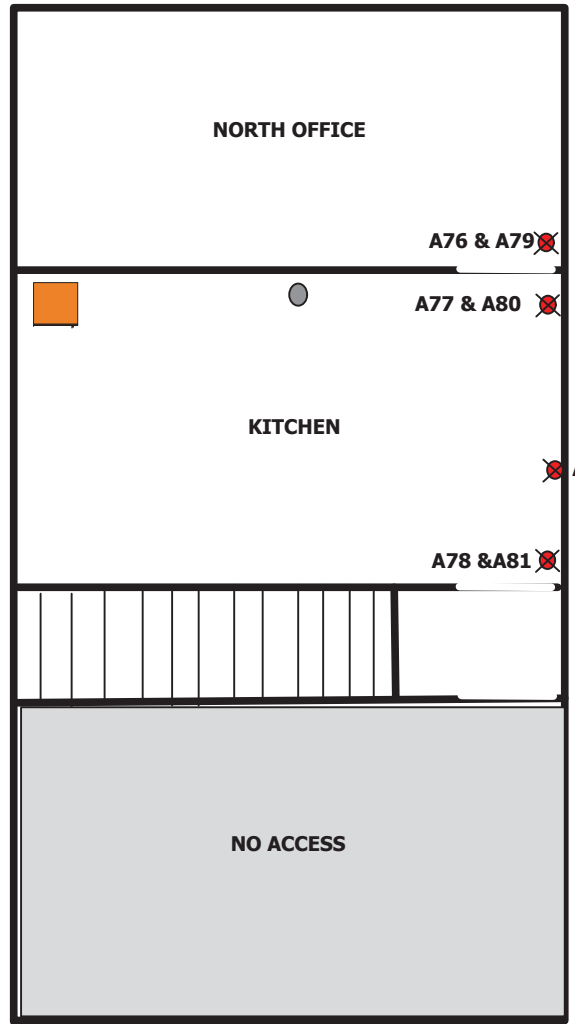
Edited: Feb 16, 2011

Edited by: ER

Project Location: Lacombe Research Centre



- Sample ID
 A = asbestos sample
 P = paint sample
-  Sampling Location
 -  Floor Covering containing Asbestos
 -  Drywall Mud/Stipple/Wall covering containing Asbestos
 -  Wall and/or Attic Insulation containing Asbestos
 -  Pipe/tank insulation containing Asbestos
 -  Ozone Depleting Substance (ODS)
 -  ACM Sink Coating
 -  Radioactive Items
 -  Mercury
 -  Lead paint
 -  Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #52 MAHCINE & VEHICLE REPAIR
2ND Floor



Date: Jan 17, 2011
 Edited: Feb 16, 2011

Drawn by: KC
 Edited by: ER

Project Name: Hazardous Materials Assessment
 Project Location: Lacombe Research Centre

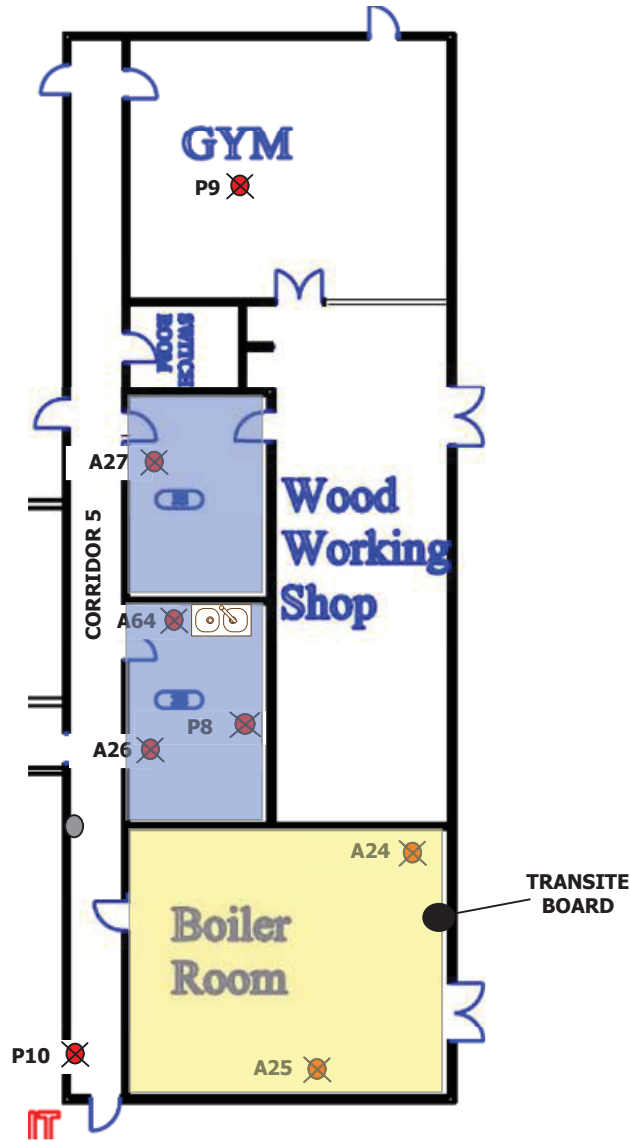
Project No.: 11166

Appendix
1b-18



Sample ID
 A = asbestos sample
 P = paint sample

- Sampling Location
- Floor Covering containing Asbestos
- Drywall Mud/Stipple/Wall covering containing Asbestos
- Wall and/or Attic Insulation containing Asbestos
- Pipe/tank insulation containing Asbestos
- Ozone Depleting Substance (ODS)
- ACM Sink Coating
- Radioactive Items
- Mercury
- Lead paint
- Window caulking containing Asbestos



SITE SAMPLING DIAGRAM: #53 HEADER HOUSE Main



Date: Jan 17, 2011

Drawn by: KC

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix 1b-19

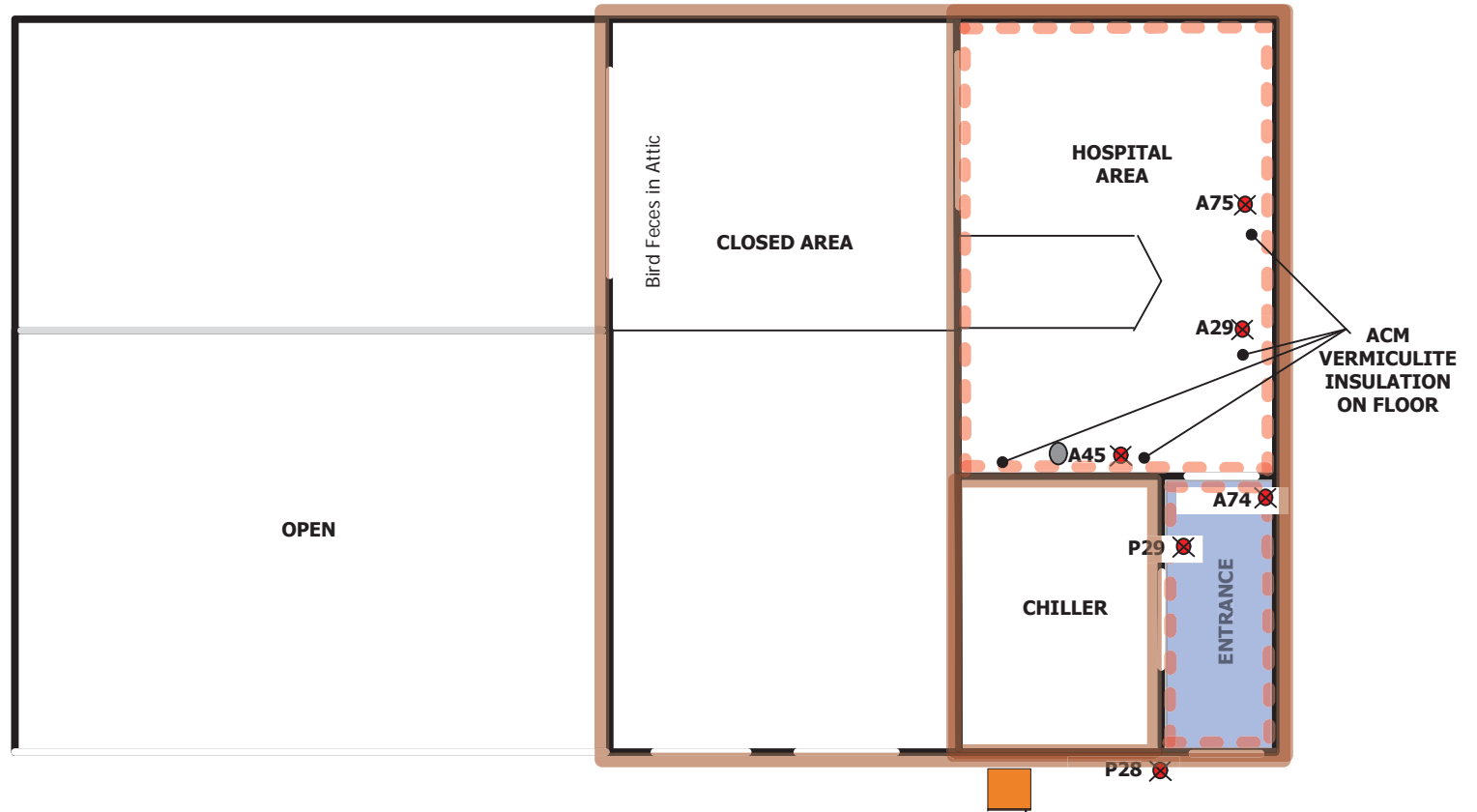
Edited: Mar 8, 2011

Edited by: KC

Project Location: Lacombe Research Centre



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #54 ANIMAL HOSPITAL



Date: Jan 17, 2011

Drawn by: KC

Project Name: Hazardous Materials Assessment

Project No.: 11166

**Appendix
1b-20**

Edited: Mar 8, 2011

Edited by: KC

Project Location: Lacombe Research Centre



#53 Header House

Sample A26 : Floor tile containing asbestos in room 2E



#53 Header House

Sample A27 : Floor tile containing asbestos in room 3E



#2 Residence

Sample A40 : Drywall mud containing asbestos in the hall



#54 Animal Hospital

Sample A45 : Insulation containing asbestos in the walls & ceiling

PHOTOGRAPHIC LOG



#2 Residence

Sample A63, A90 & A91 : Insulation containing asbestos in the attic



#53 Header House

Sample A64 : Sink insulation containing asbestos in room 2E



#21 Administration Building

Sample A65 & A66 : Pipe insulation containing asbestos in corridor 3



#21 Administration Building

Sample A67 : Pipe insulation containing asbestos in corridor 3

PHOTOGRAPHIC LOG



#21 Administration Building

Sample A68 : Pipe insulation containing asbestos in corridor 4



#38A Beef Unit Garage

Sample A69, A92 & A93 : Insulation containing asbestos in the attic



#38A Beef Unit Garage

Sample A70 : Floor tile containing asbestos in room 1



#40 Beef Unit Test Barn

Sample A72 : Window caulking containing asbestos on the exterior

PHOTOGRAPHIC LOG



#54 Animal Hospital

Sample A74 : Floor tile containing asbestos in the entrance



#54 Animal Hospital

Sample A75 & A29 : Insulation containing asbestos in the walls & attic



#52 Machine & Vehicle Repair

Sample A83 : Floor tile containing asbestos in the main office



#52 Machine & Vehicle Repair

Sample A87 : Window glazing containing asbestos on the exterior window

PHOTOGRAPHIC LOG



#41 Beef Unit Residence

Sample A58, A88 & A89: Insulation containing asbestos in the attic



#21 Administration

Sample A94, A95 & A96: Floor tile containing asbestos in rooms 4 & 6



#21 Administration

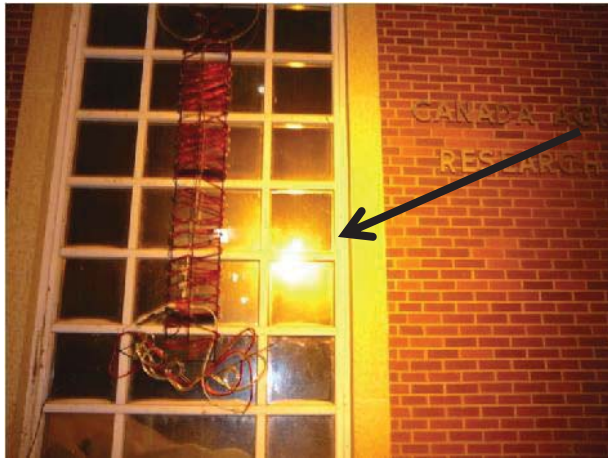
Area of water damage in room 118



#54 Animal Hospital

ACM Vermiculite Insulation on the Floor

PHOTOGRAPHIC LOG



#21 Administration Building

Sample P11 : White paint containing lead on the exterior



#2 Residence

Sample P13 : Dark green paint containing lead on the exterior



#38A Beef Unit Garage

Sample P16: White paint containing lead on the exterior



#41A Shed

Sample P17: White paint containing lead on the exterior

PHOTOGRAPHIC LOG



Taken: KC

Date: January 2011

File No. 11166

Buildings: 2,21, 38A & 41A

Parameter: Lead

Appendix

1C-6



#38A Beef Unit Garage

Sample P21 : White paint containing lead on the exterior



#54 Animal Hospital

Sample P29 : White paint containing lead inside the main room



#10 Machine Pole Barn

Sample P31: White paint containing lead on one side of the barn



#38 Pump House

Sample P24: White paint containing lead on the exterior

PHOTOGRAPHIC LOG



Taken: KC

Date: January 2011

File No. 11166

Buildings: 10,38, 38A & 54

Parameter: Lead

Appendix

1C-7



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197887	Description / Location:	Brown Duct Putty	
Client No.:	A1		#21; Attic	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197888	Description / Location:	Grey Mortar	
Client No.:	A2		#21; Attic South	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197889	Description / Location:	Grey Mortar	
Client No.:	A3		#21; Attic North	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197890	Description / Location:	Tan Fibrous	
Client No.:	A4		#21; Attic South	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	90	Cellulose	10

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: T. Fisher

Approved By:

Date: 1/31/2011

Frank E. Ehrenfeld, III
 Laboratory Director



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197891	Description / Location:	Tan Fibrous	
Client No.:	A5		#21; Attic East	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	90	Cellulose	10

Lab No.:	4197892	Description / Location:	Tan Fibrous	
Client No.:	A6		#21; Attic North	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	90	Cellulose	10

Lab No.:	4197893	Description / Location:	Black Roof Tar	
Client No.:	A7		#21; Attic North	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	10	Cellulose	90

Lab No.:	4197894	Description / Location:	Black Roof Tar	
Client No.:	A8		#21; Attic East	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	10	Cellulose	90

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: T. Fisher

Date: 1/31/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197895	Description / Location:	Tan Ceiling Tile; 2x2	
Client No.:	A10		#21; 113 Janitor Closet	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	95	Cellulose	5

Lab No.:	4197896	Description / Location:	White/Grey Plaster	
Client No.:	A11		#21; 113 Janitor Closet	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197897	Description / Location:	Tan Vinyl Sheet Flooring	
Client No.:	A12		#21; 120 Office	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	15	Cellulose	85

Lab No.:	4197898	Description / Location:	Blue Vinyl Sheet Flooring	
Client No.:	A13		#21; 123 Office	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	20	Cellulose	80

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: T. Fisher

Date: 1/31/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4197899	Description / Location: Grey Plaster		
Client No.: A14	#21; Attic Access		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4197900	Description / Location: White Plaster		
Client No.: A15	#21; 118 Ceiling		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4197901	Description / Location: White Ceiling Texture		
Client No.: A16	#21; Corridor 1		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4197902	Description / Location: White Ceiling Texture		
Client No.: A17	#21; Corridor 2		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: T. Fisher

Date: 1/31/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4197903	Description / Location: White Ceiling Texture		
Client No.: A18	#21; Corridor 3		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4197904	Description / Location: White Plaster		
Client No.: A19	#21; Corridor 3, Adjacent Rm. 18		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4197905	Description / Location: White Ceiling Texture		
Client No.: A20	#21; Corridor 4		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4197906	Description / Location: Grey Plaster		
Client No.: A21	#21; Boiler Rm.		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: T. Fisher

Date: 1/31/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4197907	Description / Location: Grey Plaster			
Client No.: A22	#21; Electrical Rm.			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	3	Fibrous Glass	97

Lab No.: 4197908	Description / Location: White Ceiling Texture			
Client No.: A23	#21; Corridor 4			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.: 4197909	Description / Location: Grey Floor Tile			
Client No.: A26	#53; AV Rm. 2E			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 3.7	Chrysotile	None Detected	None Detected	PC 96.3

Lab No.: 4197909	Description / Location: Yellow Mastic	Layer No.: 2		
Client No.: A26	#53; AV Rm. 2E			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: T. Fisher

Date: 1/31/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client:	Ballast Enviro. Conslt'g Ltd. PO Box87073 RPO DouglasSq. Calgary AB T2Z 3V7	Report Date:	2/1/2011
		Project:	Hazardous Mat'l's Assessment
		Project No.:	11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197910	Description / Location:	Grey Floor Tile #53; 3E Office	
Client No.:	A27			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 6.3	Chrysotile	None Detected	None Detected	PC 93.7

Lab No.:	4197910	Description / Location:	Yellow Mastic #53; 3E Office		Layer No.:	2
Client No.:	A27					
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>		
None Detected	None Detected	None Detected	None Detected	100		

Lab No.:	4197911	Description / Location:	Tan Fibrous #53; 3E Office			
Client No.:	A28					
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>		
None Detected	None Detected	90	Cellulose	10		

NIST-NVLAP No. 101165-0 NY-DOH No. 11021 AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: T. Fisher

Date: 1/31/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197912	Description / Location:	Tan Vermiculite Insulation	
Client No.:	A29		#54; Walls	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 0.25	Actinolite	5	Cellulose	PC 89.75
		5	Fibrous Glass	

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gänge, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

Lab No.:	4197913	Description / Location:	White Mortar	
Client No.:	A30		#21; Exterior Admin.	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197914	Description / Location:	White Glazing	
Client No.:	A31		#21; Exterior Admin., Window Frames	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: T. Fisher

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197915	Description / Location:	White Glazing	
Client No.:	A32		#21; Exterior Admin., Window Frames	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197916	Description / Location:	White Ceiling Texture	
Client No.:	A33		#2; Bsmt. Shoe Box	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197917	Description / Location:	Black Wire	
Client No.:	A34		#2; Bsmt.	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	60	Synthetic	40

Lab No.:	4197918	Description / Location:	Grey Mortar	
Client No.:	A35		#2; Bsmt. Chimney	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: T. Fisher

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197919	Description / Location:	Grey Glazing	
Client No.:	A36		#2; Bsmt. Window	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197920	Description / Location:	White Ceiling Texture	
Client No.:	A37		#2; Kitchen	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197921	Description / Location:	White Ceiling Texture	
Client No.:	A38		#2; Dining Rm.	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	2	Cellulose	98

Lab No.:	4197922	Description / Location:	Tan Mortar	
Client No.:	A39		#2; Main Floor Chimney	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197923	Description / Location:	Off-White Joint Compound	
Client No.:	A40		#2; Closet In Hall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 2.9	Chrysotile	None Detected	None Detected	PC 97.1

Lab No.:	4197924	Description / Location:	White/Tan Joint Compound	
Client No.:	A41		#2; Closet #2	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC Trace	Chrysotile	None Detected	None Detected	100

Lab No.:	4197925	Description / Location:	White Joint Compound	
Client No.:	A42		#2; Bathroom	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197926	Description / Location:	Off-White Joint Compound	
Client No.:	A43		#2; Foyer	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197927	Description / Location:	Black Tar Paper	
Client No.:	A44		#2; Ext.South-Over Wood Over Wood Siding	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	50	Cellulose	50

Lab No.:	4197928	Description / Location:	Brown Vermiculite Insulation	
Client No.:	A45		#54; Walls/Ceilings	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 0.75	Actinolite	Trace	Cellulose	PC 97.25
		2	Fibrous Glass	

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gänge, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

Lab No.:	4197929	Description / Location:	Tan Glazing	
Client No.:	A46		#2A; Garage Window	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197930	Description / Location:	Red/Black Vinyl Sheet Flooring	
Client No.:	A47		#41; Kitchen	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	40	Cellulose	60

Lab No.:	4197931	Description / Location:	Off-White/Black Vinyl Sheet Flooring	
Client No.:	A48		#41; Kitchen	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	30	Cellulose	70

Lab No.:	4197931	Description / Location:	Brown/Tan Mastic/Mat	Layer No.: 2
Client No.:	A48		#41; Kitchen	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	80	Cellulose	20

Lab No.:	4197932	Description / Location:	Grey Mortar	
Client No.:	A49		#41; Bsmt. Chimney	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197933	Description / Location:	Tan/Grey Ceiling Tile	
Client No.:	A52		#41; Bsmt. In Front Of Cold Rm.	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	95	Cellulose	5

Lab No.:	4197934	Description / Location:	White/Grey Plaster	
Client No.:	A53		#41; Main Bedroom Behind Door	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Note: Different material than indicated on Sample Log / Description.

Lab No.:	4197935	Description / Location:	White Joint Compound	
Client No.:	A54		#41; Bathroom Closet	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197936	Description / Location:	White Plaster	
Client No.:	A55		#41; 2nd Bedroom Behind Door	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Note: Different material than indicated on Sample Log / Description.

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4197937	Description / Location: White/Tan Ceiling Tile; 1x3		
Client No.: A56	#41; Bsmt. By Fire Detector		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	95	Cellulose
			5

Lab No.: 4197937	Description / Location: White Joint Compound		Layer No.: 2
Client No.: A56	#41; Bsmt. By Fire Detector		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4197938	Description / Location: Tan/Purple Ceiling Tile; 1x3		
Client No.: A57	#41; Bsmt. By Light		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	95	Cellulose
			5

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197939	Description / Location:	Tan Vermiculite Insulation	
Client No.:	A58		#41; Attic	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	2	Fibrous Glass	98

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gänge, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

Lab No.:	4197940	Description / Location:	Tan Ceiling Tile; 1x1	
Client No.:	A59		#41; Porch	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.:	4197941	Description / Location:	Brown Vinyl Sheet Flooring	
Client No.:	A60		#2; Porch	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	30	Cellulose	70

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197942	Description / Location:	White Ceiling Texture	
Client No.:	A61		#2; Kitchen	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	5	Cellulose	95

Lab No.:	4197943	Description / Location:	Grey Mortar	
Client No.:	A62		#38A; Chimney	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197944	Description / Location:	Brown Vermiculite Insulation	
Client No.:	A63		#2; Attic	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC Trace	Actinolite	4	Fibrous Glass	96

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gänge, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197945	Description / Location:	Black/Silver Tar	
Client No.:	A64		#53; AV Rm.	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 4.8	Chrysotile	None Detected	None Detected	PC 95.2

Lab No.:	4197946	Description / Location:	Grey Pipe Elbow Insulation	
Client No.:	A65		#21; Corridor 3	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
65	Chrysotile	10	Fibrous Glass	25

Lab No.:	4197947	Description / Location:	Off-White Pipe Insulation	
Client No.:	A66		#21; Corridor 3	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
65	Chrysotile	25	Cellulose	10

Lab No.:	4197948	Description / Location:	Grey Pipe Insulation	
Client No.:	A67		#21; Corridor 3	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
25	Chrysotile	55	Fibrous Glass	20

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197949	Description / Location:	Grey Pipe Insulation	
Client No.:	A68		#21; Corridor 4	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
60	Chrysotile	25	Cellulose	15
		Trace	Fibrous Glass	

Lab No.:	4197950	Description / Location:	Brown Vermiculite Insulation	
Client No.:	A69		#38A; Ceiling	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 0.5	Actinolite	3	Fibrous Glass	PC 96.5

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gänge, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4197951	Description / Location: Off-White Floor Tile		
Client No.: A70	#38A; Rm. 1 Furnace		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 1.3	Chrysotile	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			PC 98.7

Lab No.: 4197951	Description / Location: Black Mastic		Layer No.: 2
Client No.: A70	#38A; Rm. 1 Furnace		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			100

Lab No.: 4197952	Description / Location: Black/Tan Tar Paper		
Client No.: A71	#38; Walls		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	75	Cellulose
			<u>% Non-Fibrous Material</u>
			25

Lab No.: 4197953	Description / Location: Off-White Glazing		
Client No.: A72	#40; South Window		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 3.1	Chrysotile	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			PC 96.9

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197954	Description / Location:	Tan Glazing	
Client No.:	A73		#38A; West Window	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197955	Description / Location:	Off-White Floor Tile	
Client No.:	A74		#54; Entrance	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.9	Chrysotile	None Detected	None Detected	PC 98.1

Lab No.:	4197956	Description / Location:	Brown Vermiculite Insulation	
Client No.:	A75		#54; Walls	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 0.25	Actinolite	2	Fibrous Glass	PC 97.75

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gänge, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197957	Description / Location:	White Joint Compound	
Client No.:	A76		#52; 2nd Floor	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197958	Description / Location:	White Joint Compound	
Client No.:	A77		#52; 2nd Floor	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197959	Description / Location:	White Joint Compound	
Client No.:	A78		#52; 2nd Floor	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197960	Description / Location:	White Ceiling Texture	
Client No.:	A79		#52; 2nd Floor Office North	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	5	Cellulose	95

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197961	Description / Location:	White Ceiling Texture	
Client No.:	A80		#52; 2nd Floor Kitchen North	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	5	Cellulose	95

Lab No.:	4197962	Description / Location:	White Ceiling Texture	
Client No.:	A81		#52; 2nd Floor Kitchen South	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	2	Cellulose	98

Lab No.:	4197963	Description / Location:	Brown Vinyl Sheet Flooring	
Client No.:	A82		#52; 2nd Floor Kitchen	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197963	Description / Location:	Tan Mastic	Layer No.: 2
Client No.:	A82		#52; 2nd Floor Kitchen	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197964	Description / Location:	Off-White Floor Tile	
Client No.:	A83		#52; Main Floor Office	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 2.4	Chrysotile	None Detected	None Detected	PC 97.6

Lab No.:	4197965	Description / Location:	Tan Fibrous	
Client No.:	A84		#52; West Part Of East Bay	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.:	4197966	Description / Location:	Grey/Yellow Insulation	
Client No.:	A85		#52; East Shop Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4197967	Description / Location: Grey Insulation		
Client No.: A86	#52; West Shop Ceiling		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	98	Fibrous Glass
			2

Lab No.: 4197967	Description / Location: Black/Tan Wrap		Layer No.: 2
Client No.: A86	#52; West Shop Ceiling		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	60	Cellulose
			40

Lab No.: 4197968	Description / Location: Off-White Glazing		
Client No.: A87	#52; South Shop Window		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 1.3	Chrysotile	None Detected	None Detected
			PC 98.7

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197969	Description / Location:	Brown Vermiculite Insulation	
Client No.:	A88		#41; Attic	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	3	Fibrous Glass	97

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

Lab No.:	4197970	Description / Location:	Brown Vermiculite Insulation	
Client No.:	A89		#41; Attic	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	1	Fibrous Glass	99

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

NIST-NVLAP No. 101165-0 NY-DOH No. 11021 AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197971	Description / Location:	Brown Vermiculite Insulation	
Client No.:	A90		#2; Attic	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 0.25	Actinolite	2	Fibrous Glass	PC 97.75

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

Lab No.:	4197972	Description / Location:	Brown Vermiculite Insulation	
Client No.:	A91		#2; Attic	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC Trace	Actinolite	2	Fibrous Glass	98

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197973	Description / Location:	Brown Vermiculite Insulation	
Client No.:	A92		#38A; Attic	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 0.25	Actinolite	2	Fibrous Glass	PC 97.75

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

Lab No.:	4197974	Description / Location:	Brown Vermiculite Insulation	
Client No.:	A93		#32A; Attic	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 0.5	Actinolite	3	Fibrous Glass	PC 96.5

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

NIST-NVLAP No. 101165-0 NY-DOH No. 11021 AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4197975	Description / Location: Brown Caulk			
Client No.: Dup1				
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	10	Wollastonite	90

Lab No.: 4197976	Description / Location: White Plaster			
Client No.: Dup2				
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.: 4197976	Description / Location: Grey Plaster	Layer No.: 2		
Client No.: Dup2				
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.: 4197977	Description / Location: Grey Transite Panel Board			
Client No.: Dup3				
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
25	Chrysotile	None Detected	None Detected	75

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197978	Description / Location:	Off-White Joint Compound	
Client No.:	Dup4			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 2.6	Chrysotile	None Detected	None Detected	PC 97.4

Lab No.:	4197979	Description / Location:	Grey Mortar	
Client No.:	Dup5			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197980	Description / Location:	Off-White Glazing	
Client No.:	Dup6			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.8	Chrysotile	None Detected	None Detected	PC 98.2

Lab No.:	4197981	Description / Location:	Off-White Floor Tile	
Client No.:	Dup7			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.7	Chrysotile	None Detected	None Detected	PC 98.3

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4197982	Description / Location: Tan Fibrous		
Client No.: Dup8	Curtain		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	98	Cellulose
			2

Lab No.: 4197983	Description / Location: Brown Insulation		
Client No.: Dup9			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	98	Fibrous Glass
			2

Lab No.: 4197983	Description / Location: Black/Tan Wrap		Layer No.: 2
Client No.: Dup9			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	60	Cellulose
			40

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/1/2011

BULK MATERIAL SAMPLING LOG

 Worksite: LRC

 Date: Jan 17th 11

 Client: P.W. GS - C.

 Job No.: 11166

Date Results Required: _____

 No. Samples: 102

 Page 1 of 8

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A1	Red/brown	duct puddy	#21 attic	good 4197887	3 ducts	965
A2	gray	Mortar	#21 attic south	good 4197888	exterior building	966
A3	gray	Mortar	#21 attic north	good 4197889	exterior building	80967
A4	light brown	roof pannel	#21 attic south	poor 4197890	entire floor	80970
A5	"	"	#21 attic east	poor 4197891	"	80971
A6	"	"	#21 attic north	poor 4197892	"	80969
A7	Black	Roof tar	#21 attic north	fair 4197893	"	80968
A8	"	"	#21 attic east	" 4197894	"	80971
A9	white	plaster	#21 north stairwell	good	interior building	80972
A10	Brown	2x2 perf. ceiling tile	#21 113 Janitor closet	poor 4197895	1m x 2m	80973
A11	Green	plaster	#21 115 Janitor closet	poor 4197896	"	80974
A12	Brown	treebark sheet lino	#21 120 office	good 4197897	5x5m (in room)	80987
A13	Blue/gray	Blue/gray lines sheet lino	#21 123 office	good 4197898	3m x 5m	80980
A14	gray	plaster	#21 attic access	" 4197899	entire building	80978

8/21 up to 10/20/2011

ASB

BULK MATERIAL SAMPLING LOG

Worksite: LRC

Date: Jan 17 / 11

Client: PWGSC

Job No.: 11166

Date Results Required: _____

No. Samples: A29 - A42 (102) Page 3 of 8

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A29	brown	vermiculite	(S4) walls	poor 4197912	24ft ² + walls	90146
A30	gray	Mortar	(#21) exterior admin.	Good 4197913	exterior	109-005
A31	white	caulking	(#21) "	" 4197914	window frames	109-006
A32	"	"	(#21) "	" 4197915	"	109-007
A33	"	stipple	(#2) Bsmt. shoe box	" 4197916	1m ²	80913
A34	Black	wire	(#2) Bsmt wire	" 4197917	sporadic	80912
A35	Red	Brick Mortar	(#2) Bsmt chimney	" 4197918	2x2 2.5ft high	80911
A36	gray	puddy	(#2) Bsmt window	" 4197919	3 windows	80941
A37	white	stipple	(#2) Kitchen	" 4197920	ceiling	80916
A38	"	"	(#2) dining room	" 4197921	ceiling	80918
A39	gray	mortar	(#2) Main floor chimney	" 4197922	2x2x8	80917
A40	white	drywall puddle	(#2) closet in hall	" 4197923	assume all walls	80926
A41	"	"	(#2) closet #2	" 4197924	"	80921
A42	"	"	(#2) Bathroom	" 4197925	1/2 walls	80922

109-005
 109-006
 109-007
 80913
 80912
 80911
 80941
 80916
 80918
 80917
 80926
 80921
 80922

BULK MATERIAL SAMPLING LOGWorksite: LRCDate: Jan 17/11Client: P.W. G.S.CJob No.: 11166

Date Results Required: _____

No. Samples: A43 - A56 (102) Page 4 of 8

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A43	light Brown	Plaster	#2 Foyer	Fair 4197926	walls under wall board	86 915
A44	Black	tar paper	#2 exterior South - over wood over wood siding	good 4197927	entire house	80 950
A45	brown	vermiculite	#5A walls/ceiling	Poor 4197928	walls + attic	90146
A46	gray	window puddle	#2A garage window	Poor 4197929	3 windows	80, 942
A47	Pink	Floor tile	#4 Kitchen	" 4197930	assume Kitchen	80 824
A48	beige	"	#4 "	" 4197931	"	"
A49	gray	Brick mortar	#4 Bsm't chimney	good 4197932	chimney	80 879
A50	white	2x2 pnhole ceiling tile	#4 Bsm't foyer ceiling	fair —	1/2 Bsm't	80 878
A51	"	"	#4 "	" —	"	"
A52	purple	"	#4 Bsm't in front of cold room	" 4197933	"	80 881
A53	drywall puddle	drywall puddle	#4 Main bedroom behind door	good 4197934	Main floor	80 886
A54	"	"	#4 Bathroom closet	" 4197935	"	80 885
A55	"	"	#4 2nd bedroom behind door	" 4197936	"	80 888
A56	light purple	ix3 ceiling tile	#4 Bsm't by fire detector	" 4197937	1 Room	80 882

Analyzed by PLM 1/28

ASB

BULK MATERIAL SAMPLING LOG

Worksite: _____ Date: Jan 18/11
 Client: Pwase Job No.: 11166L
 Date Results Required: _____ No. Samples: 102 Page 5 of 8

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A57	purple	1x3 ceiling tile	(41) Bsmnt by light	good 4197938	one room	0883
A58	brown	vermiculite	(41) Attic	good 5" vermiculite 4197939	low level	0891
A59	white	1x1 ceiling tile	(41) Porch	good 4197940	porch only	0897
A60	brown	floor covering	(2) Porch	fair 4197941	porch only	0925
A61	white	stipple	(2) kitchen ceiling	good 4197942	kitchen	0924
A62	gray	mortar	(38A) chimney	" 4197943	chimney	9023
A63	brown	vermiculite	(2) attic AR room	" 4197944	attic	935
A64	metallic brown	sink insulation	(53) AR room	" 4197945	1 sink	953
A65	white	pipe elbow insl.	(21) corridor 3	fair 4197946	4	994
A66	"	pipe insulation	(21) "	" 4197947	4	"
A67	"	"	(21) "	" 4197948	1	998
A68	"	pipe insulation	(21) Corridor 4	poor 4197949	5	003
A69	brown	vermiculite	(38A) ceiling	good 4197950	roof	9005
A70	brown	floor tile	(38A) room 1 furnace	fair 4197951	rim x 0.5m	90043

4197952



L.R.C. ASB

BULK MATERIAL SAMPLING LOG

Worksite: _____ Date: Jan 19
 Client: PCGSC Job No.: 11166L
 Date Results Required: _____ No. Samples: 102 Page 6 of 8

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A71	black	tan paper	(38) walls	poor 4197952	all walls-	90049
A72	white	caulking	(40) South window	poor 4197953	all windows	90065
A73	white	caulking	(38A) west window	poor 4197954	all windows except N ones.	90098
A74	off white	tile floor	(54) entrance	poor 4197955	1m x 3m.	90137
A75	brown	vermiculite	(54) walls	poor 4197956	attic + walls	90146
A76	white/green	drywall putty	(52) 2nd floor	good 4197957	entire 2nd FL	90225
A77	"	"	(52) 2nd floor	good 4197958	"	90227
A78	"	"	(52) 2nd floor	good 4197959	"	90224
A79	white	stipple	(52) 2nd FL office north	" 4197960	" ceiling	90230
A80	"	"	(52) 2nd FL kitchen N	" 4197961	"	90229
A81	"	"	(52) 2nd FL kitchen S	" 4197962	"	90229
A82	brown streak	Lint	(52) 2nd FL kitchen	good 4197963	2nd FL floor	90228
A83	off white	floor tile	(52) main floor office	poor 4197964	3m x 3m	90217
A84	yellow	welding screen	(52) west part of east bay	poor 4197965	6' x 30'	90218

ASB

BULK MATERIAL SAMPLING LOG

Worksite: LRC Date: Jan 20/11
 Client: RWUSC Job No.: 11166L
 Date Results Required: _____ No. Samples: 102 Page 7 of 8

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A85	brassy	insulation	(52) east shop wall	good 4197966	entire 1/2 exterior building	90219
A86	"	"	west shop (52) ceiling	" 4197967	"	90220
A87	white	window glazing	south shop (52) window	fair 4197968	entire window	90231
A88	brown	vermiculite	(41) attic	good 4197969	attic	0891
A89	brown	vermiculite	(41) attic	" 4197970	"	0891
A90	"	"	(2) "	" 4197971	"	0935
A91	"	"	(2) "	" 4197972	"	"
A92	"	"	(38A) "	" 4197973	"	9005
A93	"	"	(39A) "	" 4197974	"	"

70



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client:	Ballast Enviro. Conslt'g Ltd.	Report Date:	2/19/2011
	PO Box 87073 RPO Douglas Sq.	Project:	11166L
	Calgary AB T2Z 3V7	Project No.:	11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4217100	Description / Location:	Grey Floor Tile	
Client No.:	A94			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 5.9	Chrysotile	None Detected	None Detected	PC 94.1

Lab No.:	4217100	Description / Location:	Black Mastic		La-er No.:	V
Client No.:	A94					
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>		
None Detected	None Detected	None Detected	None Detected	100		

Lab No.:	4217101	Description / Location:	Grey Floor Tile	
Client No.:	A95			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 6.2	Chrysotile	None Detected	None Detected	PC 93.8

Lab No.:	4217101	Description / Location:	Black Mastic		La-er No.:	V
Client No.:	A95					
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>		
PC Trace	Chrysotile	None Detected	None Detected	100		

NIST10 LAP No. 6566H15

NY1DO8 No. 665V6

AI8 A Lab No. 6556mm

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Anal-ysis Perfor-y ed B- : R. Caran

Approved B- : _____

Date: 2/19/2011

Frank E. Ehrenfeld, III
 Laboratory Director



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client:	Ballast Enviro. Conslt'g Ltd. PO Box 87073 RPO Douglas Sq. Calgary AB T2Z 3V7	Report Date:	2/19/2011
		Project:	11166L
		Project No.:	11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4217102	Description / Location:	Grey Floor Tile	
Client No.:	A96			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 5.7	Chrysotile	None Detected	None Detected	PC 94.3

Lab No.:	4217102	Description / Location:	Black Mastic	
Client No.:	A96			La-er No.: V
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC Trace	Chrysotile	None Detected	None Detected	100

Lab No.:	4217103	Description / Location:	Brown Floor Tile	
Client No.:	A97			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	3	Cellulose	97

Lab No.:	4217103	Description / Location:	Brown Mastic	
Client No.:	A97			La-er No.: V
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST10 LAP No. 6566H15

NY108 No. 665V6

AI8 A Lab No. 6556mm

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Anal- sis Perfor y ed B- : R. Caran

Date: 2/19/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client:	Ballast Enviro. Conslt'g Ltd. PO Box 87073 RPO Douglas Sq. Calgary AB T2Z 3V7	Report Date:	2/19/2011
		Project:	11166L
		Project No.:	11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4217104	Description / Location: Brown Floor Tile		
Client No.: A98			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	3	Cellulose
			97

NIST10 LAP No. 6566H15 NY1D08 No. 665V6 AI8 A Lab No. 6556mm

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Anal-ysis Perfor-y ed B- : R. Caran

Date: 2/19/2011

International Asbestos Testing Laboratories
 9000 Commerce Parkway, Suite B
 Mt. Laurel, New Jersey 08054
 Attn: Ray Sankey

Tel. 856 231-9449
 Fax 856 231-9818

- Chain of Custody -

Client: Ballast Environmental Consulting Ltd.
PO Box 87073 RPO Douglas SQ
Calgary, AB Canada T2Z 3V7

Project Name: 11166 L
Project No.: _____

Phone: 403-452-3110
FAX: 403-452-3133

Contact: Elvie Reinson
Pager: Cell: 403-860-8524

Special Instructions: _____

Type:

Asbestos	Lead	Other
<input type="checkbox"/> Air	<input type="checkbox"/> Air	<input type="checkbox"/> Soil
<input checked="" type="checkbox"/> Bulk	<input type="checkbox"/> Bulk	<input type="checkbox"/> Paint
<input type="checkbox"/> Water	<input type="checkbox"/> Water	<input type="checkbox"/> Other
<input type="checkbox"/> Soil	<input type="checkbox"/> Dust	_____
<input type="checkbox"/> Other	<input type="checkbox"/> Other	_____

Analysis Method:

<input type="checkbox"/> PCM : NIOSH 7400	<input checked="" type="checkbox"/> PLM : Bulk Asbestos EPA 600	<input type="checkbox"/> TEM : AHERA
<input type="checkbox"/> PCM : OSHA	<input checked="" type="checkbox"/> PLM : Point Counting 198.1	<input type="checkbox"/> TEM : NIOSH 7402
<input type="checkbox"/> PCM : Other _____	<input type="checkbox"/> PLM : NOB via 198.1 (PLM only)	<input type="checkbox"/> TEM : EPA Level II
<input type="checkbox"/> AAS : NIOSH 7082 (Air)	<input type="checkbox"/> If <1% by PLM, to TEM via 198.4	<input type="checkbox"/> TEM : Microvac / Wipe
<input type="checkbox"/> AAS : Lead in Drinking Water	to meet NYSDOH requirements **	<input type="checkbox"/> TEM : Asbestos in Water
<input type="checkbox"/> AAS : Lead in Paint ASTM D3335-85a	(**call to confirm TAT!)	<input type="checkbox"/> TEM : Bulk Analysis
<input type="checkbox"/> AAS : Lead Dust/Wipe "		<input type="checkbox"/> TEM : NOB 198.4
<input type="checkbox"/> AAS : Other Metals / Soil _____		<input type="checkbox"/> TEM : Other _____
		<input type="checkbox"/> Total Dust : NIOSH 0500

Turnaround Time:

email results
elvie@ballastenvironmental.com

FAX: _____ **Verbals:** _____
date / time date / time

10 Day 5 Day 3 Day 2 Day 1 Day 6 hour RUSH

Preliminary FAX/Verbal Results Requested by: _____

Sample Numbers:

Client #(s): A94 - A98
(start) (end)

IATL#(s): A94 95 96 97 98 4217101 4217102 4217103 4217104 Total: _____
(start) (end)

Chain of Custody:

Relinquished: <u>Elvie Reinson</u>	Date: <u>Feb 14</u>	Time: _____
Received: _____	Date: _____	Time: _____
Sample Log-in: <u>1022116/4</u>	Date: _____	Time: _____
Sample Prep: _____	Date: _____	Time: _____
Analyzed: _____	Date: <u>Feb 14 2011</u>	Time: _____
QA/QC Review: _____	Date: _____	Time: _____
Archived/Released: _____	IATL - By: _____	Time: _____
QA/QC InterLAB Use: _____		



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 1/28/2011
Project: Hazardous Materials Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4197123	Description / Location: Grey/White Plaster		
Client No.: A9	#21 N Stairwell		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4197124	Description / Location: Grey/White Plaster/Paint		
Client No.: P2	#21 113 Janitor Closet		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4197125	Description / Location: Tan/White Plaster/Paint		
Client No.: P3	#21 116 Wall		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4197126	Description / Location: Blue/Green Paint		
Client No.: P4	#21 118 Wall		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: J. Haremza

Approved By:

Date: 1/28/2011

Frank E. Ehrenfeld, III
 Laboratory Director



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 1/28/2011
Project: Hazardous Materials Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197127	Description / Location:	White/Tan Plaster/Paint	
Client No.:	P5		#21 Electric Room	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4197128	Description / Location:	Grey Transite	
Client No.:	A24		#53 Boiler Room	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
35	Chrysotile	None Detected	None Detected	65

Lab No.:	4197129	Description / Location:	Brown Transite	
Client No.:	A25		#53 Boiler Room	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
30	Chrysotile	None Detected	None Detected	70

Lab No.:	4197137	Description / Location:	Tan/White Ceiling Tile	
Client No.:	A50		#41 Bsmt Foyer	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	80	Cellulose	20

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: J. Haremza

Date: 1/28/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 1/28/2011
Project: Hazardous Materials Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4197138	Description / Location:	Tan/White Ceiling Tile	
Client No.:	A51		#41 Bsmt Foyer	
% Asbestos	Type	% Non-Asbestos Fibrous Material	Type	% Non-Fibrous Material
None Detected	None Detected	80	Cellulose	20

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: J. Haremza

Date: 1/28/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/9/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 114197939F	Description / Location: Tan Vermiculite Insulation - Floats			
Client No.: A58	#41; Attic			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100%

Analysis by EPA-600/R-04/004.

Lab No.: 114197939S	Description / Location: Tan Vermiculite Insulation - Sinks			
Client No.: A58	#41; Attic			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
0.24%	Actinolite	None Detected	None Detected	99.76%

Analysis by EPA-600/R-04/004.

Lab No.: 114197969F	Description / Location: Brown Vermiculite Insulation - Floats			
Client No.: A88	#41; Attic			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	Trace	Cellulose	100%

Analysis by EPA-600/R-04/004.

Lab No.: 114197969S	Description / Location: Brown Vermiculite Insulation - Sinks			
Client No.: A88	#41; Attic			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
0.57%	Actinolite	Trace	Cellulose	99.43%

Analysis by EPA-600/R-04/004.

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: L. Solebello

Approved By: 

Date: 2/9/2011

Frank E. Ehrenfeld, III
 Laboratory Director



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/9/2011
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 114197970F	Description / Location: Brown Vermiculite Insulation - Floats			
Client No.: A89	#41; Attic			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100%

Analysis by EPA-600/R-04/004.

Lab No.: 114197970S	Description / Location: Brown Vermiculite Insulation - Sinks			
Client No.: A89	#41; Attic			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
0.30%	Actinolite	Trace	Cellulose	99.7%

Analysis by EPA-600/R-04/004.

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: L. Solebello

Date: 2/9/2011



9000 Commerce Parkway, Suite B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client:	Ballast Enviro. Conslt'g Ltd. PO Box87073 RPO DouglasSq. Calgary AB T2Z 3V7	Report Date:	2/1/2011
		Report Number:	0311001876
		Project:	Hazardous Mat'l's Assessment
		Project No.:	11166L

LEAD PAINT SAMPLE ANALYSIS SUMMARY

<u>Lab No.</u>	<u>Client No.</u>	<u>Location / Description</u>	<u>Concentration Lead By Weight (%)</u>
114197123	A9	White Paint #21; N. Stairwell	0.023***
114197124	P2	Green Paint #21; 113 Janitor Closet	0.21
114197125	P3	White On Dk. Green Paint #21; 116 Wall	0.063
114197126	P4	Purple On White Paint #21; 118 Wall	0.085
114197127	P5	Brown Paint #21; Electric Room	0.26***
114197128	A24	Sample Not Analyzed Tested Positive For Asbestos	NotAnlyz'd
114197129	A25	Sample Not Analyzed Tested Positive For Asbestos	NotAnlyz'd
114197130	P8	Pink Over Yellow Paint #53; AV Room	0.35***
114197131	P9	White Paint #53; Gym	<0.0085
114197132	P10	Yellow Over Green Paint #53; Corridor 5	0.14***

NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)

AIHA No. 100188 / NYSDOH-ELAP No. 11021

Analysis Methods: ASTM D3335-85A "Standard Method To Test For Low Concentrations Of Lead In Paint By Atomic Absorption Spectrophotometry"
 EPA SW846-(7420/7421) "Standard Method To Test For Low Concentrations Of Lead In Soils, Sludges and Sediments By AAS"

Comments: Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation. All results are based on the samples as received at the lab. IATL assumes that appropriate sampling methods have been used and the data upon which these results are based have been accurately supplied by the client. Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies. LSD=0.2 ppm MDL=0.0024% by weight. RL= 0.010% by weight (based upon 100 mg sampled). * Insufficient sample provided to perform QC reanalysis (<200 mg) ** Not enough sample provided to analyze (<50 mg) *** Matrix / substrate interference possible. Sample results are not corrected for contamination by field or analytical blanks. This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any government agency. This report shall not be

Date Received: 1/25/2011
Date Analyzed: 2/1/2011
Analyst: C. Shaffer

Approved By:

Frank E. Ehrenfeld, III
 Laboratory Director



9000 Commerce Parkway, Suite B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client:	Ballast Enviro. Conslt'g Ltd. PO Box87073 RPO DouglasSq. Calgary AB T2Z 3V7	Report Date:	2/1/2011
		Report Number:	0311001876
		Project:	Hazardous Mat'l's Assessment
		Project No.:	11166L

LEAD PAINT SAMPLE ANALYSIS SUMMARY

<u>Lab No.</u>	<u>Client No.</u>	<u>Location / Description</u>	<u>Concentration Lead By Weight (%)</u>
114197133	P11	White Paint #21; Exteror Window Frame-Admin.	0.95
114197134	P13	Dk. Green Paint #2; Exterior Trim	5.7
114197135	P14	Green Paint #2A; Interior Trim	<0.0075***
114197136	P15	Grey Paint #41; Bsmt. Floor	Void**
114197137	A50	White Paint #41; Bsmt. Foyer Ceiling	<0.0092***
114197138	A51	White Paint #41; Bsmt. Foyer Ceiling	<0.0091***
114197139	P16	White Paint #38A; Garage	0.35
114197140	P17	White Paint #41A; Shed	2.5
114197141	P18	Green Paint #2; Bsmt. Stairs	0.2***
114197142	P19	White Paint #2; Interior Of Bsmt.	0.16

NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)

AIHA No. 100188 / NYSDOH-ELAP No. 11021

Analysis Methods: ASTM D3335-85A "Standard Method To Test For Low Concentrations Of Lead In Paint By Atomic Absorption Spectrophotometry"
 EPA SW846-(7420/7421) "Standard Method To Test For Low Concentrations Of Lead In Soils, Sludges and Sediments By AAS"

Comments: Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation. All results are based on the samples as received at the lab. IATL assumes that appropriate sampling methods have been used and the data upon which these results are based have been accurately supplied by the client. Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies. LSD=0.2 ppm MDL=0.0024% by weight. RL= 0.010% by weight (based upon 100 mg sampled). * Insufficient sample provided to perform QC reanalysis (<200 mg) ** Not enough sample provided to analyze (<50 mg) *** Matrix / substrate interference possible. Sample results are not corrected for contamination by field or analytical blanks. This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any government agency. This report shall not be

Date Received: 1/25/2011
Date Analyzed: 2/1/2011
Analyst: C. Shaffer



9000 Commerce Parkway, Suite B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client:	Ballast Enviro. Conslt'g Ltd. PO Box87073 RPO DouglasSq. Calgary AB T2Z 3V7	Report Date:	2/1/2011
		Report Number:	0311001876
		Project:	Hazardous Mat'l's Assessment
		Project No.:	11166L

LEAD PAINT SAMPLE ANALYSIS SUMMARY

<u>Lab No.</u>	<u>Client No.</u>	<u>Location / Description</u>	<u>Concentration Lead By Weight (%)</u>
114197143	P20	White Paint #2; Exterior	<0.0093
114197144	P21	White Paint #38A; Exterior	1.5***
114197145	P22	Grey Paint #38A; Floor	0.0059***
114197146	P23	White Paint #38A; Walls	<0.0074***
114197147	P24	White Paint #38A; Pump House	0.87
114197148	P25	Brown Paint #40; Interior Walls	<0.0083***
114197149	P26	White Paint #40; Interior Walls	0.073***
114197150	P27	Green Paint #42B; Exterior Doors	0.4***
114197151	P28	White Paint #54; Exterior	0.072
114197152	P29	White Paint #54; Interior	0.75

NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)

AIHA No. 100188 / NYSDOH-ELAP No. 11021

Analysis Methods: ASTM D3335-85A "Standard Method To Test For Low Concentrations Of Lead In Paint By Atomic Absorption Spectrophotometry"
 EPA SW846-(7420/7421) "Standard Method To Test For Low Concentrations Of Lead In Soils, Sludges and Sediments By AAS"

Comments: Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation. All results are based on the samples as received at the lab. IATL assumes that appropriate sampling methods have been used and the data upon which these results are based have been accurately supplied by the client. Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies. LSD=0.2 ppm MDL=0.0024% by weight. RL= 0.010% by weight (based upon 100 mg sampled). * Insufficient sample provided to perform QC reanalysis (<200 mg) ** Not enough sample provided to analyze (<50 mg) *** Matrix / substrate interference possible. Sample results are not corrected for contamination by field or analytical blanks. This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any government agency. This report shall not be

Date Received: 1/25/2011
Date Analyzed: 2/1/2011
Analyst: C. Shaffer



9000 Commerce Parkway, Suite B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/1/2011
Report Number: 0311001876
Project: Hazardous Mat'l's Assessment
Project No.: 11166L

LEAD PAINT SAMPLE ANALYSIS SUMMARY

<u>Lab No.</u>	<u>Client No.</u>	<u>Location / Description</u>	<u>Concentration Lead By Weight (%)</u>
114197153	P30	Red Paint #10; Interior Of Barn	0.093***
114197154	P31	White Paint #10; Exterior Of Barn	1.9***
114197155	P32	Yellow Paint #52; Shelves In Tool Room	0.027***
114197156	P33	Grey Paint #52; Work Bench, E. Bay	0.093***
114197157	DP1	White Paint	<0.0067
114197158	DP3	White Paint	0.54
114197159	DP5	White Paint	1.2

NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)

AIHA No. 100188 / NYSDOH-ELAP No. 11021

Analysis Methods: ASTM D3335-85A "Standard Method To Test For Low Concentrations Of Lead In Paint By Atomic Absorption Spectrophotometry"
 EPA SW846-(7420/7421) "Standard Method To Test For Low Concentrations Of Lead In Soils, Sludges and Sediments By AAS"

Comments: Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation. All results are based on the samples as received at the lab. IATL assumes that appropriate sampling methods have been used and the data upon which these results are based have been accurately supplied by the client. Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies. LSD=0.2 ppm MDL=0.0024% by weight. RL= 0.010% by weight (based upon 100 mg sampled). * Insufficient sample provided to perform QC reanalysis (<200 mg) ** Not enough sample provided to analyze (<50 mg) *** Matrix / substrate interference possible. Sample results are not corrected for contamination by field or analytical blanks. This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any government agency. This report shall not be

Date Received: 1/25/2011
Date Analyzed: 2/1/2011
Analyst: C. Shaffer

International Asbestos Testing Laboratories
 9000 Commerce Parkway, Suite B
 Mt. Laurel, New Jersey 08054
 Attn: Ray Sankey

Tel. 856 231-9449
 Fax 856 231-9818

- Chain of Custody -

Client: Ballast Environmental Consulting Ltd.
PO Box 87073 RPO Douglas SQ
Calgary, AB Canada T2Z 3V7

Project Name: Hazardous Materials Assessment
Project No.: 11166L

Phone: 403-452-3110
FAX: 403-452-3133

Contact: Elvie Reinson
Pager: Cell: 403-860-8524

Special Instructions: _____

Type:

<u>Asbestos</u>		<u>Lead</u>		<u>Other</u>	
<input type="checkbox"/> Air	<input type="checkbox"/> Soil	<input type="checkbox"/> Air	<input type="checkbox"/> Soil	_____	_____
<input type="checkbox"/> Bulk	<input type="checkbox"/> Dust	<input type="checkbox"/> Bulk	<input checked="" type="checkbox"/> Paint	_____	_____
<input type="checkbox"/> Water	<input type="checkbox"/> Other	<input type="checkbox"/> Water	<input type="checkbox"/> Other	_____	_____

Analysis Method:

<input type="checkbox"/> PCM : NIOSH 7400	<input type="checkbox"/> PLM : Bulk Asbestos EPA 600	<input type="checkbox"/> TEM : AHERA
<input type="checkbox"/> PCM : OSHA	<input type="checkbox"/> PLM : Point Counting 198.1	<input type="checkbox"/> TEM : NIOSH 7402
<input type="checkbox"/> PCM : Other _____	<input type="checkbox"/> PLM : NOE via 198.1 (PLM only)	<input type="checkbox"/> TEM : EPA Level II
<input type="checkbox"/> AAS : NIOSH 7082 (Air)	<input type="checkbox"/> If <1% by PLM, to TEM via 198.4 to meet NYSDOH requirements **	<input type="checkbox"/> TEM : Microvac / Wipe
<input type="checkbox"/> AAS : Lead in Drinking Water	(**call to confirm TAT!)	<input type="checkbox"/> TEM : Asbestos in Water
<input checked="" type="checkbox"/> AAS : Lead in Paint ASTM D3335-85a		<input type="checkbox"/> TEM : Bulk Analysis
<input type="checkbox"/> AAS : Lead Dust/Wipe		<input type="checkbox"/> TEM : NOB 198.4
<input type="checkbox"/> AAS : Other Metals / Soil		<input type="checkbox"/> TEM : Other _____
		<input type="checkbox"/> Total Dust : NIOSH 0500

Turnaround Time: email results **FAX:** _____ **Verbals:** _____
elvie@ballastenvironmental.com date / time date / time

10 Day 5 Day 3 Day 2 Day 1 Day 6 hour RUSH
 Preliminary FAX/Verbal Results Requested by:

DP1, DP3, DP5,

Sample Numbers: Client #(s): P2 - P5 IATL#(s): _____ Total: 357
(start) (end) (start) (end)
P8 - P11

Chain of Custody: P13 - P33
A50, A51, A9, A24, A25 (see attached)

Relinquished: <u>Elvie Reinson</u>	Date: <u>Jan 21/11</u>	Time: _____
Received: _____	Date: _____	Time: _____
Sample Log-in: <u>11/23/11</u>	Date: _____	Time: _____
Sample Prep: _____	Date: _____	Time: _____
Analyzed: _____	Date: _____	Time: _____
QA/QC Review: _____	Date: <u>JAN 25 2011</u>	Time: _____

Archived/Released: _____ QA/QC InterLAB Use: _____

IATL - By _____ Date: _____ Time: _____



LEAD

BULK MATERIAL SAMPLING LOG

Worksite: LRC Date: Jan 18/11
 Client: PWGSC Job No.: 11166
 Date Results Required: _____ No. Samples: 32 total Page 1 of 3

TESTING FOR VOLATILE ORGANIC COMPOUNDS (VOC) AND LEAD

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A9	white	Paint	#21 N stairwell	good	4197123	972
P2	green	"	#21 113 Janitor closet	Poor	4197124	1x2m 974
P3	white on dark green	"	#21 116 wall	good	4197125	window sills 983
P4	Purple on white	"	#21 118 wall	poor	4197126	981
P5	Brown	"	#21 Electric Room	Fair	4197127	3x5m 0002
A24	Pink/Brown	"	#53 Boiler Room	good	4197128	
A25	Brown	"	#53 "	"	4197129	
P8	Pink over yellow	"	#53 AV Room	"	4197130	
P9	white	"	#53 gym	Poor	4197131	
P10	Yellow over green	"	#53 Corridor 5	Fair	4197132	
P11	white	"	#21 exterior window frame - admin	Poor	4197133	Window frames 004
P13	dark green	"	#2 exterior trim	Poor	4197134	all trim 0943
P14	green	"	#2A interior trim	Poor	4197135	" 0944
P15	gray	"	#41 Bsm't floor	"	4197136	1/2 Bsm't 0880



LEAD

BULK MATERIAL SAMPLING LOG

Worksite: L RC

Date: Jan 18/11

Client: PWGSC

Job No.: 11166

Date Results Required: _____

No. Samples: _____

Page 2 of 3

Test 1 or 2 samples by fast.

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A50	white	Paint	#41 BSmt fayer ceiling	Fair 4197137	1/2 7 BSmt	0878
A51		add samples	together to get	enough sample 4197138		
P16	white	Paint	#38A Garage	Poor 4197139	garage + shed	0902
P17	"	"	#41A Shed	" 4197140	Shed	0903
P18	green	"	#2 BSmt Stairs	Okay 4197141	stairs + support	0914
P19	white	"	#2 interior of BSmt	good 4197142	through out house	0927
P20	white	"	#2 exterior	Okay 4197143	entire exterior	0947
P21	"	"	#38A exterior	Poor 4197144	"	90013
P22	gray	"	#38A floor	Fair 4197145	entire 5 floor	90025
P23	white	"	#38A walls	good 4197146	walls + ceiling	90026
P24	"	"	#38A Pump house	Poor 4197147	exterior walls	90045
P25	Brown	"	#40 interior walls	" 4197148	1/2 walls (all)	9056
P26	white	"	#40 "	" 4197149	1/2 walls + ceiling	9064
P27	green	"	#42B exterior doors	" 4197150	14 sets of doors	9090

Name: Ballast Environmental Cons. Ltd. Address: PO Box 87073 RPO Douglas SQ Calgary AB T2Z 3V7 Contact: Elvie Reinson Phone: (403) 452-3110 Fax: (403) 452-3133	Workorder: 32273 COC: 43740 Project: 11166L Legal Desc: L.R.C. Date Received: Jan 21, 2011 Date Reported: Feb 1, 2011 Samples: 1 Wood
--	--

Semivolatile Organics By GC-MS - Wood*

Lab #:	32273-01		
Date Sampled:	Jan 18, 2011		
	Detection Limit	Units	Dry Cow Feed Lot 42b
PHENOLS			
Cresols	2	mg/kg	72
2-methylphenol	2.3	mg/kg	20
3 & 4-methylphenol	2.3	mg/kg	52

*analysis performed by Maxxam Analytics in Calgary

Access Analytical Laboratories Inc.

Per: *Bob Corbet*
 Bob Corbet, M.Sc., P.Chem.
 Manager, Technical Services

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result	
1: Administration Office	Bsmt	Basement Office	office	drywall	drywall	linoleum	-	blue	blue	blue speckle	-	-	-	-	blue	P11	office	Negative	
												blue drywall mud	A35	ceiling	-	-	-	Negative	
												blue speckle linoleum	A36	floor at drain	-	-	-	Negative	
1: Administration Office	Bsmt	Main Computer Room	computer room	drywall	drywall	linoleum	-	blue	blue	blue speckle	-	-	-	-	-	-	-	-	-
1: Administration Office	Bsmt	Hallway	hallway	drywall	drywall/cement	carpet/9x9 floor tile/linoleum	smoke detector; 9m pipe insulation	white	white	light brown	-	-	-	-	white	P12	hall	Negative	
												white drywall mud	A37	hall	-	-	-	Positive	
												brown with white 9x9 floor tile	A41	hall floor	-	-	-	Positive	
												brown with white 9x9 floor tile	A75	hall floor	-	-	-	Positive	
1: Administration Office	Bsmt	Library	library	ceiling tile	wall wood board	carpet on cement	-	white	beige	-	12x12 grid and 12x12 holes	white pipe wrap	A38	pipe wrap	-	-	-	Negative	
												white 12x12 holes ceiling tile	A39	ceiling	-	-	-	Negative	
												white 12x12 grid ceiling tile	A40	ceiling	-	-	-	Negative	
												white 12x12 grid ceiling tile	A73	west ceiling	-	-	-	Negative	
												white 12x12 grid ceiling tile	A74	NE corner	-	-	-	Negative	
1: Administration Office	Bsmt	Library Closet	closet	drywall	plywood/drywall	cement	-	white	wood	red	-	-	-	-	-	-	-	-	
1: Administration Office	Bsmt	Mens Washroom	washroom	drywall	drywall	linoleum	-	white	beige	new	-	-	-	-	-	-	-	-	
1: Administration Office	Bsmt	Furnace Room	furnace	drywall	brick/ cement	cement	-	bare	yellow	gray	-	-	-	-	yellow	P13	furnace room	Negative	
												white drywall mud	A42	wall	-	-	-	Positive	
												yellow insulating board	A43	make-up air duct	-	-	-	Negative	
												silver sink insulation	A44	sink	-	-	-	Negative	
1: Administration Office	Bsmt	Vault	vault	cement brick	cement brick	cement	-	white	white	red	-	-	-	-	-	-	-	-	
1: Administration Office	Bsmt	Dark Room	dark room	fibre board	cement brick/fibre board	rubber mat on cement	ACM sink	black on green	black on green	black mat/red cement	-	-	-	-	black	P14	dark room	Positive	
												silver sink insulation	A46	sink	-	-	-	Positive	
												black fibre board	A47	wall	-	-	-	Negative	

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
1: Administration Office	Bsmt	Storage	storage	ceiling tile	drywall/ cement	linoleum on cement	-	white	white	blue speckle	12x12 holes	white 12x12 holes ceiling tile	A45	ceiling	-	-	-	Negative
												blue speckle linoleum	A48	floor	-	-	-	-
1: Administration Office	Bsmt	Womens Washroom	washroom	drywall	drywall	newer linoleum	-	white	beige	-	-	-	-	-	-	-	-	-
1: Administration Office	Bsmt	Conference Room	conference room	ceiling tile	drywall/ cement pillars	linoleum	9 m pipe insulation; 6 elbows	white	white	square pattern light coloured	12x12 holes	brown square linoleum	A49	floor	-	-	-	Positive
												white 12x12 holes ceiling tile	A50	ceiling	-	-	-	Negative
												white drywall mud	A51	SW corner wall	-	-	-	Positive
1: Administration Office	Bsmt	Kitchen	kitchen	drywall	drywall	linoleum	fridge; sink with ACM coating	white	white	square pattern light coloured	-	white drywall mud	A52	wall	-	-	-	Positive
												bronze sink insulation	A53	sink insulation	-	-	-	Positive
1: Administration Office	Bsmt	West Stairwell	stairwell	drywall	drywall	carpet	emergency lights	white	light green on white	-	-	-	-	-	-	-	-	-
1: Administration Office	Bsmt	Under West Stairwell	storage	wood	drywall	cement	-	wood	blue	-	-	-	-	-	blue	P15	under stairs	Negative
1: Administration Office	Main	Hall	hallway	ceiling tile	plaster wall	carpet	radioactive smoke detector	white	green	-	12x12 holes	white 12x12 holes ceiling tile	A55	ceiling (middle)	-	-	-	Negative
												white ceiling texture	A60	ceiling	-	-	-	Positive
												white ceiling texture	A61	ceiling at east stairs	-	-	-	Positive
1: Administration Office	Main	Storage East	storage	ceiling tile	plaster wall	linoleum on wood	mini fridge ODS- R12	white	beige	square pattern light coloured	12x12 holes	brown square linoleum	A56	floor	-	-	-	Positive
1: Administration Office	Main	Storage West	storage	ceiling tile	plaster wall	linoleum on wood	-	white	beige	square pattern light coloured	12x12 holes	-	-	-	-	-	-	-
1: Administration Office	Main	Reception	reception room	ceiling tile	plaster wall	wood	-	white	green	wood	12x12 holes	-	-	-	white	P18	ceiling	Negative
												white 12x12 holes ceiling tile	A64	north ceiling	-	-	-	Negative
1: Administration Office	Main	Reception Closet	closet	drywall	plaster wall	carpet on wood	-	blue	blue	-	-	green drywall mud	A58	wall	-	-	-	Negative
1: Administration Office	Main	Office 6	office	ceiling tile	drywall	carpet	-	white	beige	-	12x12 holes	white 12x12 holes ceiling tile	A57	SE corner	-	-	-	Negative
1: Administration Office	Main	Office 5	office	ceiling tile	plaster wall	carpet	-	white	beige	-	12x12 holes	white 12x12 holes ceiling tile	A63	SW corner ceiling	-	-	-	Negative
1: Administration Office	Main	Office 4	office	ceiling tile	plaster wall	wood	-	white	beige	-	12x12 holes	-	-	-	-	-	-	-

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
1: Administration Office	Main	Office 3	office	textured	plaster wall	hardwood	-	white	pink	-	-	white ceiling texture	A62	SW corner ceiling	-	-	-	Positive
												pink drywall mud	A65	SW corner wall	-	-	-	Negative
1: Administration Office	Main	Office 2	office	ceiling tile	plaster wall	carpet	-	white	light green	-	12x12 holes	-	-	-	-	-	-	-
1: Administration Office	Main	Office 1	office	ceiling tile/wood board	plaster wall	carpet	-	white/brown	light green	-	12x12 holes	green drywall mud	A59	SW corner wall	-	-	-	Negative
1: Administration Office	Main	Conference Room	conference room	ceiling tile	drywall	carpet	-	white	white	-	12x12 holes	-	-	-	-	-	-	-
1: Administration Office	Main	East Stairwell	stairwell	drywall	plaster wall/drywall	new linoleum/carpet	radioactive smoke detector; emergency light; shoe rack with old linoleum	white	green/white	-	-	brown linoleum	A33	shoe rack	-	-	-	Positive
												white drywall mud	A34	basement stairwell	-	-	-	Negative
1: Administration Office	2nd Floor	Office 28	office	plaster wall	plaster wall	carpet	-	white	green	-	-	-	-	-	-	-	-	-
1: Administration Office	2nd Floor	Office 26	office	plaster-wall	plaster wall	carpet	-	white	light green	-	-	-	-	-	-	-	-	-
1: Administration Office	2nd Floor	Office 24	office	plaster-wall	plaster wall	carpet	-	white	yellow	-	-	-	-	-	-	-	-	-
1: Administration Office	2nd Floor	Office 22	office	plaster-wall	plaster wall	carpet	-	white	light blue	-	-	-	-	-	-	-	-	-
1: Administration Office	2nd Floor	Office 27	office	plaster-wall	plaster wall	hardwood	-	white	light green	wood	-	-	-	-	-	-	-	-
1: Administration Office	2nd Floor	Office 25	office	plaster-wall	plaster wall	carpet	-	white	white	-	-	-	-	-	white	P16	window frame	Negative
												white drywall mud	A67	south wall	-	-	-	Negative
1: Administration Office	2nd Floor	Office 23	office	plaster-wall	plaster wall	carpet	-	white	yellow	-	-	-	-	-	-	-	-	-
1: Administration Office	2nd Floor	Office 21	office	drywall	drywall	carpet	-	white	dark green	-	-	-	-	-	-	-	-	-
1: Administration Office	2nd Floor	Hall	hallway	plaster-wall	plaster wall/drywall	carpet	radioactive smoke detector	white	white	-	-	white drywall mud	A66	attic access	-	-	-	Negative
												brown insulating paper	A69	attic access	-	-	-	Negative
1: Administration Office	2nd Floor	Office 20	office	drywall	drywall	linoleum	-	white	white	square pattern light coloured	-	white drywall mud	A68	NW corner	-	-	-	Positive
1: Administration Office	2nd Floor	Office 18	office	drywall	drywall	linoleum	-	white	white	square pattern light coloured	-	-	-	-	-	-	-	-

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
1: Administration Office	2nd Floor	Office 19	office	drywall	drywall	carpet	-	white	light green	-	-	-	-	-	-	-	-	-
1: Administration Office	2nd Floor	Office 17	office	drywall	drywall	carpet	-	white	white	-	-	-	-	-	-	-	-	-
1: Administration Office	2nd Floor	Office 15	office	ceiling tile	drywall	carpet	-	white	white	-	-	-	-	-	-	-	-	-
1: Administration Office	Exterior	Exterior	exterior	-	stucco; wood doors and trim	-	2 HID lights	-	white; brown	-	-	-	-	-	white	P17	south window	Positive
												multi-coloured stucco	A70	main entrance	-	-	-	Positive
												multi-coloured stucco	A71	main entrance	-	-	-	Positive
												multi-coloured stucco	A72	main entrance	-	-	-	Positive
												gray cement	A76	NE corner	-	-	-	Negative
gray cement	A77	N wall	-	-	-	Negative												
10: Canola Laboratory	Attic	Attic	attic	-	-	foil/yellow fiberglass/ recycled spray in paper	-	-	-	-	-	-	-	-	-	-	-	-
10: Canola Laboratory	2nd Floor	Office 1	office	drywall	drywall	linoleum	8' fluorescent	white	white	gray squares	-	brown fibre board	A93	bulletin board	-	-	-	Negative
10: Canola Laboratory	2nd Floor	Office 10	office	drywall	drywall	linoleum	Closet has hole in it for fume hood; 8' fluorescent 2 fridges; 2 ODS-R12	white	white	gray squares	-	brown streak tile	A94	floor	-	-	-	Negative
10: Canola Laboratory	2nd Floor	Office 2	office	drywall	drywall	linoleum	8' fluorescent	white	white	gray squares	-	-	-	-	-	-	-	-
10: Canola Laboratory	2nd Floor	Office 9	office	drywall	drywall	linoleum	8' fluorescent	white	white	gray squares	-	-	-	-	-	-	-	-
10: Canola Laboratory	2nd Floor	Storage	storage	drywall	drywall	linoleum	-	light green	light green	gray squares	-	-	-	-	green paint	P21	wall	Negative
												white drywall mud	A128	closet wall	-	-	-	Positive
10: Canola Laboratory	2nd Floor	Room 8	storage	drywall	drywall	floor tile	Incandescent light with suspect backing	green	green	brown streak	-	brown streak tile	A95	floor	-	-	-	Negative
10: Canola Laboratory	2nd Floor	Office 3	office	drywall	drywall	linoleum	8' fluorescent	blue	white	gray squares	-	-	-	-	-	-	-	-
10: Canola Laboratory	2nd Floor	Office 4	office	drywall	drywall	linoleum	Incandescent Light with suspect backing	green	white	gray squares	-	black/silver light insulation	A96	light fixture backing	-	-	-	Positive
10: Canola Laboratory	2nd Floor	Janitor Closet	Closet	drywall	drywall	linoleum	general cleaners	white	white on yellow	gray squares	-	-	-	-	white/yellow paint	P22	wall	Negative
												white drywall mud	A127	closet wall	-	-	-	***
10: Canola Laboratory	2nd Floor	Washroom Hall	hallway	drywall	wood paneling	linoleum	-	white	white	off-white	-	-	-	-	-	-	-	-

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
10: Canola Laboratory	2nd Floor	Washroom 1	washroom	drywall	wood paneling	linoleum	fluorescent; general cleaner under sinks; sunken floor	white	white	off-white	-	white/rose linoleum	A97	floor	-	-	-	Negative
10: Canola Laboratory	2nd Floor	Washroom 2	washroom	drywall	wood paneling	linoleum	fluorescent; general cleaner under sinks; sunken floor	white	white	off-white	-	-	-	-	-	-	-	-
10: Canola Laboratory	2nd Floor	Office 5	office	drywall	drywall	12x12 floor tile	1 fluorescent light and 3 more on shelf	blue	blue	brown	-	-	-	-	blue paint	P24	wall	Negative
												brown 12x12 floor tile	A98	floor	-	-	-	Positive
10: Canola Laboratory	2nd Floor	Office 6	office	drywall	drywall	linoleum	8' fluorescent	white	white	gray squares	-	white drywall mud	A126	closet wall	-	-	-	Positive
10: Canola Laboratory	2nd Floor	Office 7	office	drywall	drywall	linoleum	8' fluorescent; closet blue paint	white	white	gray squares	-	-	-	-	white	P23	closet door	Negative
10: Canola Laboratory	2nd Floor	Hall	hallway	ceiling tile	drywall/wallpaper	linoleum	2 incandescent lights with backing	white	white/white (yellow doors)	gray squares	12x12 grid	white 12x12 grid ceiling tile	A99	middle	-	-	-	Negative
												white 12x12 grid ceiling tile	A100	NE corner	-	-	-	Negative
10: Canola Laboratory	2nd Floor	Stairwell	stairwell	ceiling tile	drywall/wallpaper	linoleum	Incandescent light with backing	white	white/white	gray squares	12x12 grid	white drywall mud	A129	wall	-	-	-	Negative
10: Canola Laboratory	Main	Hall	hallway	ceiling tile	drywall/wallpaper	linoleum	Incandescent light with backing; fluorescent light; thermostat; two ODS-R12	white	yellow/white	gray squares	12x12 grid	brown/black wall tile	A103	hall	-	-	-	Negative
												white fibre board	A104	bulletin board	-	-	-	Negative
10: Canola Laboratory	Main	Breaker box room	utility room	ceiling tile	drywall	linoleum	Incandescent Light with backing; 2 incubators	white	white	gray squares	12x12 grid	white 12x12 grid ceiling tile	A101	breaker box	-	-	-	Negative
10: Canola Laboratory	Main	Storage room	storage	drywall	drywall/wall board/ceramic tiles	linoleum	storage cabinet for chemicals; incubator; ODS-R12	white	purple	gray squares	-	-	-	-	purple paint	P26	wall	Negative
												silver/black light insulation	A102	ceiling	-	-	-	Positive
10: Canola Laboratory	Main	Lab NE	lab	ceiling tile/wood panel	drywall	linoleum	chemicals; two 8' fluorescent; freezer	white	white over blue	gray squares	12x12 grid	-	-	-	-	-	-	-
10: Canola Laboratory	Main	Lab SE	lab	ceiling tile	drywall	linoleum	three 8' fluorescent; two old lights	white	white	gray squares	12x12 grid	white 12x12 grid ceiling tile	A106	east wall	-	-	-	Negative
10: Canola Laboratory	Main	Lab SW	lab	ceiling tile	drywall/wall tile	linoleum	four 8' fluorescent and three old fluorescent lights	white	white	gray squares	12x12 grid	white 12x12 grid ceiling tile	A105	ceiling	-	-	-	Negative
												gray wall tile	A107	wall	-	-	-	Negative
												green floor tile	A108	between SW and NW lab	-	-	-	Negative
10: Canola Laboratory	Main	Lab NW	lab (old kitchen)	ceiling tile	drywall/ceramic tile/concrete backsplash	linoleum	fume hood with board	white	white	gray squares	12x12 grid	gray cement board	A109	fume hood	-	-	-	Negative
												gray cement board	A110	sink backsplash	-	-	-	Negative

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
10: Canola Laboratory	Main	NE Entry	hallway	drywall	drywall/ compressed fibre board	linoleum	-	white	white	gray squares	-	brown fibre board	A111	stairwell board	-	-	-	Negative
10: Canola Laboratory	Main	NW Entry	hallway	ceiling tile	drywall; stair runners	linoleum	-	white; upper stair runner yellow tile; lower	yellow-off white	upper blue; stair tops vinyl tile	12x12 grid	yellow floor tile	A112	floor	-	-	-	Negative
												multi-brown floor tile	A113	stair runner down	-	-	-	Negative
												white drywall mud	A130	wall	-	-	-	Negative
10: Canola Laboratory	Main	Lab W-N	lab	ceiling tile	drywall	linoleum	fridge; two sinks	white	white	new blue	12x12 grid	-	-	-	-	-	-	-
10: Canola Laboratory	Main	Lab W-S	lab	ceiling tile	drywall	linoleum	one 8' fluorescent	white	white	new blue	12x12 grid	-	-	-	-	-	-	-
10: Canola Laboratory	Bsmt	Storage 7	storage	drywall	drywall	9x9 floor tile	hole in ceiling - fibreglass yellow insulation; one 8' fluorescent	blue	blue	light brown and dark brown	-	-	-	-	light blue paint	P28	wall	Negative
												light brown 9x9 floor tile	A114	floor	-	-	-	Positive
												dark brown 9x9 floor tile	A115	floor	-	-	-	Positive
												white drywall mud	A124	closet wall	-	-	-	Negative
10: Canola Laboratory	Bsmt	Storage 6	storage	drywall	drywall	9x9 floor tile	hole in ceiling - fibreglass yellow insulation; one 8' fluorescent; 10" aerocell pipe	blue	blue	light brown and dark brown	-	-	-	-	light green paint	P27	closet wall	Negative
												white aerocell insulation	A120	pipe wrap	-	-	-	Positive
												white drywall mud	A123	wall	-	-	-	Negative
10: Canola Laboratory	Bsmt	Storage 8	under stairwell storage	stairs	cinderblock east wall; concrete north wall;	cork tile on top of concrete; 9x9 floor tile	-	-	-	light brown and dark brown	-	black caulking	A118	around wiring	-	-	-	Positive
												gray caulking	A119	around light	-	-	-	Positive
10: Canola Laboratory	Bsmt	Storage 5	cooler	plywood	plywood	concrete	caulking around piping and lights; cork insulation	wood	wood	gray	-	-	-	-	-	-	-	-
10: Canola Laboratory	Bsmt	Storage 4	cooler	wood plank	wood plank (silver foil between walls)	concrete floor	mould growth and water damage; aiocell insulated pipe	white	white	gray	-	-	-	-	-	-	-	-
10: Canola Laboratory	Bsmt	Furnace Room	furnace room	-	cinderblock walls	bare concrete floor	gaskets; boiler with insulation	-	-	gray	-	white furnace insulation	A121	top corner of insulation	-	-	-	Positive
10: Canola Laboratory	Bsmt	Storage 3	cooler	plywood	plywood/ west wall wood plank	concrete	screen to crawl space	white	white	gray	-	-	-	-	-	-	-	-
10: Canola Laboratory	Bsmt	Storage 11	storage	-	cinderblock/ concrete/ wood planks	concrete	-	-	-	-	-	-	-	-	-	-	-	-
10: Canola Laboratory	Bsmt	Storage 2	storage	plywood	plywood	concrete	-	white	white	gray	-	-	-	-	white/ yellow paint	P29	wall	Positive
10: Canola Laboratory	Bsmt	Storage 1	storage	plywood	plywood	concrete	fume hood; two 8' fluorescent; one old fluorescent	white	white	gray	-	-	-	-	-	-	-	-

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
10: Canola Laboratory	Bsmt	Storage 9	storage	plywood	plywood	floor levelling compound	shelves and pipes (no insulation)	white	white	gray	-	grey/green floor levelling compound	A122	center of floor	-	-	-	Negative
10: Canola Laboratory	Bsmt	Storage 10	storage	wood	concrete	floor levelling compound	well; old wiring	-	-	gray	-	-	-	-	-	-	-	-
10: Canola Laboratory	Bsmt	Laundry	laundry	plywood	plywood	concrete	pipe with no insulation	-	-	-	-	-	-	-	-	-	-	-
10: Canola Laboratory	Bsmt	Hall	hallway	-	plywood	concrete	-	-	white	gray	-	-	-	-	white paint	P30	wall	Negative
												white drywall mud	A125	wall	-	-	-	Negative
10: Canola Laboratory	Exterior	Exterior	exterior	-	stucco with parchent on concrete; white frames	-	-	-	-	-	-	-	-	-	white paint	P31	Main entrance trim	Positive
												white/gray stucco/cement	A131	N wall entrance	-	-	-	Negative
												white/gray stucco/cement	A132	S main entrance	-	-	-	Negative
												white/gray stucco/cement	A133	NW corner	-	-	-	Negative
												black tar paper	A134	N wall entrance	-	-	-	Negative
14: Soils Research Building	Main	Entry	hallway	ceiling tile on fibre board	wood paneling	linoleum/floor tile/cement	fire alarm control; cryogenic freezer	white	wood; frames peach/white	floor square/gray floor tile	12x12 ceiling flat tiles	-	-	-	peach paint	P32	frames at entry	Negative
												gray 12x12 floor tile	A135	entry under linoleum	-	-	-	Positive
												white 12x12 ceiling tile	A136	ceiling	-	-	-	Negative
14: Soils Research Building	Main	Porch	porch	panel board	panel board/stucco	9x9 floor tile	pink fibreglass insulation in walls and ceiling	wood	wood/white frames/wood doors	gray	-	white/gray 9x9 floor tile	A137	porch floor	-	-	-	Negative
												white stucco	A138	porch west building wall	-	-	-	Negative
14: Soils Research Building	Main	SW Lab	lab	ceiling tile/drywall	drywall; N wall wood	9x9 floor tile	two suspect countertops; 2 sinks with insulation; two 8' fluorescent; one 4' fluorescent; chemicals	white	white on yellow	white/gray	12x12 holes	-	-	-	white/yellow paint	P33	wall	Negative
												gray cement board	A139	leaning on wall x 2	-	-	-	Positive
												white drywall mud	A140	SW corner	-	-	-	Negative
												bronze sink insulation	A141	sinks	-	-	-	Positive
												white 12x12 holes ceiling tile	A142	ceiling	-	-	-	Negative
white/gray 9x9 floor tile	A143	floor	-	-	-	Positive												
14: Soils Research Building	Main	Furnace Room	furnace	fibre board	drywall; N wall concrete with parchent	12x12 floor tile on mastic concrete	water damage to ceiling; furnace, hot water, sump	off-white	off-white	gray/blue and black mastic	-	-	-	-	white/yellow paint	P34	wall	Negative
												gray parchent	A144	N wall	-	-	-	Negative
												gray/blue 12x12 floor tile	A145	floor	-	-	-	Negative
												white drywall mud	A146	walls	-	-	-	Positive

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
14: Soils Research Building	Main	Washroom	washroom	ceiling tile spackle	wall board	linoleum	sink; household cleaners under sink; one 4' fluorescent	white	white	floor square	spackle	white sink insulation	A147	sink	-	-	-	Negative
												white spackle ceiling tile	A148	ceiling	-	-	-	Negative
14: Soils Research Building	Main	Storage	vault	concrete with suspect black fabric	concrete	concrete	household chemicals; water inside	white	white	gray	-	black/white fabric	A149	ceiling	-	-	-	Negative
14: Soils Research Building	Main	Hall	hallway	spackle ceiling tile in hall; fibre board in other	panel board in hall; wood in other (fibreglass with foil inside wall)	linoleum	four fluorescent, 1 of which is really old; growth chamber	white	white	brown square	spackle	spackle ceiling tile	A165	ceiling	-	-	-	Sample Not Received
14: Soils Research Building	Main	Under stairs	under stairwell storage	stairs	plywood	9x9 floor tiles on concrete	sump	-	-	light brown and dark brown	-	light brown 9x9 floor tile	A153	floor	-	-	-	Positive
												dark brown 9x9 floor tile	A154	floor	-	-	-	Positive
14: Soils Research Building	Main	Growth Chamber Room	storage	fibre board	plywood; N wall concrete with parchment	9x9 floor tiles on concrete	growth chambers; mercury thermometer; ODS-R12	white	white	light brown and dark brown	-	brown fibre board	A152	ceiling	-	-	-	Negative
14: Soils Research Building	Main	NW Lab	lab	fibre board	drywall; N wall concrete with parchment	9x9 floor tiles on concrete	water damage along pipe on W; laminant countertops board in fume hood, 5 fluorescent, 2 fridge; two ODS-R12	white	white	light brown and dark brown	-	-	-	-	white	P35	wall	Negative
												light brown 9x9 floor tile	A155	floor	-	-	-	Positive
												dark brown 9x9 floor tile	A156	floor	-	-	-	Positive
												gray cement board	A157	fume hood	-	-	-	Negative
												white drywall mud	A158	wall	-	-	-	Positive
white/gray parchment	A159	north wall	-	-	-	Negative												
14: Soils Research Building	Main	NE Lab	lab	flat ceiling tile	N and W walls wall board; others concrete	linoleum on concrete	4 fluorescent lights; 2 cylinders of compressed gas; 3 cell batteries; Atomic Abs. Spectrometer; 4 mini rechargeable batt.; laminate countertops	white	white	brown squares	flat ceiling tile	gray sink insulation	A160	sinks	-	-	-	Positive
												white flat ceiling tile	A161	N ceiling	-	-	-	Negative
												brown square sheet linoleum	A162	W corner	-	-	-	Positive
												white flat ceiling tile	A163	east	-	-	-	Negative
												white flat ceiling tile	A164	south	-	-	-	Negative
14: Soils Research Building	2nd floor	Power Panel Room	utility room	cement board	west wall is wood on cement board	9x9 floor tile over cement board over wood	-	-	-	dark gray	-	gray cement board	A166	wall	-	-	-	Positive
												dark gray 9x9 floor tile	A167	floor	-	-	-	Negative
												dark gray 9x9 floor tile	A168	floor	-	-	-	Positive

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
14: Soils Research Building	2nd floor	Lab 1	lab	ceiling tile	wall board on cement board	linoleum on 9x9 floor tile on cement board	three 8' fluorescent; mercury thermostat	white	white	speckled sheet; white gray	12x12 holes	white 12x12 holes ceiling tile	A169	ceiling	-	-	-	Negative
												white sink insulation	A170	sink	-	-	-	Negative
												white/gray 9x9 floor tile	A171	north wall	-	-	-	Positive
14: Soils Research Building	2nd floor	Lab 2	lab	ceiling tile	wall board on cement board	linoleum on 9x9 floor tile on cement board	fume hood with suspect insulation; battery backup; four 8' fluorescent; five 4' fluorescent; fridge; ODS-R12	white	white	speckled sheet; white gray	12x12 holes (water damage at vents)	-	-	-	white	P36	east window	Positive
												white sink insulation	A172	N sink	-	-	-	Negative
												white 12x12 holes ceiling tile	A173	N ceiling	-	-	-	Negative
												white/gray 9x9 floor tile	A174	NE corner	-	-	-	Negative
14: Soils Research Building	2nd floor	Hall	hallway	ceiling tile	wood paneling	linoleum on 9x9 floor tile on cement board	-	white	white	speckled sheet; white gray	12x12 holes	white/gray 12x12 holes ceiling tile	A175	S wall	-	-	-	Negative
												white/gray cement board	A176	SW corner	-	-	-	Positive
14: Soils Research Building	2nd floor	Office 1	office	ceiling tile	wall board on cement board	linoleum on 9x9 floor tile on cement board	two 4' fluorescent	white	-	speckled sheet; white gray	12x12 holes	-	-	-	white	P37	frame	Positive
												white/gray cement board	A177	Ceiling above stairs	-	-	-	Positive
14: Soils Research Building	2nd floor	Office 2	office	ceiling tile	wall board on cement board	linoleum on 9x9 floor tile on cement board	one 8' fluorescent	white	-	speckled sheet; white gray	12x12 holes	white/gray 9x9 floor tile	A178	NE corner	-	-	-	Positive
14: Soils Research Building	2nd floor	Office 3	office	ceiling tile	wall board on cement board	linoleum on 9x9 floor tile on cement board	one 8' fluorescent	white	-	speckled sheet; white gray	12x12 holes	-	-	-	-	-	-	-
14: Soils Research Building	2nd floor	Office 4	office	ceiling tile	wall board on cement board	linoleum on 9x9 floor tile on cement board	one 8' fluorescent	white	-	speckled sheet; white gray	12x12 holes	-	-	-	-	-	-	-

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
14: Soils Research Building	Exterior	Exterior	exterior	No attic access	wood trim; stucco	-	-	-	white	-	-	white stucco	A179	N door	-	-	-	Negative
												white stucco	A180	SW corner	-	-	-	Negative
												white caulking	A219	S wall	-	-	-	Negative
												white caulking	A220	S window	-	-	-	Negative
												gray parchment	A221	basement wall west	-	-	-	Negative
												gray parchment	A222	basement wall south	-	-	-	Negative
												gray parchment	A223	basement wall east	-	-	-	Negative
15: Ecology Building	3rd floor	3rd floor	storage	gable roof	wood	wood	water damage on roof; fume hood pipes with water running down	-	-	-	-	white insulating board	A25	S of stairwell	-	-	-	Negative
15: Ecology Building	2nd floor	2nd Floor	storage	insulating board	fibre board; fibreglass and woodchips insulation	plywood	grey desks; suspect desk tops	white	white	white	-	-	-	-	white paint	P10	north wall	Positive
												gray countertop	A20	table adjacent to stairs	-	-	-	Positive
												green countertop	A21	east	-	-	-	Positive
												brown countertop	A22	E wall	-	-	-	Negative
												black countertop	A23	S wall	-	-	-	Negative
												white insulating board	A24	bulletin board	-	-	-	Negative
												white/brown fibre board	A26	SE corner	-	-	-	Negative
												white/brown fibre board	A27	NE corner	-	-	-	Negative
												white/brown fibre board	A28	NW corner	-	-	-	Negative
black tar paper	A29	SE end	-	-	-	Negative												
15: Ecology Building	2nd floor	2nd floor stairwell	stairwell	plywood	plywood; E and W fibreboard	wood steps	-	white	white	gray	-	-	-	-	-	-	-	-
15: Ecology Building	Main	Washroom	washroom	ceiling tile	ceramic tile; wood; cupboards	9x9 floor tile	toilet; sinks	white	green; white	white	12x12	-	-	-	-	-	-	-
15: Ecology Building	Main	Entrance Hall	hallway	ceiling tile	wood paneling	12x12 floor tile with carpet on top	-	white	beige; white doors	white/blue; red carpet	12x12	white/blue 12x12 floor tile	A7	west door way	-	-	-	Positive
												white ceiling tile	A19	E entrance	-	-	-	Negative
15: Ecology Building	Main	Main Stairwell	stairwell	wood paneling	wood paneling	wood	-	beige	beige; white doors	gray	-	-	-	gray paint	P9	stairs	Negative	
15: Ecology Building	Main	Hall	hallway	ceiling tile	wood panelling	9x9 floor tile	thermostat	-	beige	white	-	white fibre board	A17	bulletin board	-	-	-	Negative
												white/blue 12x12 floor tile	A18	floor	-	-	-	Positive

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
15: Ecology Building	Main	Furnace Room	furnace room	drywall	drywall	cement	furnace	white	white	gray	-	-	-	-	yellow paint	P8	utility room wall	Negative
												yellow drywall mud	A15	NW corner	-	-	-	Positive
												yellow drywall mud	A16	SW corner	-	-	-	Positive
15: Ecology Building	Main	South Lab	lab	ceiling tile	wood paneling/ wood base panel	9x9 floor tile	fridge; freezer; 3 heating cabinets; 2 sinks; fume hood	white	brown and beige; white on brown	white	12x12	white/silver sink insulation	A1	sink	-	-	-	Positive
												white with gray 9x9 floor tile	A3	Floor E wall	-	-	-	Positive
												white with gray 9x9 floor tile	A4	W doorway	-	-	-	Positive
15: Ecology Building	Main	Growth Chamber Room	storage	ceiling tile	wood paneling/ wood base panel/ drywall on one side	cement	2 growth chambers	white	brown and beige	gray	12x12	white ceiling tile	A2	ceiling	-	-	-	Negative
15: Ecology Building	Main	South Storage	storage	ceiling tile	wood paneling and footing	9x9 floor tile and cement	-	white	brown and beige	white	12x12	-	-	-	pink paint	P4	interior kickboard	Negative
												white with gray 9x9 floor tile	A5	floor	-	-	-	Positive
												white ceiling tile	A6	ceiling	-	-	-	Negative
												black tar paper	A30	ceiling	-	-	-	Negative
15: Ecology Building	Main	North Storage	storage	ceiling tile	wood paneling and footing	9x9 floor tile	cleaning solvents; 160 L of floor stripper	white	brown and beige	white	12x12	-	-	-	-	-	-	-
15: Ecology Building	Main	Office	office	ceiling tile	wood paneling and footing	12x12 floor tile	-	white	brown and beige	white/ blue	12x12	-	-	-	white paint	P5	office kickboard	Negative
												white/blue 12x12 floor tile	A8	office floor	-	-	-	Negative
												green linoleum	A31	office floor	-	-	-	Negative

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result	
15: Ecology Building	Main	North Lab	lab	ceiling tile	wood paneling and footing	12x12 floor tile	12 sq. feet of water damage north wall; fume hood with suspect board and suspect countertop	white	brown and beige	white/blue	12x12	-	-	-	white paint	P6	window frame	Negative	
												-	-	-	white paint	P7	cabinet on N wall	Negative	
												white/blue 12x12 floor tile	A9	middle of lab floor	-	-	-	Positive	
												white ceiling tile	A10	ceiling	-	-	-	Negative	
												gray countertop	A11	counter on N wall	-	-	-	Positive	
												gray countertop	A12	counter on E wall	-	-	-	Negative	
												gray board fume hood	A13	fume hood	-	-	-	Negative	
												gray insulating board	A14	Inside acid cabinet under fume hood	-	-	-	Negative	
												green levelling compound	A32	middle of lab floor	-	-	-	Negative	
15: Ecology Building	Exterior	Exterior	exterior	cedar shake	wood and cement footings	-	-	red	white/ gray	-	-	-	-	-	white paint	P3	exterior	Negative	
17: Carpenter Shop	Main	Entrance	hallway	drywall	drywall/tin	cement	security unit with battery	white	white	gray	-	-	-	-	-	-	-	-	
17: Carpenter Shop	Main	Garage	Garage and shop	drywall/ plywood	tin/fibre board/foil/ wood siding	cement	thermostat; twenty-four 8' fluorescent	white	green and blue on NE shelving; gray work bench	gray	-	-	-	-	green paint	P39	garage	Negative	
												-	-	-	white paint	P40	work bench	Negative	
												-	-	-	gray paint	P41	work bench countertop	Negative	
												white drywall mud	A184	SE ceiling	-	-	-	Positive	
												white window caulking	A191	SE window	-	-	-	Negative	
17: Carpenter Shop	Main	Storage Above Office	storage	fibre board	-	-	2 incandescent lights with suspect backing; rupture in ceiling with vermiculite coming out	-	-	-	-	-	-	-	-	-	-	-	-
17: Carpenter Shop	Main	Paint Storage	storage	drywall/ plywood	half drywall on fibre board/ half tin on fibre board	cement	770 L of paint; 40 cans of spray paint; 20 L of solvent; three 8' fluorescent	white	white	paint splatter	-	-	-	-	-	-	-	-	
17: Carpenter Shop	Main	Washroom	washroom	drywall	drywall on tin/ drywall on fibre board	floor tile on plywood	-	white	white	gray	-	-	-	-	-	-	-	-	-
												gray 9x9 floor tile	A189	floor	-	-	-	Negative	
												white drywall mud	A190	NE corner	-	-	-	Positive	
17: Carpenter Shop	Main	Utility Room	utility room	drywall	drywall on tin	plywood	-	white	white	gray	-	-	-	-	-	-	-	-	

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
17: Carpenter Shop	Main	Office	office	drywall on wood panelling	drywall on wood panelling	floor tile on plywood	2 desk top fluorescent; one 8' fluorescent	white	white	gray and light gray tiles	-	white drywall mud	A186	SW corner office	-	-	-	Positive
												gray 12x12 floor tile	A187	door	-	-	-	Positive
												light gray 12x12 floor tile	A188	middle of floor	-	-	-	Negative
17: Carpenter Shop	Bsmt	Basement	undeveloped basement	unfinished ceiling	cement walls and a section of brick (old chimney)	cement (poor condition)	water damage low; old sump and new sump; 12 sq. foot of cement board stored	-	gray/blue stairway	gray	-	-	-	blue paint	P42	top of stairway	Negative	
17: Carpenter Shop	Attic	Attic	attic	-	-	-	vermiculite	-	-	-	-	brown/silver vermiculite	A181	SE access	-	-	-	Positive
												brown/silver vermiculite	A182	SE access	-	-	-	Positive
												brown/silver vermiculite	A183	SE access	-	-	-	Positive
												brown/silver vermiculite	A185	SW access	-	-	-	Positive
17: Carpenter Shop	Exterior	Exterior	exterior	-	wood siding	cement base with parchment	1 HID light	-	blue and white accent on doors, trim, and eave troughs	gray	-	-	-	blue paint	P38	at entrance	Positive	
18: Apiculture Laboratory	Bsmt	Basement main area	basement	concrete	concrete	concrete	fridge; 2 freezers, one with ODS-R12; incubator	white	white	gray	-	gray parchment	A83	stairwell on south wall	-	-	-	Negative
18: Apiculture Laboratory	Bsmt	Washroom	washroom	wood	wood	linoleum	newer construction	white	brown	-	-	-	-	-	-	-	-	-
18: Apiculture Laboratory	Bsmt	Under stairs	storage	stairs/ bare	wood	concrete	household cleaning supplies	-	white	gray	-	-	-	-	white paint	P19	under stair	Negative
18: Apiculture Laboratory	Bsmt	Cooler 1	cooler	cement board with cork insulation	cement board with cork insulation	concrete	wood doors with cork insulation	wood	wood	gray	-	gray cement board	A78	outside wall	-	-	-	Negative
18: Apiculture Laboratory	Bsmt	Cooler 2	cooler	cement board with cork insulation	cement board with cork insulation	concrete	wood doors with cork insulation	wood	wood	gray	-	gray caulking	A79	inside cooler	-	-	-	Positive
												gray cement board	A80	inside wall	-	-	-	Negative
												black door seal	A82	cooler door	-	-	-	Negative
18: Apiculture Laboratory	Bsmt	Cooler 3	cooler	cement board with cork insulation	cement board with cork insulation	concrete	wood doors with cork insulation	wood	wood	gray	-	-	-	-	-	-	-	-
18: Apiculture Laboratory	Bsmt	Cooler 4	cooler	cement board with cork insulation	cement board with cork insulation	concrete	wood doors with cork insulation	wood	wood	gray	-	gray cement board	A81	cooler ceiling	-	-	-	Negative
18: Apiculture Laboratory	Main	Entryway	hallway	plywood	plywood	linoleum	sink	white	white	new	-	-	-	-	-	-	-	-

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result	
18: Apiculture Laboratory	Main	South Lab	lab	plywood	plywood	linoleum	fridge; incubator	white	white	brown squares	-	brown square linoleum	A84	lab floor	-	-	-	Negative	
												white insulation	A85	sink	-	-	-	Negative	
18: Apiculture Laboratory	Main	Office	office	plywood	plywood	linoleum	-	white	white	new	-	-	-	-	-	-	-	-	
18: Apiculture Laboratory	Main	North Lab	lab	plywood	plywood	linoleum	2 fridges; 3 incubators; 2 canisters of CO2; sink; emergency light; 2 fume hoods	white	white	new	-	gray cement board	A86	fume hood	-	-	-	-	Negative
18: Apiculture Laboratory	Attic	Attic	attic	-	-	-	4 inches of vermiculite with fibreglass overtop	-	-	-	-	brown vermiculite	A89	north attic	-	-	-	Negative	
												brown vermiculite	A90	south attic	-	-	-	Negative	
												brown vermiculite	A91	east attic	-	-	-	Negative	
18: Apiculture Laboratory	Exterior	Exterior	exterior	-	wood siding	concrete base	-	-	white	-	-	-	-	-	white paint	P20	west exterior	Positive	
												gray parchement	A87	exterior concrete	-	-	-	Negative	
												black tar paper	A88	SW exterior corner	-	-	-	Negative	
												gray mortar	A92	chimney on south side exterior	-	-	-	Negative	
25: Honey Extraction Building	Main	Honey Extracting Area	work area	drywall	drywall/wall panel	cement	water cooler; thermostat	white	white	gray	-	-	-	-	-	-	-	-	
25: Honey Extraction Building	Main	Furnace Room	utility room	drywall	drywall	cement	-	white	white	gray	-	-	-	-	-	-	-	-	
25: Honey Extraction Building	Main	Washroom	washroom	ceiling tile	drywall	linoleum	water damage and visible mould on ceiling tile	white	yellow	new	-	-	-	-	-	-	-	-	
25: Honey Extraction Building	Main	Office	office	drywall	drywall	-	-	white	white	-	-	-	-	-	-	-	-	-	
25: Honey Extraction Building	North wing	Honey Super Storage	storage	tin roof	plywood/tin/s teal door	cement	bee hive cell storage; 1 HID light	tin	white	gray	-	-	-	-	-	-	-	-	
25: Honey Extraction Building	North wing	Work Room	work area	wood	plywood	cement	chemical storage	white	white	gray	-	-	-	-	yellow/white paint	P2	interior work room	Negative	
25: Honey Extraction Building	North wing	Hot Room	storage	-	-	-	No access	-	-	-	-	-	-	-	-	-	-	-	
25: Honey Extraction Building	Exterior	Exterior	exterior	tin roof	tin	tin	-	-	yellow with brown trim and eave troughs	yellow	-	-	-	-	-	-	-	-	

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
26: Storage	Main	Threshing Room	work area/garage	drywall	drywall	concrete	mould around/on pipe and on walls; cement board lining box area in NW	white	white	gray	-	-	-	-	white paint	P46	south wall	Negative
												gray drywall mud	A199	south wall	-	-	-	Positive
												gray cement board	A200	NW enclosure	-	-	-	Positive
26: Storage	Main	Lab 1	lab	drywall	drywall	9x9 floor tile	fume hood; two 8' and two 4' fluorescent	white	white	white/gray	-	white/gray 9x9 floor tile	A201	south floor	-	-	-	Negative
												white/gray duct tape	A202	NE pipe	-	-	-	Negative
26: Storage	Main	Office 1	office	drywall	drywall with fiberglass insulation	12x12 floor tiles	water damage NW ceiling and window frame	white	white	white/gray	-	white/gray 12x12 floor tile	A203	office floor	-	-	-	Negative
26: Storage	Main	Seed Storage	cooler	drywall	drywall	concrete	water damage on ceiling; vermiculite leaking from	white	white	gray	-	-	-	-	white paint	P47	wall	Negative
												gray drywall mud	A204	wall	-	-	-	Positive
26: Storage	Main	Cooler	cooler	plywood (blue Styrofoam insulation)	plywood (blue Styrofoam insulation)	wood	thermometer; plywood door with cork insulation	white	white	gray	-	black door seal	A205	door	-	-	-	Negative
26: Storage	Main	Furnace Room	utility room	drywall	drywall and cement board on east wall (8x4m)	concrete	spilt zonolite on floor; fiberglass insulation on pipes; water damage on vent stacks on west side	white	white	gray	-	gray/white cement board	A206	south wall	-	-	-	Positive
												gray drywall mud	A207	east wall	-	-	-	Positive
26: Storage	Main	Air Drying Room	storage	drywall	drywall with fiberglass insulation	concrete	ceiling water damage; nine 8' fluorescent; thermostat	white	white	gray	-	gray drywall mud	A208	wall	-	-	-	Positive
26: Storage	Main	Storage	storage	drywall	drywall	concrete	D cell batteries; fiberglass pipe insulation; oven	white	white	gray	-	-	-	-	-	-	-	-
26: Storage	Main	Seed Cleaning	work area	drywall	drywall	concrete	two 8' fluorescent; fiberglass pipe insulation	white	white	gray	-	-	-	-	-	-	-	-
26: Storage	Main	Lab 2	lab	drywall	drywall	concrete	incubator; centrifuge; fiberglass pipe storage; seven 8' and three 4' fluorescent	white	white	gray	-	-	-	-	blue paint	P48	cupboards	Negative
26: Storage	Main	Drying Room	work area	new T-bar ceiling	drywall	concrete	dryer	white	white	gray	-	-	-	-	-	-	-	-
26: Storage	Main	Office 2	office	drywall	drywall	9x9 floor tile	fiberglass pipe insulation; three 8' and three 4' fluorescent	white	white	white/gray tiles	-	white/gray 9x9 floor tile	A209	SW corner	-	-	-	Negative

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result	
26: Storage	Main	Lab 3	lunch room	drywall	drywall	12x12 floor tile	fridge; fibreglass insulation; water cooler; minor water damage on window	white	white	white/gray	-	white/gray 12x12 floor tile	A210	South side	-	-	-	Negative	
26: Storage	Main	Office 3	office	drywall	drywall	9x9 floor tile	fibreglass pipe insulation; 12 sq. foot cement board counter; three 8' fluorescent	white	white	white/gray	-	white/gray 9x9 floor tile	A211	office floor	-	-	-	Negative	
												gray cement countertop	A212	S and E walls	-	-	-	Positive	
26: Storage	Main	Washroom Hall	hallway	drywall	drywall	9x9 floor tile	two 4' fluorescent; household cleaners	white	white	white/gray	-	green 9x9 floor tile	A213	north hall	-	-	-	Negative	
												green 9x9 floor tile	A214	south hall	-	-	-	Positive	
26: Storage	Main	Mens Washroom	washroom	drywall	drywall	9x9 floor tile	water damage at fan NW corner; one 4' fluorescent	white	white	green	-	-	-	-	-	-	-	-	-
26: Storage	Main	Womens Washroom	washroom	drywall	drywall	9x9 floor tile	fibreglass pipe insulation; one 4' fluorescent; bad water damage with mould in wall	white	white	green	-	-	-	-	white paint	P50	interior washroom	Negative	
												green 9x9 floor tile	A215	west side floor	-	-	-	Negative	
												gray drywall mud	A216	west side floor	-	-	-	Positive	
26: Storage	Main	Office 4	office	drywall	drywall	9x9 floor tile	four 4' fluorescent	white	white	green	-	gray drywall mud	A217	east wall	-	-	-	Positive	
26: Storage	Main	Main Hall	hallway	drywall	drywall	concrete	water damage adjacent to Cooler and Seed Storage; fibreglass pipe	white	white	gray	-	gray drywall mud	A218	south wall in the center	-	-	-	Positive	
												gray drywall mud	A224	main hall at attic stairs	-	-	-	Positive	
26: Storage	Main	Attic	attic	-	-	-	1 inch vermiculite on fibreglass; sacks of left over zonalite; dead squirrels	-	-	-	-	brown/silver vermiculite	A225	NW	-	-	-	Negative	
												brown/silver vermiculite	A226	East middle	-	-	-	Positive	
												brown/silver vermiculite	A227	SE	-	-	-	Positive	
												brown/silver vermiculite	A228	center	-	-	-	Negative	
26: Storage	Main	Exterior	exterior	tin roof	tin	-	-	tin	yellow with brown trim and eave troughs	-	-	-	-	white paint	P49	exterior window	Negative		
35: Garage	Main	Office 1	office	ceiling tile	panel board over plywood	9x9 floor tile and 2 strips of 12x12 floor tile	4 fluorescent lights (new)	white	white	white/blue and gray/black	12x12 holes	white/blue 9x9 floor tile	A192	NE floor	-	-	-	Negative	
												gray/black 12x12 floor tile	A193	NE floor	-	-	-	Negative	
												white 12x12 holes ceiling tile	A194	SW ceiling corner	-	-	-	Negative	
35: Garage	Main	Washroom	washroom	ceiling tile	wall board	concrete	household cleaning supplies; 1 new fluorescent	white	white	gray	12x12 flat tile	white 12x12 flat ceiling tile	A195	ceiling	-	-	-	Negative	

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result	
35: Garage	Main	Entry	hallway	ceiling tile	wall board	concrete	fire alarm batteries; battery on counter; household cleaning chemicals	white	white	gray	12x12 holes	white 12x12 holes ceiling tile	A196	west wall	-	-	-	Negative	
35: Garage	Main	Office 2	office	drywall	drywall/N wall board	concrete	3 fluorescents on ceiling and one on counter	white	white	gray	-	-	-	-	off-white paint	P43	walls	Negative	
												white drywall mud	A197	wall	-	-	-	Negative	
35: Garage	Main	Conference Room	conference room	drywall	wallboard on N and E walls/ metal on others	concrete	4 new fluorescents; water cooler and fridge/freezer	white	white	gray	-	-	-	-	-	-	-	-	-
35: Garage	2nd floor	Storage Room	storage	metal with baton insulation	metal with baton insulation	wood	storage of old fluorescent lights; 7 radioactive smoke detectors; gray storage shelves	white	white	gray	-	-	-	-	gray paint	P44	shelves	Negative	
35: Garage	Main	South Shop	shop/garage	batton insulation	cinderblock separating shops	concrete	engine hoist; drainage area into 2 sumps; antifreeze, oils, WD40, solvents, cleaners; welders; drums of oil	-	-	gray	-	brown/grey vermiculite	A198	cinderblock wall in center of entire shop	-	-	-	-	Positive
35: Garage	Main	North Shop	shop/garage	batton insulation	batton insulation	concrete	oil, steel, vehicles, tractors, batteries	-	-	gray	-	-	-	-	-	-	-	-	-
35: Garage	Exterior	Exterior	exterior	tin roof	tin	tin	large garage door	tin	green	green	-	-	-	-	-	-	-	-	
36: Forage Building	2nd Floor	Loft	storage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
36: Forage Building	Main	Cool Room	cooler	-	-	-	mercury thermometers; ODS-R12	-	-	-	-	-	-	-	-	-	-	-	
36: Forage Building	Main	Lunch Room	storage	-	-	-	mercury thermometers	-	-	-	-	-	-	-	-	-	-	-	
36: Forage Building	Main	Lab	lab	-	-	-	mercury thermometers	-	-	-	-	-	-	-	-	-	-	-	
36: Forage Building	Main	East washroom	washroom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
36: Forage Building	Main	West washroom	washroom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
36: Forage Building	Main	Boiler Room	utility room	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
36: Forage Building	Main	Storage	storage	-	-	-	two ODS-R12	-	-	-	-	-	-	-	-	-	-	-	
39: Apiculture Storage	Main	Storage	storage	tin roof	tin/drywall on S wall	concrete	bee hive cell storage	-	green/brown	-	-	-	-	-	-	-	-	-	

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
39: Apiculture Storage	Exterior	Exterior	exterior	tin roof	tin	-	-	brown	yellow with brown trim, eave troughs, and doors	-	-	-	-	-	-	-	-	-
#40: Seed Storage	Main	Interior	storage	drywall with fibreglass insulation	cinderblock	concrete	-	-	gray	gray	-	-	-	-	brown paint	P1	front door	Negative
#40: Seed Storage	Exterior	Exterior	exterior	asphalt shingles	cinderblock	-	-	brown	brown doors	-	-	-	-	-	-	-	-	-
#43: Soils Building	Main	Store Room	storage	particle board	particle board	linoleum	chemical storage; helium canister	white	white	beige	-	-	-	-	-	-	-	-
#43: Soils Building	Main	Grinding Room	work area	drywall	drywall	linoleum	fridges; 4 incubators; 1 emergency light	white	white	beige	-	-	-	-	-	-	-	-
#43: Soils Building	Main	Washroom	washroom	drywall	drywall	linoleum	sink taps leaking	white	white	square pattern	-	-	-	-	-	-	-	-
#43: Soils Building	Main	Office	office	drywall	drywall	linoleum	cooler; insulation board	white	white/green on cupboards	square pattern	-	-	-	-	-	-	-	-
#43: Soils Building	Main	Boot room	entrance	drywall	drywall	linoleum	emergency lights	white	white	square pattern	-	-	-	-	-	-	-	-
#43: Soils Building	Exterior	Exterior	exterior	tin roof	tin	-	2 HID lights	brown	yellow/white on doors windows	-	-	-	-	-	-	-	-	-
#45: Chemical Storage	Main	Lab Chemicals Room	storage	tin roof	tin	cement (with in-floor heating)	Chemical storage	gray	gray	gray	-	-	-	-	-	-	-	-
#45: Chemical Storage	Main	Agriculture Chemical Room	storage	tin roof	tin	cement (with in-floor heating)	Chemical storage	gray	gray	gray	-	-	-	-	-	-	-	-
#45: Chemical Storage	Main	Center Room	utility room	tin roof	tin	cement (with in-floor heating)	mercury thermostat	gray	gray	gray	-	-	-	-	-	-	-	-
#45: Chemical Storage	Exterior	Exterior	exterior	tin roof	tin	-	HID light	gray	yellow with brown painted steel supports	-	-	-	-	-	-	-	-	-
Tin Shed	Main	Structure	storage	metal	tin (no insulation)	cement	Fuel; fertilizer; tools	gray	gray	gray	-	-	-	-	-	-	-	-



VICINITY MAP



Date: Feb, 2011

Drawn by: Google

Project Name: Hazardous Materials Assessment Project No.: 11166

Edited: Feb, 2011

Edited by: CL

Project Location: Beaverlodge Research Center

**Appendix
2b-1**

— Building Assessed
 Building Number



BUILDINGS ASSESSED



Date: Feb, 2011

Drawn by: Google

Project Name: Hazardous Materials Assessment Project No.: 11166

**Appendix
2b-2**

Edited: Feb, 2011

Edited by: CL

Project Location: Beaverlodge Research Center



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos



SITE SAMPLING DIAGRAM: #1 ADMINISTRATION OFFICE Main Floor



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

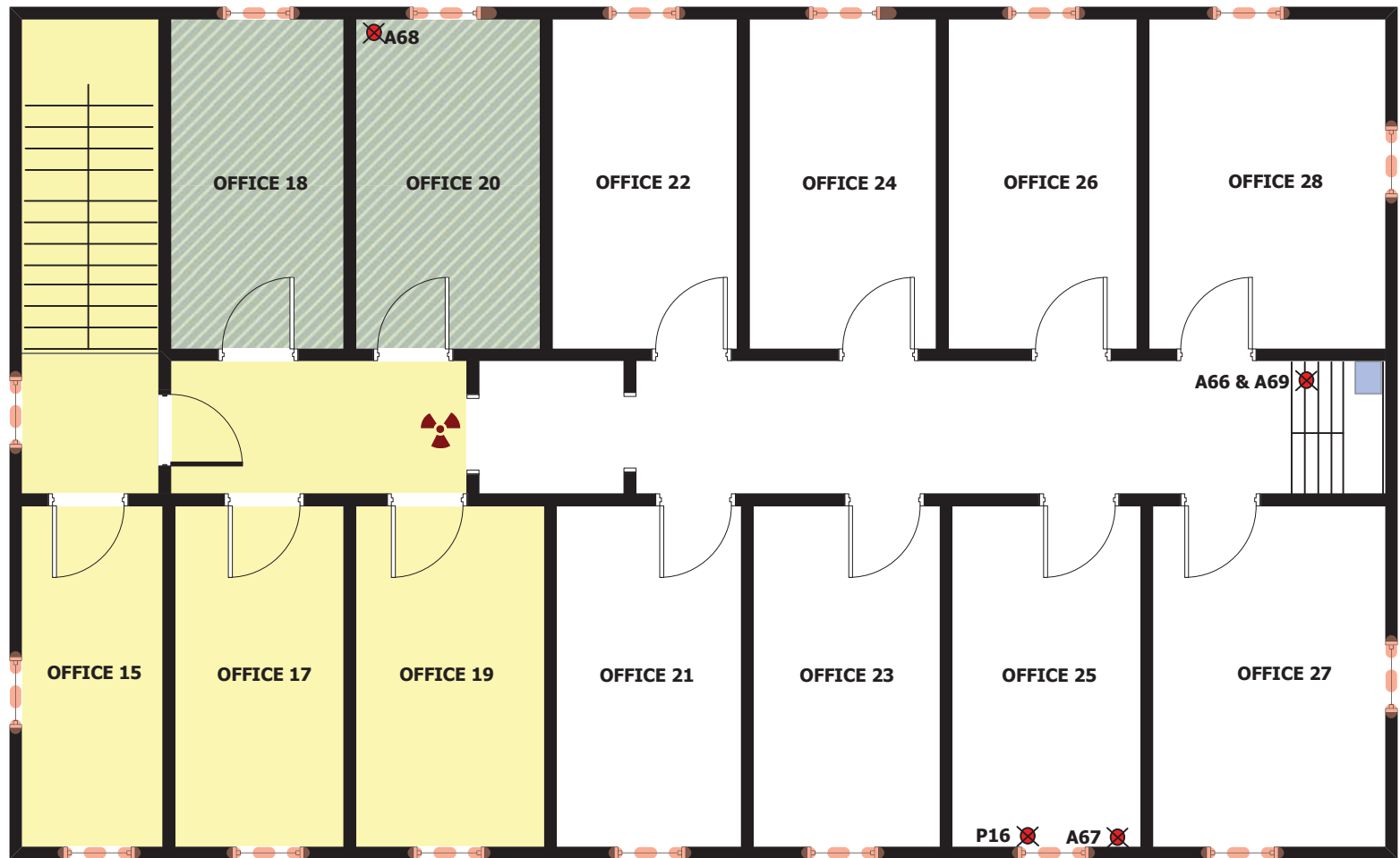
Project No.: 11166

**Appendix
2b-3**

Edited: Feb, 2011

Edited by: ER

Project Location: Beaverlodge Research Centre



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos



SITE SAMPLING DIAGRAM: #1 ADMINISTRATION OFFICE
2nd Floor



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

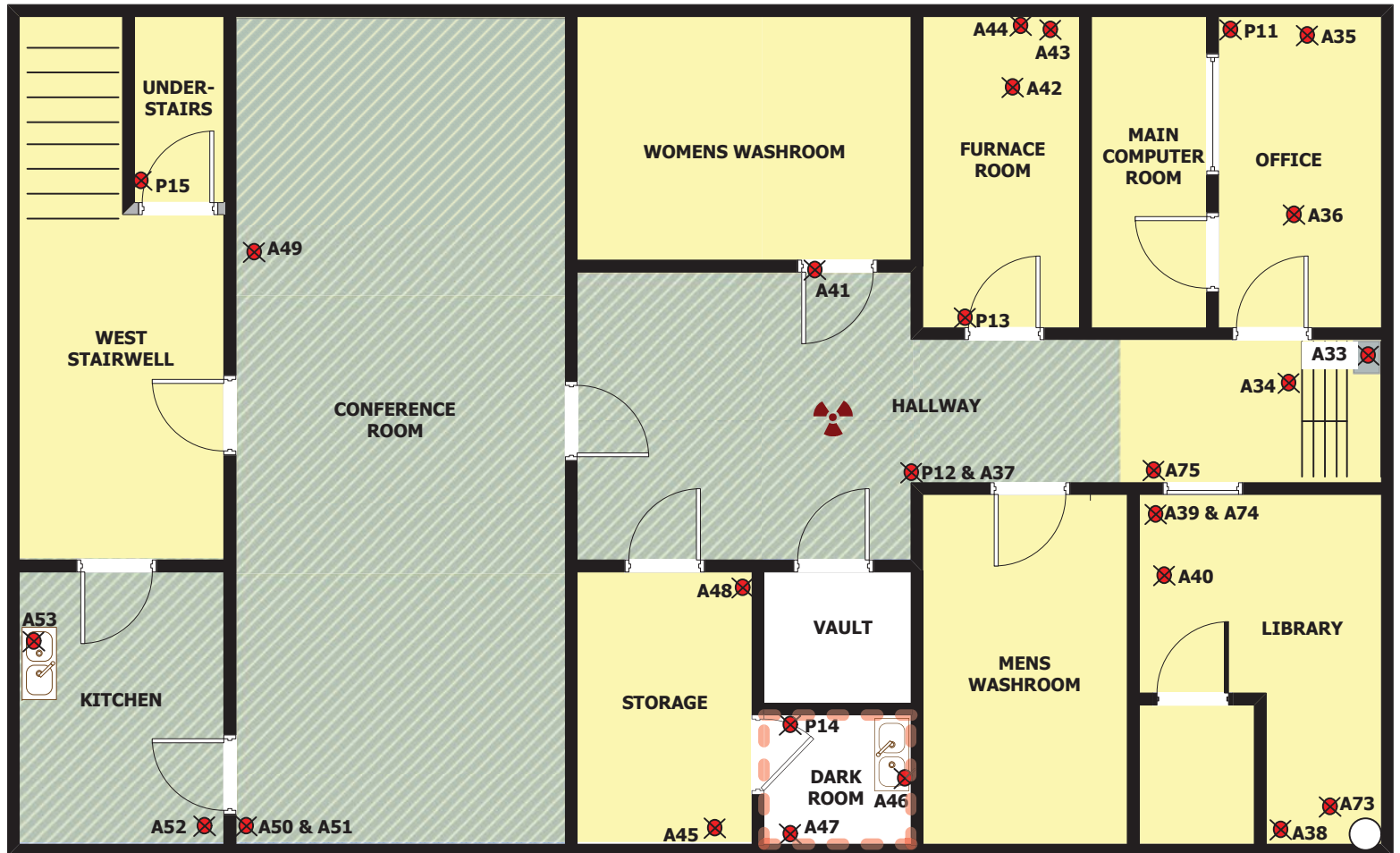
Appendix

Edited: Feb, 2011

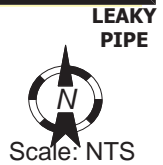
Edited by: ER

Project Location: Beaverlodge Research Centre

2b-4



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos



**SITE SAMPLING DIAGRAM: #1 ADMINISTRATION OFFICE
Basement**



Date: Feb, 2011
 Edited: Mar. 2011

Drawn by: CL
 Edited by: ER

Project Name: Hazardous Materials Assessment
 Project Location: Beaverlodge Research Centre

Project No.: 11166

**Appendix
2b-5**



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos
 - Asbestos insulation in light fixture



SITE SAMPLING DIAGRAM: #10 CANOLA LABORATORY
 Main Floor



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix

Edited: Mar, 2011

Edited by: ER

Project Location: Beaverlodge Research Centre

2b-6



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos
 - Asbestos insulation in light fixture



SITE SAMPLING DIAGRAM: #10 CANOLA LABORATORY 2nd Floor



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix

Edited: Feb, 2011

Edited by: ER

Project Location: Beaverlodge Research Centre

2b-7



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos
 - Asbestos insulation in light fixture



SITE SAMPLING DIAGRAM: #10 CANOLA LABORATORY
Basement



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix

Edited: Feb, 2011

Edited by: ER

Project Location: Beaverlodge Research Centre

2b-8



Sample ID
 A = asbestos sample
 P = paint sample

⊗ Sampling Location

▨ Floor Covering containing Asbestos

▨ Drywall Mud/Stipple/Wall covering containing Asbestos

▨ Wall and/or Attic Insulation containing Asbestos

▨ Pipe/tank insulation containing Asbestos

▨ Ozone Depleting Substance (ODS)

⊗ ACM Sink Coating

☢ Radioactive Items

● Mercury

▨ Lead paint

▨ Caulking containing Asbestos



Scale: NTS

**SITE SAMPLING DIAGRAM: #14 SOILS RESEARCH BUILDING
 Main Floor**



Date: Feb, 2011
 Edited: Mar, 2011

Drawn by: CL
 Edited by: ER

Project Name: Hazardous Materials Assessment
 Project Location: Beaverlodge Research Centre

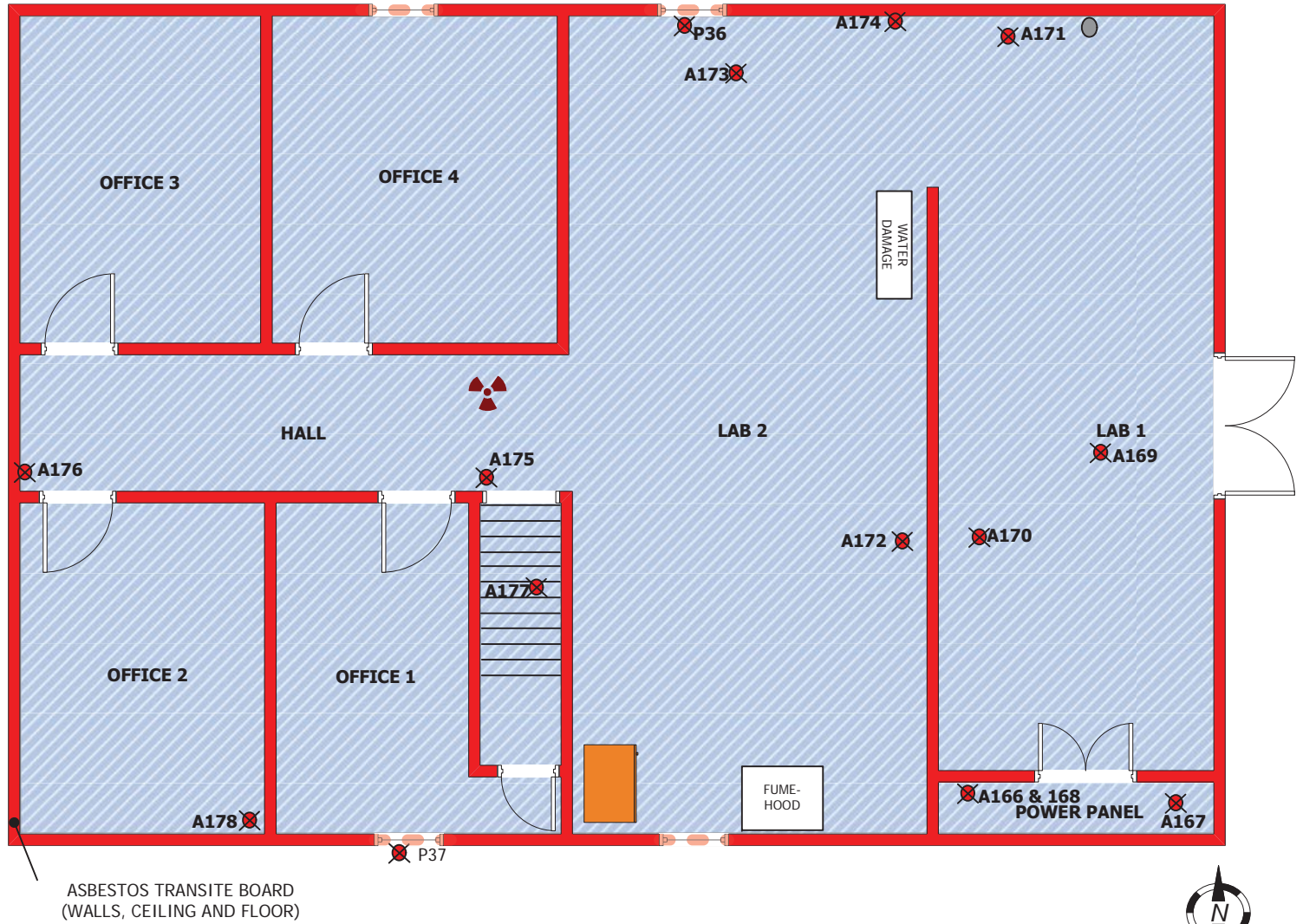
Project No.: 11166

**Appendix
 2b-9**



Sample ID
 A = asbestos sample
 P = paint sample

- Sampling Location
- Floor Covering containing Asbestos
- Drywall Mud/Stipple/Wall covering containing Asbestos
- Wall and/or Attic Insulation containing Asbestos
- Pipe/tank insulation containing Asbestos
- Ozone Depleting Substance (ODS)
- ACM Sink Coating
- Radioactive Items
- Mercury
- Lead paint
- Caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #14 SOILS RESEARCH BUILDING 2nd Floor



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix

Edited: Feb, 2011

Edited by: ER

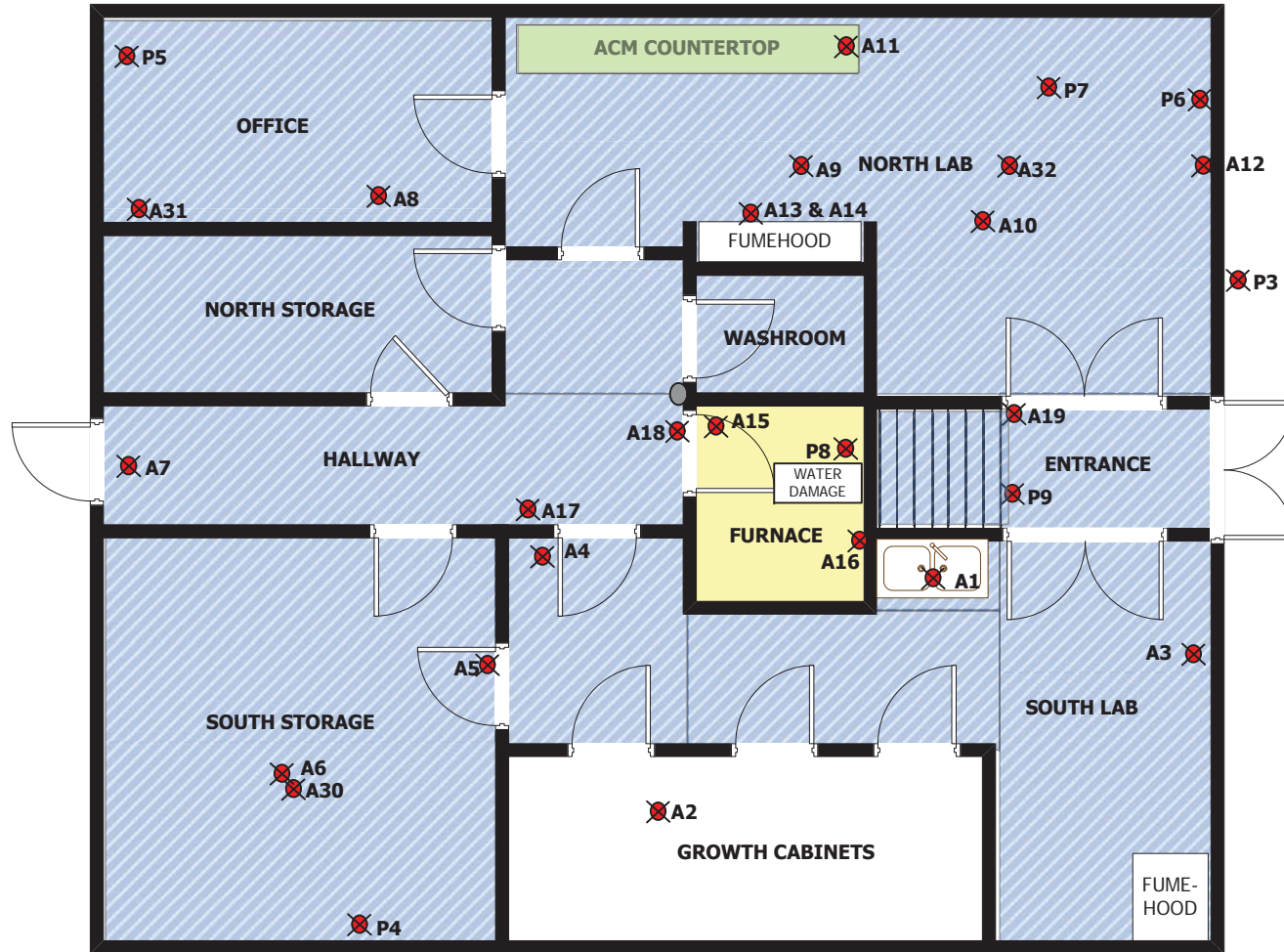
Project Location: Beaverlodge Research Centre

2b-10



Sample ID
A = asbestos sample
P = paint sample

- Sampling Location
- Floor Covering containing Asbestos
- Drywall Mud/Stipple/Wall covering containing Asbestos
- Wall and/or Attic Insulation containing Asbestos
- Pipe/tank insulation containing Asbestos
- Ozone Depleting Substance (ODS)
- ACM Sink Coating
- Radioactive Items
- Mercury
- Lead paint
- Window caulking containing Asbestos



SITE SAMPLING DIAGRAM: #15 ECOLOGY BUILDING Main Floor



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix

Edited: Mar, 2011

Edited by: ER

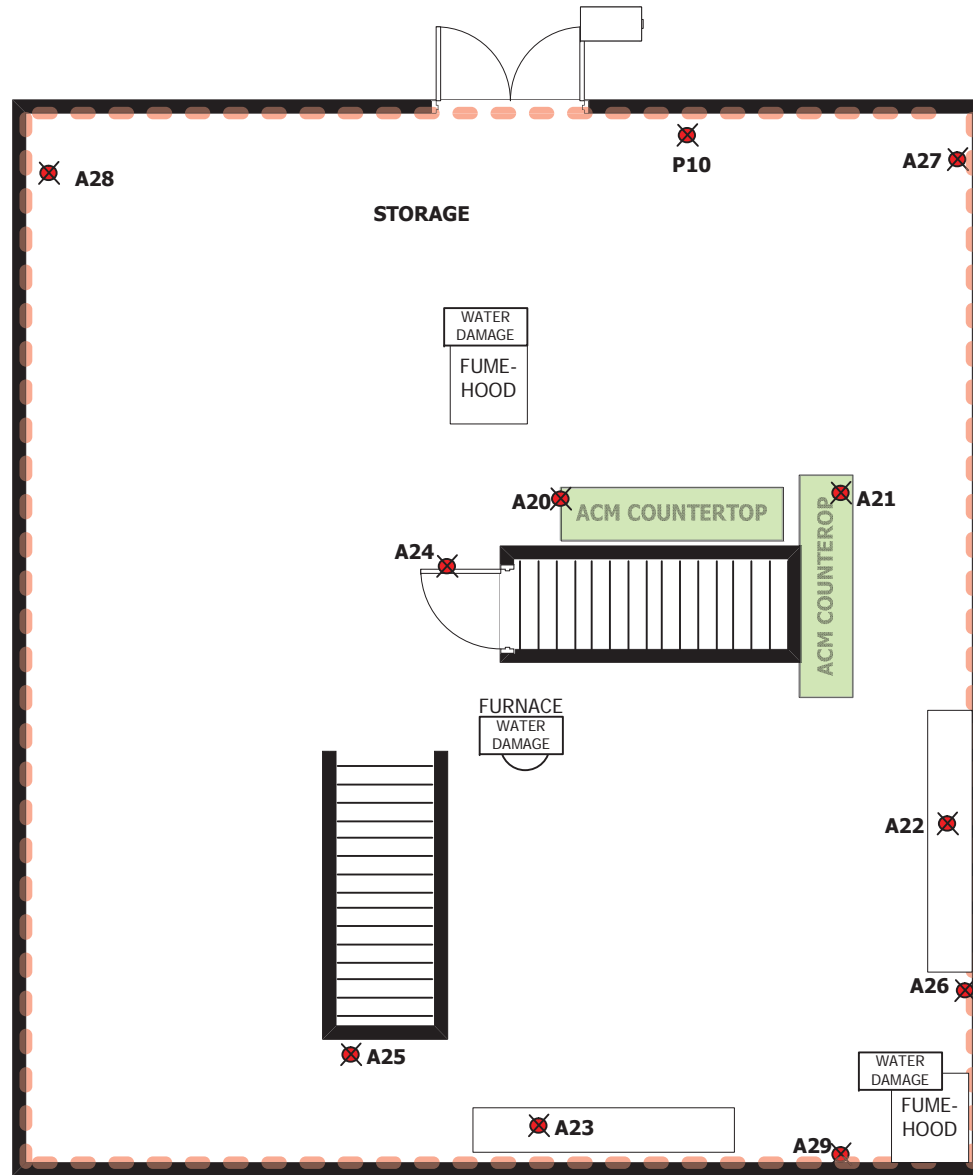
Project Location: Beaverlodge Research Centre

2b-11



Sample ID
 A = asbestos sample
 P = paint sample

- Sampling Location
- Floor Covering containing Asbestos
- Drywall Mud/Stipple/Wall covering containing Asbestos
- Wall and/or Attic Insulation containing Asbestos
- Pipe/tank insulation containing Asbestos
- Ozone Depleting Substance (ODS)
- ACM Sink Coating
- Radioactive Items
- Mercury
- Lead paint
- Window caulking containing Asbestos



SITE SAMPLING DIAGRAM: #15 ECOLOGY BUILDING 2nd Floor



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix

Edited: Feb, 2011

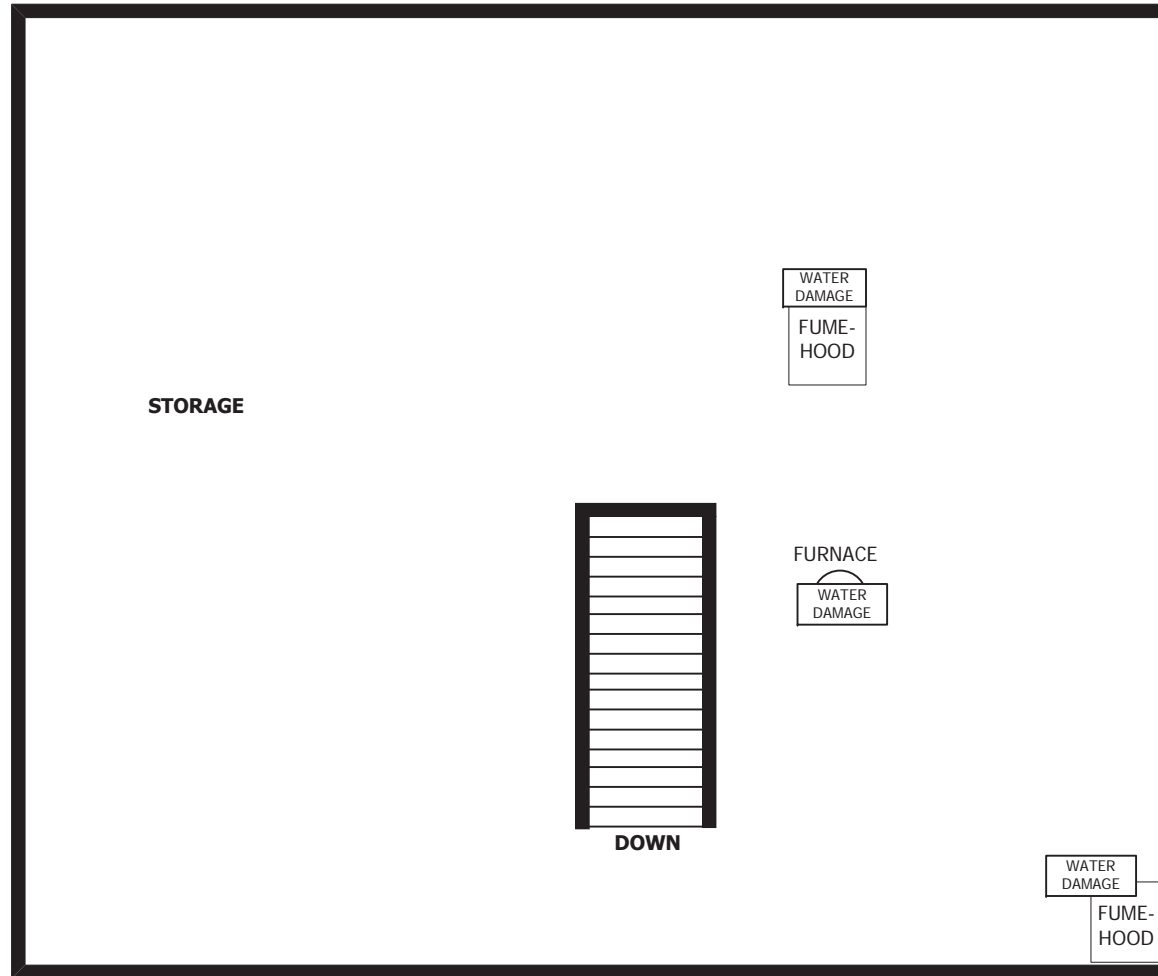
Edited by: ER

Project Location: Beaverlodge Research Centre

2b-12



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos



SITE SAMPLING DIAGRAM: #15 ECOLOGY BUILDING 3rd Floor



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix

Edited: Feb, 2011

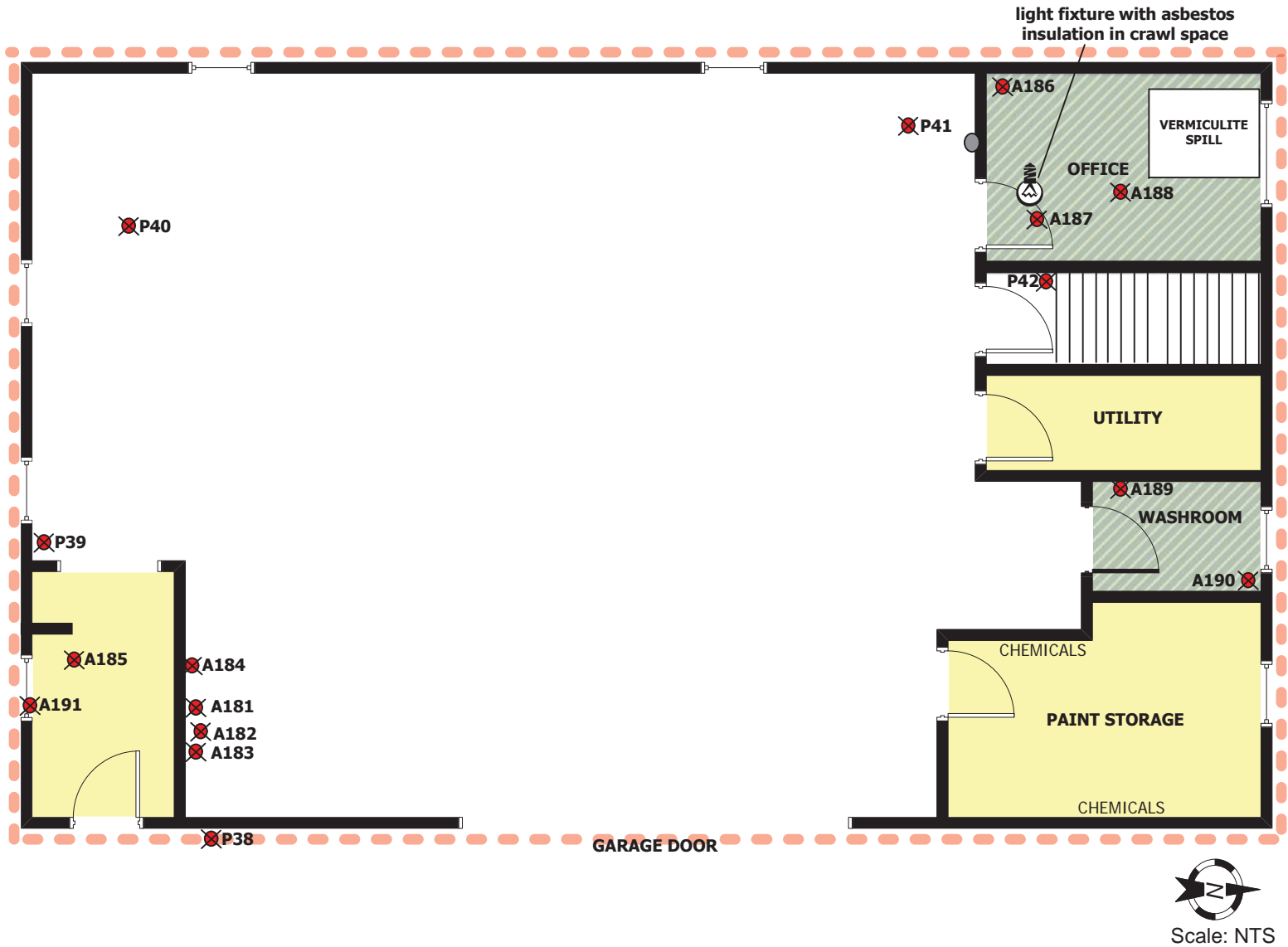
Edited by: ER

Project Location: Beaverlodge Research Centre

2b-13



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos



SITE SAMPLING DIAGRAM: #17 CARPENTER SHOP
 Main Floor














Date: Feb, 2011 Drawn by: CL
 Edited: Mar, 2011 Edited by: ER

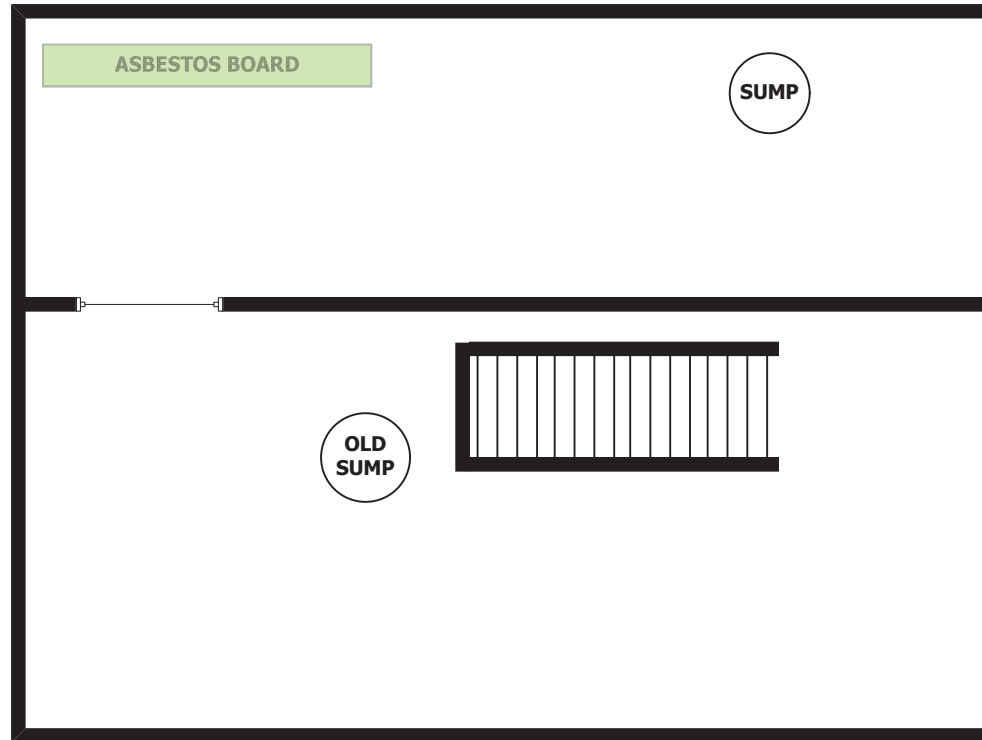
Project Name: Hazardous Materials Assessment
 Project Location: Beaverlodge Research Centre

Project No.: 11166

Appendix
2b-14



- Sample ID
 A = asbestos sample
 P = paint sample
-  Sampling Location
 -  Floor Covering containing Asbestos
 -  Drywall Mud/Stipple/Wall covering containing Asbestos
 -  Wall and/or Attic Insulation containing Asbestos
 -  Pipe/tank insulation containing Asbestos
 -  Ozone Depleting Substance (ODS)
 -  ACM Sink Coating
 -  Radioactive Items
 -  Mercury
 -  Lead paint
 -  Window caulking containing Asbestos



SITE SAMPLING DIAGRAM: #17 CARPENTER SHOP
 Basement



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix

Edited: Feb, 2011

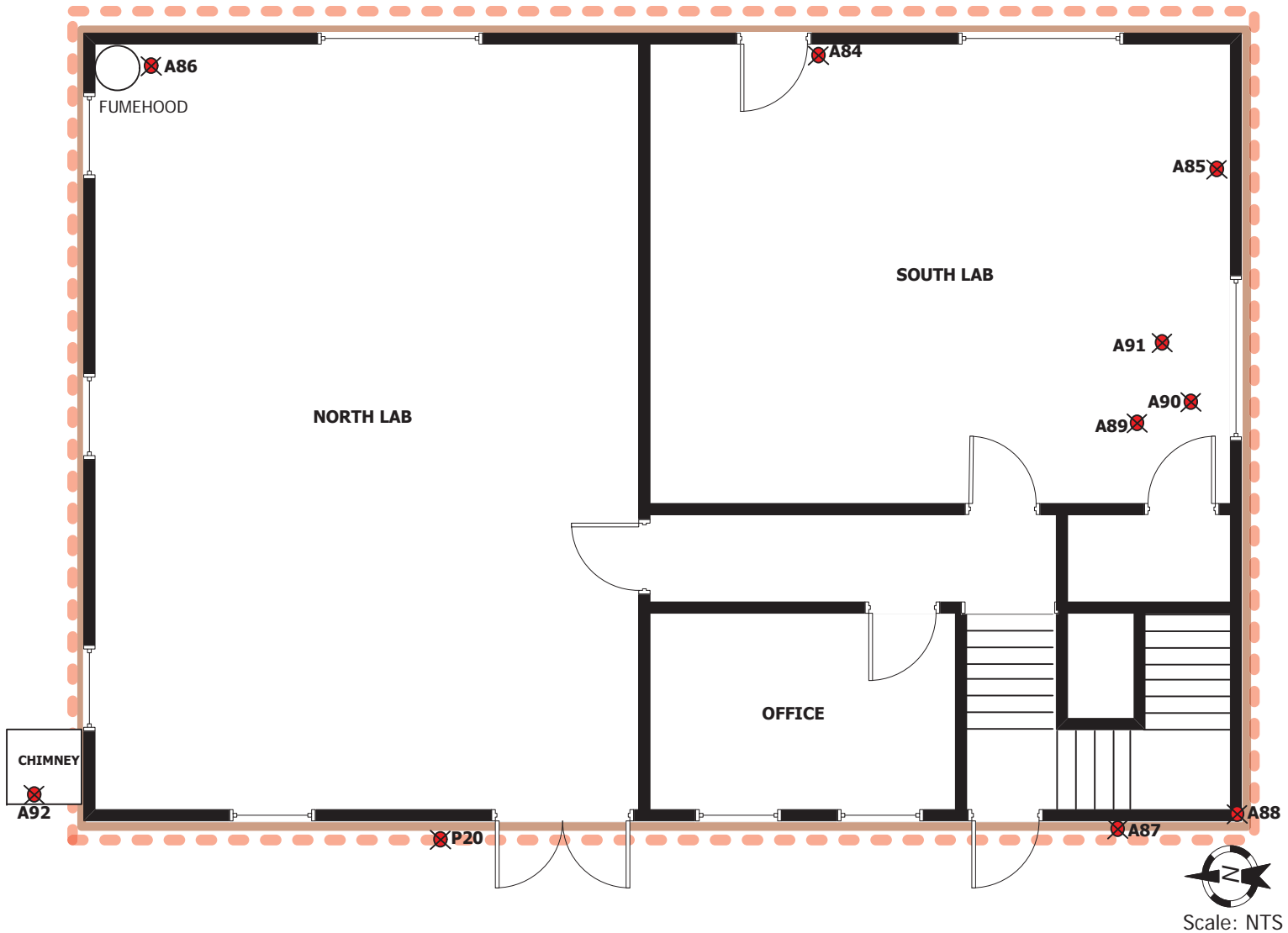
Edited by: ER

Project Location: Beaverlodge Research Centre

2b-15



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Caulking containing Asbestos



SITE SAMPLING DIAGRAM: #18 APICULTURE LABORATORY
 Main Floor



Date: Feb, 2011 Drawn by: CL
 Edited: Feb, 2011 Edited by: ER

Project Name: Hazardous Materials Assessment
 Project Location: Beaverlodge Research Centre

Project No.: 11166

Appendix
2b-16



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Caulking containing Asbestos



SITE SAMPLING DIAGRAM: #18 APICULTURE LABORATORY
 Basement



Date: Feb, 2011
 Edited: Feb, 2011












Drawn by: CL
 Edited by: ER

Project Name: Hazardous Materials Assessment
 Project Location: Beaverlodge Research Centre

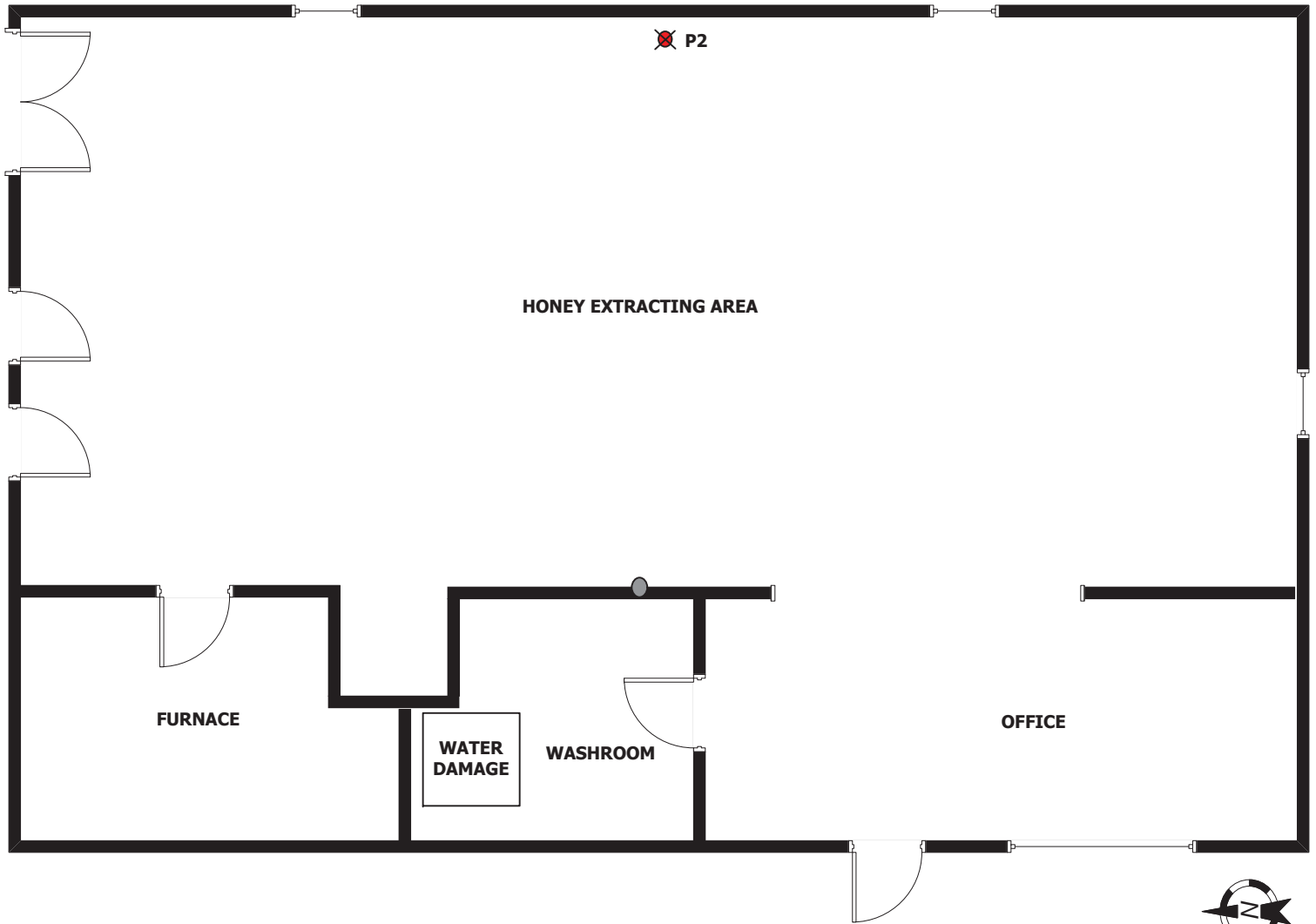
Project No.: 11166

Appendix
2b-17



- Sample ID
 A = asbestos sample
 P = paint sample
-  Sampling Location
 -  Floor Covering containing Asbestos
 -  Drywall Mud/Stipple/Wall covering containing Asbestos
 -  Wall and/or Attic Insulation containing Asbestos
 -  Pipe/tank insulation containing Asbestos
 -  Ozone Depleting Substance (ODS)
 -  ACM Sink Coating
 -  Radioactive Items
 -  Mercury
 -  Lead paint
 -  Caulking containing Asbestos

Refer to Appendix 2b-19




 Scale: NTS

SITE SAMPLING DIAGRAM: #25 HONEY EXTRACTION BUILDING
 Main Floor - South



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix












Edited: Feb, 2011

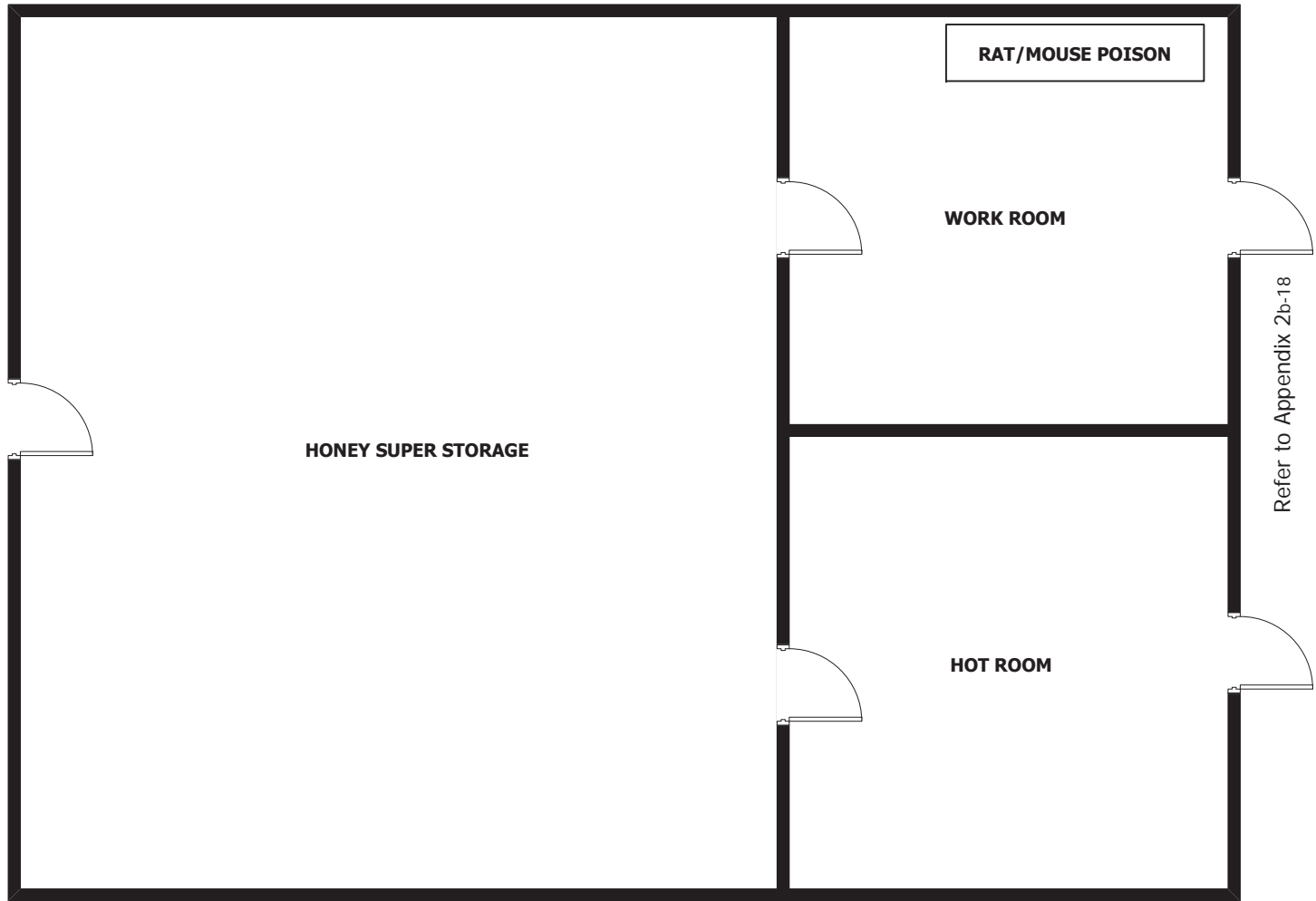
Edited by: ER

Project Location: Beaverlodge Research Centre

2b-18



- Sample ID
 A = asbestos sample
 P = paint sample
-  Sampling Location
 -  Floor Covering containing Asbestos
 -  Drywall Mud/Stipple/Wall covering containing Asbestos
 -  Wall and/or Attic Insulation containing Asbestos
 -  Pipe/tank insulation containing Asbestos
 -  Ozone Depleting Substance (ODS)
 -  ACM Sink Coating
 -  Radioactive Items
 -  Mercury
 -  Lead paint
 -  Caulking containing Asbestos



SITE SAMPLING DIAGRAM: #25 HONEY EXTRACTION BUILDING
 Main Floor - North



Date: Feb, 2011 Drawn by: CL
 Edited: Feb, 2011 Edited by: ER

Project Name: Hazardous Materials Assessment
 Project Location: Beaverlodge Research Centre

Project No.: 11166

Appendix
2b-19



- Sample ID
A = asbestos sample
P = paint sample
- Sampling Location
- Floor Covering containing Asbestos
- Drywall Mud/Stipple/Wall covering containing Asbestos
- Wall and/or Attic Insulation containing Asbestos
- Pipe/tank insulation containing Asbestos
- Ozone Depleting Substance (ODS)
- ACM Sink Coating
- Radioactive Items
- Mercury
- Lead paint
- Caulking containing Asbestos



SITE SAMPLING DIAGRAM: #26 STORAGE



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix

Edited: Mar, 2011

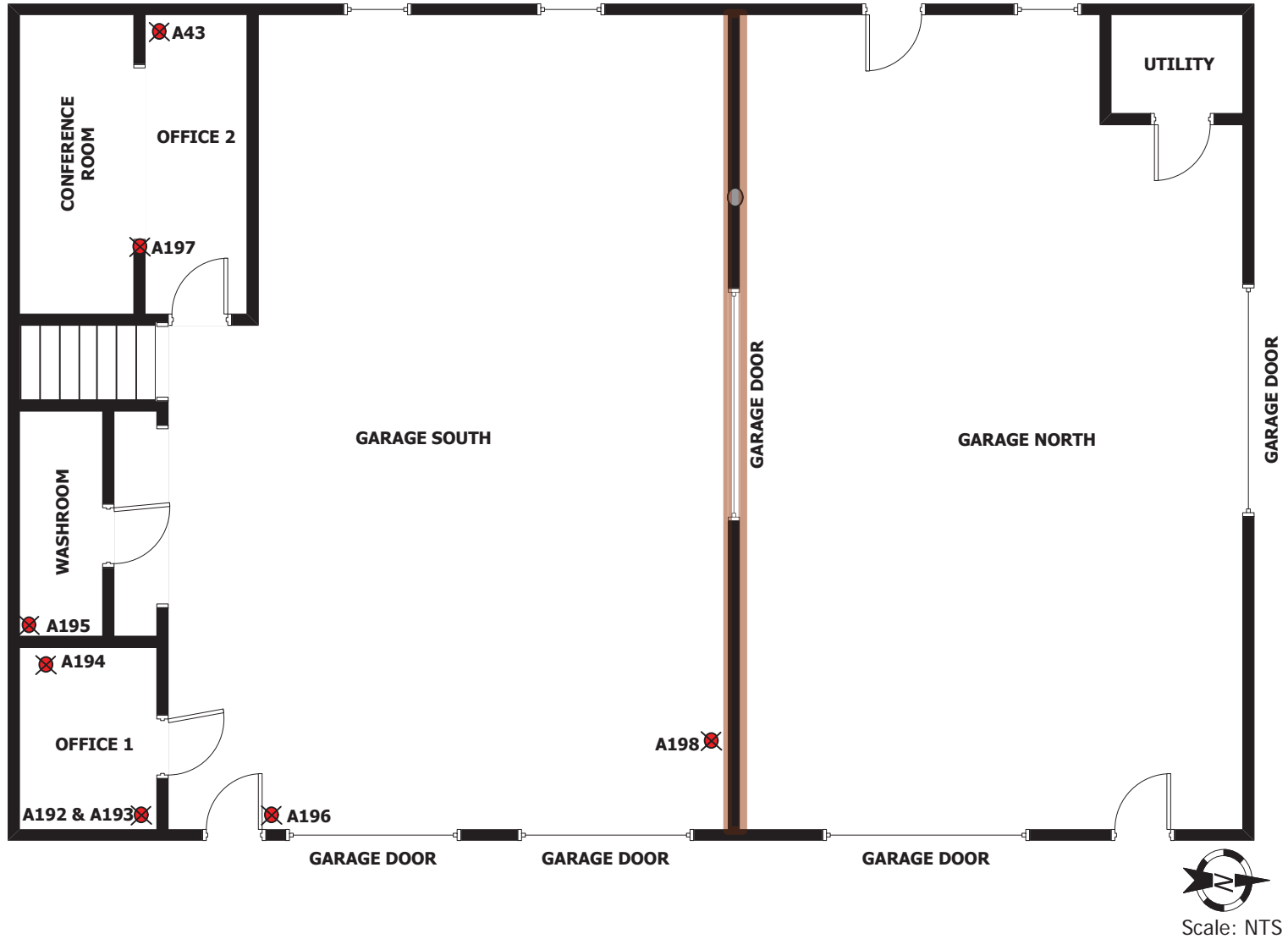
Edited by: ER

Project Location: Beaverlodge Research Centre

2b-20



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos



SITE SAMPLING DIAGRAM: #35 GARAGE
 Main Floor














Date: Feb, 2011 Drawn by: CL
 Edited: Feb, 2011 Edited by: ER

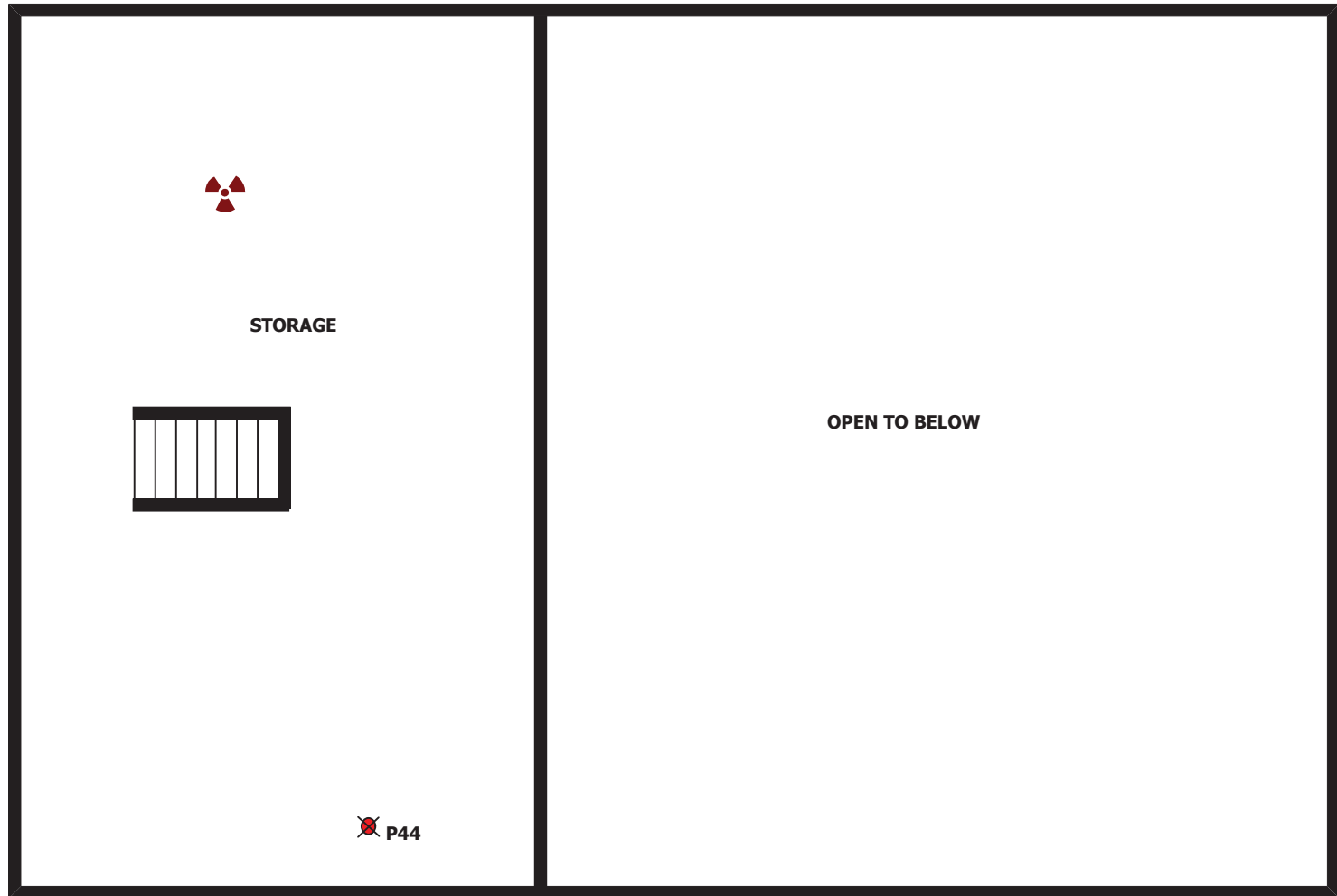
Project Name: Hazardous Materials Assessment
 Project Location: Beaverlodge Research Centre

Project No.: 11166

Appendix
2b-21



- Sample ID
 A = asbestos sample
 P = paint sample
-  Sampling Location
 -  Floor Covering containing Asbestos
 -  Drywall Mud/Stipple/Wall covering containing Asbestos
 -  Wall and/or Attic Insulation containing Asbestos
 -  Pipe/tank insulation containing Asbestos
 -  Ozone Depleting Substance (ODS)
 -  ACM Sink Coating
 -  Radioactive Items
 -  Mercury
 -  Lead paint
 -  Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #35 GARAGE
 Loft



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

**Appendix
 2b-22**

Edited: Feb, 2011

Edited by: ER

Project Location: Beaverlodge Research Centre



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #36 FORAGE BUILDING
Main Floor














Date: Feb, 2011 Drawn by: CL
 Edited: Mar, 2011 Edited by: ER

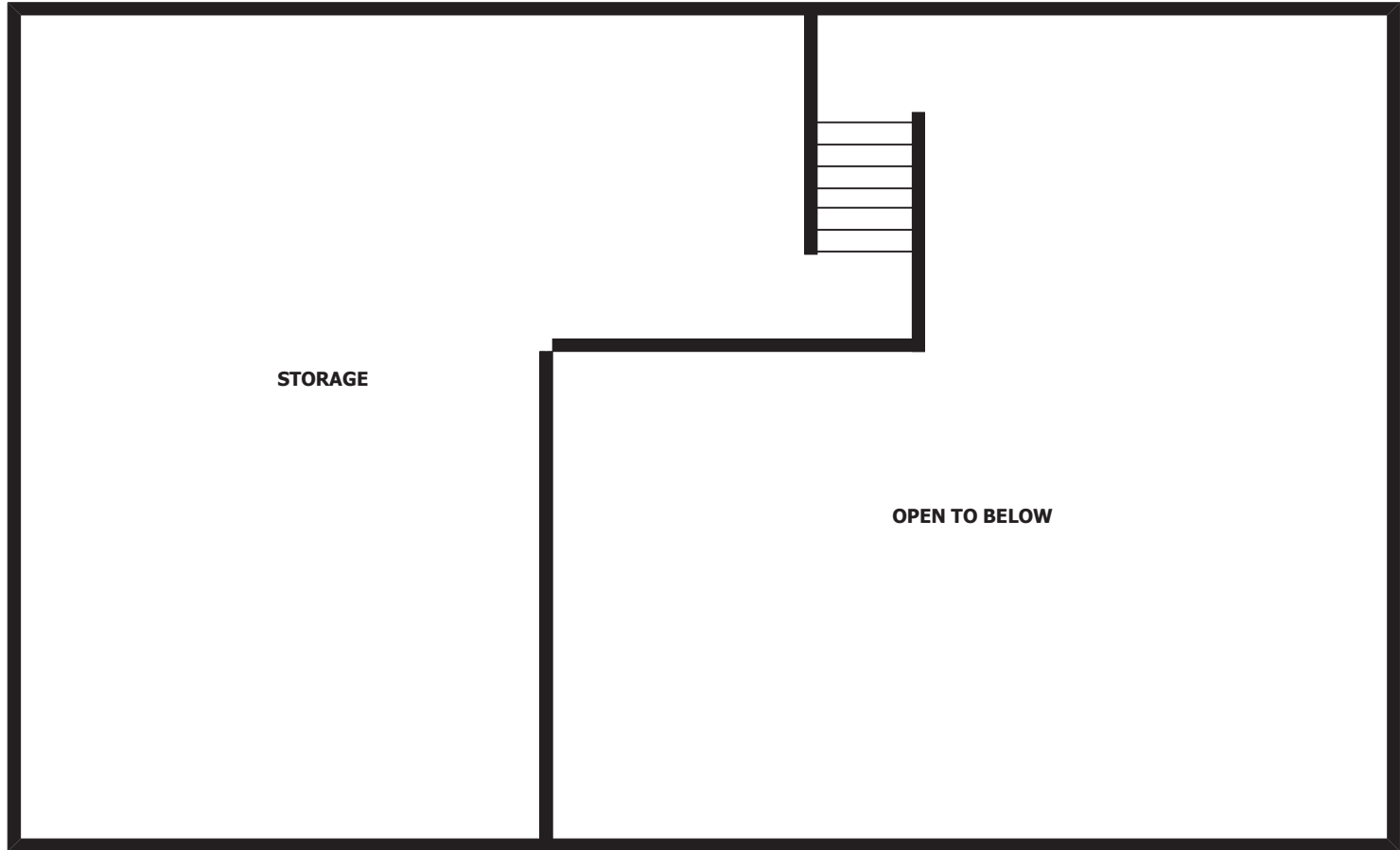
Project Name: Hazardous Materials Assessment
 Project Location: Beaverlodge Research Centre

Project No.: 11166

Appendix
2b-23



- Sample ID
 A = asbestos sample
 P = paint sample
-  Sampling Location
 -  Floor Covering containing Asbestos
 -  Drywall Mud/Stipple/Wall covering containing Asbestos
 -  Wall and/or Attic Insulation containing Asbestos
 -  Pipe/tank insulation containing Asbestos
 -  Ozone Depleting Substance (ODS)
 -  ACM Sink Coating
 -  Radioactive Items
 -  Mercury
 -  Lead paint
 -  Caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #36 FORAGE BUILDING Loft



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix

Edited: Feb, 2011

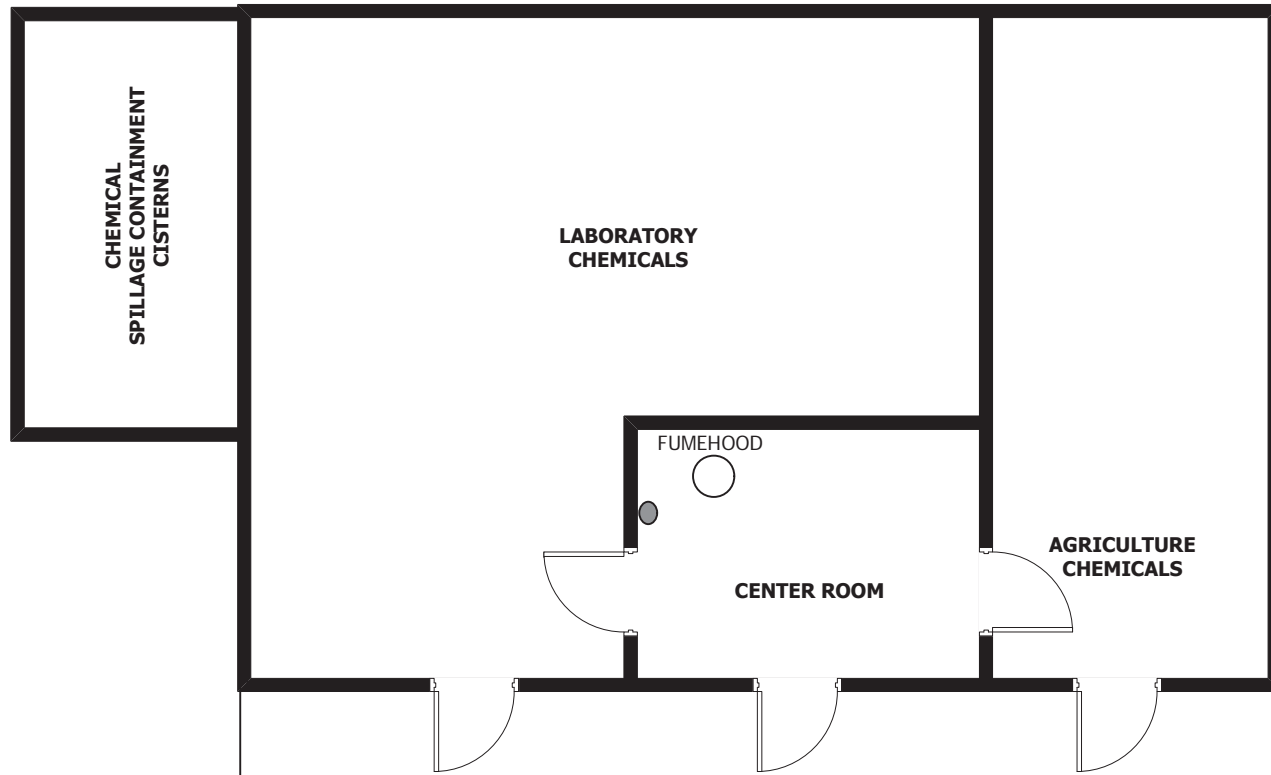
Edited by: ER

Project Location: Beaverlodge Research Centre

2b-24



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #45: CHEMICAL STORAGE

Main



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix












Edited: Feb, 2011

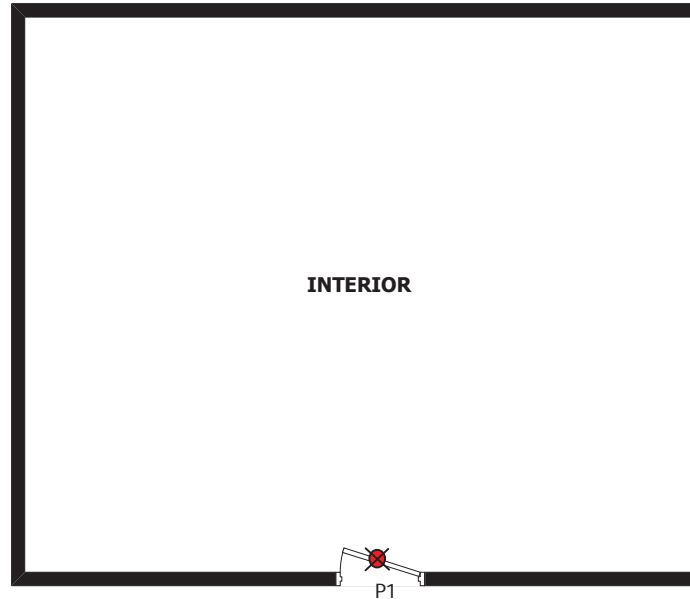
Edited by: ER

Project Location: Beaverlodge Research Centre

2b-25



- Sample ID
 A = asbestos sample
 P = paint sample
-  Sampling Location
 -  Floor Covering containing Asbestos
 -  Drywall Mud/Stipple/Wall covering containing Asbestos
 -  Wall and/or Attic Insulation containing Asbestos
 -  Pipe/tank insulation containing Asbestos
 -  Ozone Depleting Substance (ODS)
 -  ACM Sink Coating
 -  Radioactive Items
 -  Mercury
 -  Lead paint
 -  Caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: CINDERBLOCK STORAGE



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix

Edited: Mar, 2011

Edited by: ER

Project Location: Beaverlodge Research Centre

2b-26



#1: Administration Office

Sample A37: Drywall mud on basement hallway wall



#1: Administration Office

Sample A41 & A75: Brown/white 9x9 floor tile on basement hall floor



#1: Administration Office

Sample A62: Ceiling texture on SW wall of Office 3



#1: Administration Office

Sample A42: Drywall mud on Furnace Room wall

PHOTOGRAPHIC LOG



Taken: CL
Date: March 2011
File No. 11166

Buildings: 1
Parameter: Asbestos

Appendix
2C-1



#1: Administration Office

Sample A46: Sink insulation in dark room



#1: Administration Office

Sample A49: Brown square linoleum on basement conference room floor



#1: Administration Office

Sample A51: Drywall mud on basement conference wall



#1: Administration Office

Sample A53: Sink insulation in basement kitchen

PHOTOGRAPHIC LOG



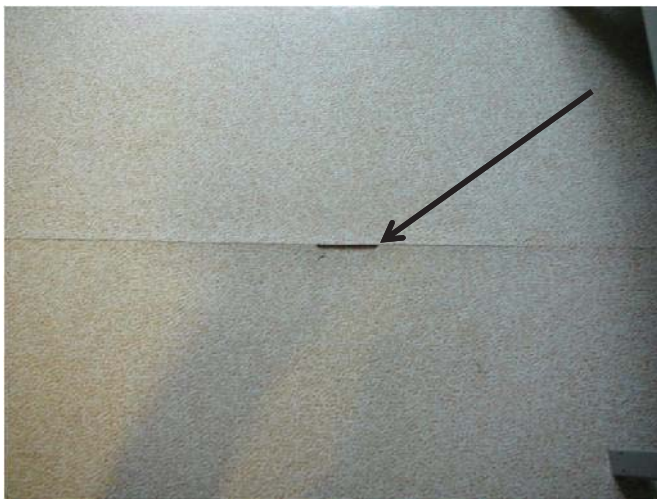
#1: Administration Office

Sample A60: White ceiling texture on main floor hall ceiling



#1: Administration Office

Sample A61: White ceiling texture at east stairs



#1: Administration Office

Sample A56: Brown square linoleum on the main level east storage floor



#1: Administration Office

Sample A33: Brown linoleum on shoe rack in east stairwell.

PHOTOGRAPHIC LOG



#1: Administration Office

Sample A68: Drywall mud on office 20 wall



#1: Administration Office

Sample A70, A71 & A 72: Stucco on exterior of building



#10: Administration Office

Sample A52: Drywall mud on south east Kitchen wall



#10: Canola Laboratory

Sample A126: Drywall mud on second level office 6 wall

PHOTOGRAPHIC LOG



#10: Canola Laboratory

Sample A96: Black/silver light insulation from fixture in second level Office 4



#10: Canola Laboratory

Sample A98: Brown 12x12 floor tile on Office 5 floor



#10: Canola Laboratory

Sample A116 & A117: Light brown & Dark brown 9x9 floor tile on Storage 8 floor



#10: Canola Laboratory

Sample A129: Drywall mud on main level under electrical box wall

PHOTOGRAPHIC LOG



#10: Canola Laboratory

Sample A119: Gray caulking around light in basement storage 8



#10: Canola Laboratory

Sample A128: Drywall mud on closet wall of in 2nd floor storage



#10: Canola Laboratory

Sample A121: White insulation covering boiler in furnace room



#10: Canola Laboratory

Sample A120: White airocell insulation on basement storage 6 pipe

PHOTOGRAPHIC LOG



#10: Canola Laboratory

Sample A102: Black/silver light insulation from fixture in main level storage room



#10: Canola Laboratory

Sample A114 & A 115: Light brown & dark brown 9x9 floor tile on basement storage 7 floor



#10: Canola Laboratory

Sample A118: Black caulking around wiring in basement storage 5



#14: Soils Research Building

Sample A167: Dark gray 9x9 floor tile on second floor power panel room floor

PHOTOGRAPHIC LOG



#14: Soils Research Building

Sample 139: Gray cement board stored in main level southwest lab



#14: Soils Research Building

Sample A153 & A154: Light brown & dark brown 9x9 floor tile under the stairwell



#14: Soils Research Building

Sample A155 & A156: Light brown & dark brown 9x9 floor tile on the main level northwest lab floor



#14: Soils Research Building

Sample A135: Gray 12x12 floor tile on main entry floor under the linoleum

PHOTOGRAPHIC LOG



#14: Soils Research Building

Sample A176: White/gray cement board in 2nd floor hall



#14: Soils Research Building

Sample A141: Bronze sink insulation in southwest lab



#14: Soils Research Building

Sample A143: White/gray 9x9 floor tile on floor in main level southwest lab



#14: Soils Research Building

Sample A146: Drywall mud on furnace room wall.

PHOTOGRAPHIC LOG



#14: Soils Research Building

Sample A158: Drywall mud on main level northwest lab walls



#14: Soils Research Building

Sample A160: Gray sink insulation in main level northeast lab



#14: Soils Research Building

Sample A162: Brown square linoleum on main level northeast lab floor



#14: Soils Research Building

Sample A166: Gray transite board in the 2nd level power panel room

PHOTOGRAPHIC LOG



#14: Soils Research Building

Sample A168: Dark gray 9x9 floor tile on power panel room floor



14: Soils Research Building

Sample A171: White/gray 9x9 floor tile on 2nd level lab 1 floor



#14: Soils Research Building

Sample A177: White/gray cement board in 2nd level office 1 stairwell



14: Soils Research Building

Sample A178: White/gray 9x9 floor tile on 2nd level office 2 floor

PHOTOGRAPHIC LOG



#15: Ecology Building

Sample A9: White/blue 12x12 floor tile on main level north lab floor



#15: Ecology Building

Sample A11: Gray counter top on main level north lab



#15: Ecology Building

Sample A20: Gray counter top on 2nd level desk



#15: Ecology Building

Sample A21: Green counter top on 2nd level desk

PHOTOGRAPHIC LOG



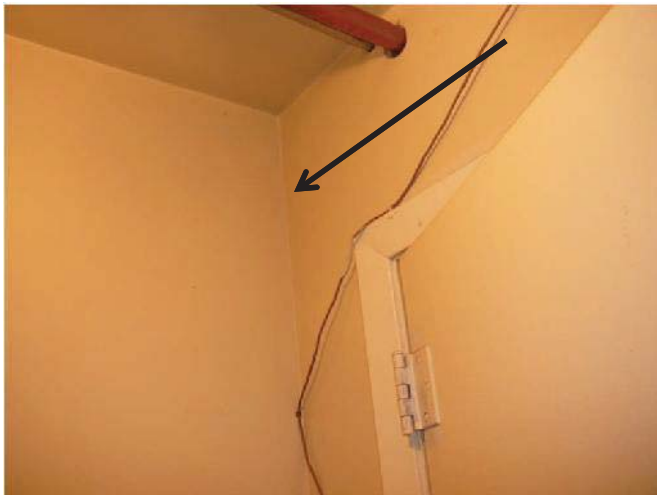
#15: Ecology Building

Sample A7: White/blue 12x12 floor tile on main entrance hall floor



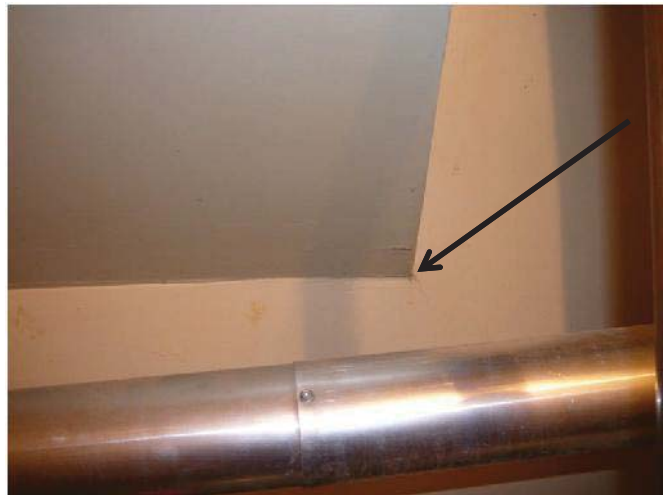
#15: Ecology Building

Sample A18: White/blue 12x12 floor tile on main Hall floor



#15: Ecology Building

Sample A15: Drywall mud on furnace room wall



#15: Ecology Building

Sample A16: Drywall mud on furnace room wall

PHOTOGRAPHIC LOG



#15: Ecology Building

Sample A1: White/silver sink insulation in main level south lab



#15: Ecology Building

Sample A3: White/gray 9x9 floor tile on main level south lab floor



#15: Ecology Building

Sample A4: White/gray 9x9 floor tile on main level south lab floor



#15: Ecology Building

Sample A5: White/gray 9x9 floor tile on main level south storage floor

PHOTOGRAPHIC LOG



#15: Ecology Building

Sample A8: White/blue 12x12 floor tile on main level office floor



#17: Carpenter Shop

Light fixture with backing in storage crawlspace above office



#17: Carpenter Shop

Sample A184: Drywall mud on garage ceiling



#17: Carpenter Shop

Sample A190: Drywall mud on bathroom wall

PHOTOGRAPHIC LOG



#17: Carpenter Shop

Sample A186: Drywall mud on office wall



#17: Carpenter Shop

Sample A187: Gray 12x12 floor tile on office floor



#17: Carpenter Shop

Sample A181: Brown/silver vermiculite in the attic



#17: Carpenter Shop

Sample A182: Brown/silver vermiculite in the attic

PHOTOGRAPHIC LOG



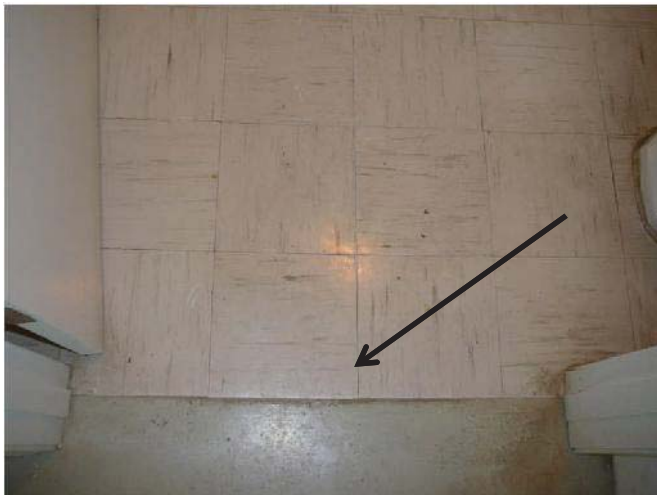
#17: Carpenter Shop

Sample A183 & A185: Brown/silver vermiculite in the attic



#17: Carpenter Shop

Vermiculite spillage in crawlspace above office



#17: Carpenter Shop

Sample A189: Gray 9x9 floor tile in the main floor bathroom



#17: Carpenter Shop

Cement board being stored in the basement

PHOTOGRAPHIC LOG



#18: Apiculture Laboratory

Sample A79: Gray caulking inside basement cooler 2



#18: Apiculture Laboratory

Sample A89, A90 & A91: Vermiculite in the attic



#25: Honey Extraction Building

Water damage on ceiling of bathroom



#26: Storage

Water damage on ceiling in the air drying room

PHOTOGRAPHIC LOG



Taken: CL
Date: March 2011
File No. 11166

Buildings: 18, 25 & 26
Parameter: Asbestos

Appendix
2C-18



#26: Storage

Sample A200: Gray cement board on northwest enclosure in the threshing room



#26: Storage

Sample A201: White/gray 9x9 floor tile on lab 1 floor



#26: Storage

Sample A204: Drywall mud on seed storage wall



#26: Storage

Sample A206: Gray/white cement board on the furnace room wall

PHOTOGRAPHIC LOG



#26: Storage

Sample A208: Drywall mud on air drying room wall



#26: Storage

Sample A207: Drywall mud on furnace room wall



#26: Storage

Sample A216: Drywall mud on Women's washroom wall



#26: Storage

Vermiculite leakage on panel in furnace room

PHOTOGRAPHIC LOG



Taken: CL
Date: March 2011
File No. 11166

Buildings: 26
Parameter: Asbestos

Appendix
2C-20



#26: Storage

Sample A212: Gray cement countertop in office 3



#26: Storage

Sample A214: Green 9x9 floor tile on bathroom hall floor



#26: Storage

Water damage and suspect mould growth in Woman's bathroom



#26: Storage

Evidence of squirrel activity

PHOTOGRAPHIC LOG



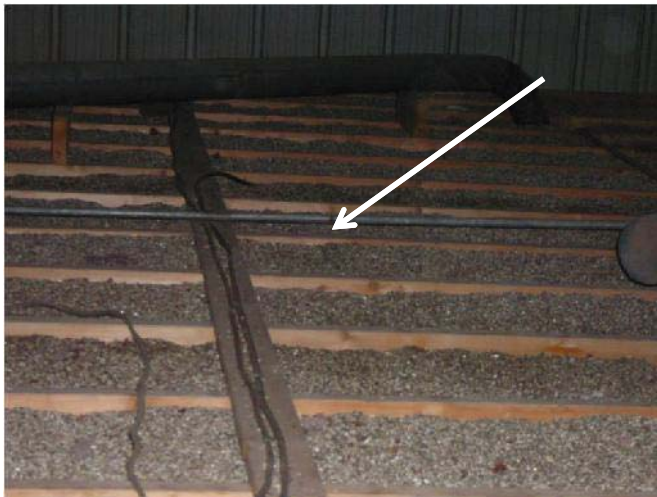
#26: Storage

Sample A217: Drywall mud on office 4 wall



#26: Storage

Sample A224: Drywall mud on main hall wall



#26: Storage

Sample A227: Brown/silver vermiculite in attic



#26: Storage

Sample A225: Brown/silver vermiculite in attic

PHOTOGRAPHIC LOG



#26: Storage

Sample A226: Brown/silver vermiculite in attic



#26: Storage

Sample A218: Drywall mud on the main hall wall



#26: Storage

Sample A199: Drywall mud on the threshing room wall



#26: Storage

Water damage on Threshing room wall

PHOTOGRAPHIC LOG



#26: Storage

Water damage on office 1 wall/ceiling corner



#26: Storage

Vermiculite leakage on floor in seed storage



#26: Storage

Water damage on ceiling in furnace room



#35 Garage

Sample A198: Vermiculite in cinderblock wall separating garage sections

PHOTOGRAPHIC LOG



#1: Administration Office

Sample P14: Black paint on dark room walls and ceiling



#1: Administration Office

Sample P17: White paint on exterior window



#10: Canola Laboratory

Sample P31: White paint on exterior trim



#10: Canola Laboratory

Sample P29: Yellow/white paint on walls and ceiling in storage 2

PHOTOGRAPHIC LOG



#14: Soils Research Building

Sample P37: White paint on trim in office 1



#14: Soils Research Building

Sample P36: White paint on trim in lab 2



#15: Ecology Laboratory

Sample P10: White paint on 2nd floor walls



#17: Carpenter Shop

Sample P38: Blue paint on building exterior

PHOTOGRAPHIC LOG



#18: Apiculture Laboratory

Sample P20: White paint on west side of exterior wall



#15: Ecology Building

Example of water intrusion on fume hood vent



#10: Canola Laboratory

View of flood line in basement



#14: Soils Research Building

Example of water damage at fume hood vent

PHOTOGRAPHIC LOG

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Consl'tg Ltd.
PO Box 87073 RPO Douglas Sq.
Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218815 **Description / Location:** Silver/Grey Insulation
Client No.: A1 (15) South Lab Sinks

<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.4	Chrysotile	None Detected	None Detected	PC 98.6

Lab No.: 4218816 **Description / Location:** White/Tan Ceiling Tile
Client No.: A2 (15) Growth Cabinet

<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.: 4218817 **Description / Location:** White Floor Tile; 9x9
Client No.: A3 (15) South Lab - E Wall

<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.3	Chrysotile	None Detected	None Detected	PC 98.7

Lab No.: 4218817 **Description / Location:** Black Mastic
Client No.: A3 (15) South Lab - E Wall **Layer No.:** 2

<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Approved By:

Date: 2/21/2011

Frank E. Ehrenfeld, III
Laboratory Director



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218818	Description / Location: White Floor Tile; 9x9		
Client No.: A4	(15) South Lab - West Doorway		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 1.2	Chrysotile	None Detected	None Detected
			PC 98.8

Lab No.: 4218818	Description / Location: Black Mastic		Layer No.: 2
Client No.: A4	(15) South Lab - West Doorway		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4218819	Description / Location: White Floor Tile; 9x9		
Client No.: A5	(15) South Storage		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 1.3	Chrysotile	None Detected	None Detected
			PC 98.7

Lab No.: 4218820	Description / Location: White/Tan Ceiling Tile		
Client No.: A6	(15) South Storage		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	98	Cellulose
			2

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218821	Description / Location:	Off-White Floor Tile; 12x12	
Client No.:	A7		(15) West Doorway	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.8	Chrysotile	None Detected	None Detected	PC 98.2

Lab No.:	4218821	Description / Location:	Brown Mastic		Layer No.: 2
Client No.:	A7		(15) West Doorway		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Lab No.:	4218822	Description / Location:	Off-White Floor Tile; 12x12	
Client No.:	A8		(15) Main Floor Office	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.6	Chrysotile	None Detected	None Detected	PC 98.4

Lab No.:	4218822	Description / Location:	Yellow Mastic		Layer No.: 2
Client No.:	A8		(15) Main Floor Office		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218823	Description / Location:	Off-White Floor Tile; 12x12	
Client No.:	A9		(15) Middle Of North Lab	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.8	Chrysotile	None Detected	None Detected	PC 98.2

Lab No.:	4218824	Description / Location:	White/Tan Ceiling Tile	
Client No.:	A10		(15) North Lab	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.:	4218825	Description / Location:	Grey Transite	
Client No.:	A11		(15) North Lab Counter On North Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
20	Chrysotile	None Detected	None Detected	80

Lab No.:	4218826	Description / Location:	Black/Grey Paint/Cementitious	
Client No.:	A12		(15) North Lab Counter On East Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218827	Description / Location: Grey Cementitious		
Client No.: A13	(15) North Lab Fume Hood		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	5	Cellulose
		2	Fibrous Glass
			93

Lab No.: 4218828	Description / Location: Grey Cementitious; (15) North Lab I		
Client No.: A14	Inside Acid Cabinet Under Fume Hood		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	2	Fibrous Glass
			98

Lab No.: 4218829	Description / Location: Lt.Tan Joint Compound		
Client No.: A15	(15) Utility Room NW Corner		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 1.4	Chrysotile	None Detected	None Detected
			PC 98.6

Lab No.: 4218830	Description / Location: Lt.Tan Joint Compound		
Client No.: A16	(15) Utility Room SW Corner		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 1.6	Chrysotile	None Detected	None Detected
			PC 98.4

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218831	Description / Location:	White/Tan Fibrous	
Client No.:	A17		(15) Hallway Bulletin Board	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.:	4218832	Description / Location:	White Floor Tile; 12x12	
Client No.:	A18		(15) Hallway/Utility Room	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 2.1	Chrysotile	None Detected	None Detected	PC 97.9

Lab No.:	4218833	Description / Location:	White/Tan Ceiling Tile	
Client No.:	A19		(15) Main Floor East Entrance	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.:	4218834	Description / Location:	Grey Transite	
Client No.:	A20		(15) 2nd Floor Table Adj. Stairs	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
15	Chrysotile	None Detected	None Detected	85

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218835	Description / Location:	Grey Transite	
Client No.:	A21		(15) 2nd Floor Table Adj. Stairs (East)	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
20	Chrysotile	None Detected	None Detected	80

Lab No.:	4218836	Description / Location:	Tan Fibrous	
Client No.:	A22		(15) Cabinet Counter On E. Wall 2nd Fl.	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	100	Cellulose	None Detected

Lab No.:	4218837	Description / Location:	Tan Fibrous	
Client No.:	A23		(15) Table On S. Wall 2nd Fl.	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	100	Cellulose	None Detected

Lab No.:	4218838	Description / Location:	White/Tan Fibrous	
Client No.:	A24		(15) Door Blt. 1st & 2nd Fl.	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218839	Description / Location:	White/Tan Fibrous	
Client No.:	A25		(15) Ceiling S. Of 3rd Fl. Stairs	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.:	4218840	Description / Location:	Tan/Black Fibrous	
Client No.:	A26		(15) 2nd Fl. Wall SE Corner	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	95	Cellulose	5

Lab No.:	4218841	Description / Location:	Tan Fibrous	
Client No.:	A27		(15) 2nd Fl. Wall NE Corner	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	100	Cellulose	None Detected

Lab No.:	4218842	Description / Location:	Tan Fibrous	
Client No.:	A28		(15) 2nd Fl. Wall NW Side	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	100	Cellulose	None Detected

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218843	Description / Location: Black Tar Paper			
Client No.: A29	(15) 2nd Fl. SE End			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	95	Cellulose	5

Lab No.: 4218844	Description / Location: Black Tar Paper			
Client No.: A30	(15) Main Fl. S. Storage Ceiling			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	95	Cellulose	5

Lab No.: 4218845	Description / Location: Green Vinyl Sheet Flooring			
Client No.: A31	(15) Main Fl. Office			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	10	Cellulose	90

Lab No.: 4218845	Description / Location: Tan Mastic			Layer No.: 2
Client No.: A31	(15) Main Fl. Office			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218846	Description / Location:	Green Vinyl Sheet Flooring	
Client No.:	A32		(15) Middle Of N. Lab	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	10	Cellulose	90

Lab No.:	4218847	Description / Location:	Tan Vinyl Sheet Flooring	
Client No.:	A33		(1) Main, E. Door Shoe Rack	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
25	Chrysotile	None Detected	None Detected	75

Lab No.:	4218848	Description / Location:	White/Tan Plaster	
Client No.:	A34		(1) Bsmt East Stairwell	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	Trace	Hair	100

Lab No.:	4218849	Description / Location:	White Joint Compound	
Client No.:	A35		(1) Bsmt Office Ceiling	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218850	Description / Location: Lt. Grey/Blue/Green Vinyl Sheet Flooring		
Client No.: A36	(1) Bsmt Office At Floor Drain		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	10	Cellulose
		10	Synthetic
			80

Lab No.: 4218851	Description / Location: White Joint Compound		
Client No.: A37	(1) Bsmt Hall		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 2.4	Chrysotile	None Detected	None Detected
			PC 97.6

Lab No.: 4218852	Description / Location: Tan Pipe Wrap		
Client No.: A38	(1) Bsmt Library		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	90	Cellulose
			10

Lab No.: 4218853	Description / Location: White/Tan Ceiling Tile; 12x12		
Client No.: A39	(1) Bsmt Library North Strip		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	98	Cellulose
			2

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218854	Description / Location:	White/Tan Ceiling Tile; 12x12	
Client No.:	A40		(1) Bsmt Library	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.:	4218855	Description / Location:	Grey Floor Tile; 9x9	
Client No.:	A41		(1) Bsmt Hallway	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.6	Chrysotile	None Detected	None Detected	PC 98.4

Lab No.:	4218856	Description / Location:	Lt. Tan Joint Compound	
Client No.:	A42		(1) Bsmt Furance Room	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.8	Chrysotile	None Detected	None Detected	PC 98.2

Lab No.:	4218857	Description / Location:	Yellow/Tan/Black Insulation	
Client No.:	A43		(1) Make-Up Air Duct, Bsmt	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	10	Cellulose	88
		2	Mineral Wool	

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218858	Description / Location:	Silver/Lt.Tan Insulation	
Client No.:	A44		(1) Bsmt, Furnace Room	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4218859	Description / Location:	White/Tan Ceiling Tile; 12x12	
Client No.:	A45		(1) Bsmt, Storage Room	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.:	4218860	Description / Location:	Silver/Black Sink Insulation	
Client No.:	A46		(1) Bsmt, Dark Room	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.4	Chrysotile	None Detected	None Detected	PC 98.6

Lab No.:	4218861	Description / Location:	Black/Tan Fiber Board	
Client No.:	A47		(1) Bsmt, Dark Room	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218862	Description / Location: Lt. Grey/Blue Vinyl Sheet Flooring		
Client No.: A48	(1) Bsmt, Storage Room		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	10	Cellulose
		10	Synthetic
			80

Lab No.: 4218864	Description / Location: White/Tan Vinyl Sheet Flooring		
Client No.: A49	(1) Bsmt, Conference Room		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
25	Chrysotile	None Detected	None Detected
			75

Lab No.: 4218864	Description / Location: White/Tan Ceiling Tile; 12x12		
Client No.: A50	(1) Bsmt, Conference Room		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	98	Cellulose
			2

Lab No.: 4218865	Description / Location: White Joint Compound		
Client No.: A51	(1) Bsmt, SW Corner		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 1.3	Chrysotile	None Detected	None Detected
			PC 98.7

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218866	Description / Location:	White Joint Compound	
Client No.:	A52		(1) Bsmt, Kitchen SE Corner	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.2	Chrysotile	None Detected	None Detected	PC 98.8

Lab No.:	4218867	Description / Location:	Silver/Black Insulation	
Client No.:	A53		(1) Bsmt, Kitchen Sink	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.3	Chrysotile	None Detected	None Detected	PC 98.7

Lab No.:	4218868	Description / Location:	White/Tan Ceiling Tile; 12x12	
Client No.:	A55		(1) Main Hall (Middle)	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.:	4218869	Description / Location:	White/Tan Vinyl Sheet Flooring	
Client No.:	A56		(1) Main Storage East	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
25	Chrysotile	None Detected	None Detected	75

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218870	Description / Location:	Tan Ceiling Tile; 12x12	
Client No.:	A57		(1) Main Office SE Corner	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	100	Cellulose	None Detected

Lab No.:	4218871	Description / Location:	White Plaster	
Client No.:	A58		(1) Main Reception Closet	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4218872	Description / Location:	Lt.Green/White Texture Plaster	
Client No.:	A59		(1) Main Office 1 SW Corner	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4218873	Description / Location:	White/Brown Ceiling Texture	
Client No.:	A60		(1) Main Hall In Front Of Reception	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 3.5	Chrysotile	None Detected	None Detected	PC 96.5

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218874	Description / Location:	White/Brown Ceiling Texture	
Client No.:	A61		(1) Main Hall At East Stairs	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 3.3	Chrysotile	None Detected	None Detected	PC 96.7

Lab No.:	4218875	Description / Location:	White/Brown Ceiling Texture	
Client No.:	A62		(1) Main Office 3 SW Area	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 3.8	Chrysotile	None Detected	None Detected	PC 96.2

Lab No.:	4218876	Description / Location:	White/Tan Ceiling Tile; 12x12	
Client No.:	A63		(1) Main Office 5 SW Corner	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.:	4218877	Description / Location:	White/Tan Ceiling Tile; 12x12	
Client No.:	A64		(1) Main Reception North	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218878	Description / Location: Lt.Pink/White Texture Plaster			
Client No.: A65	(1) Main Office 3 SW Corner			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.: 4218879	Description / Location: White Plaster			
Client No.: A66	(1) 2nd Attic Access, Walls & Ceiling			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	Trace	Hair	100

Lab No.: 4218880	Description / Location: White Plaster			
Client No.: A67	(1) 2nd Office 25 S. Wall			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.: 4218881	Description / Location: White Joint Compound			
Client No.: A68	(1) 2nd Office 20 NW Corner			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.3	Chrysotile	None Detected	None Detected	PC 98.7

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218882	Description / Location:	Tan Insulation	
Client No.:	A69		(1) 2nd Fl. Attic Access	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	100	Cellulose	None Detected

Lab No.:	4218884	Description / Location:	Lt. Grey Stucco	
Client No.:	A70		(1) Exterior Main Entrance	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.3	Chrysotile	None Detected	None Detected	PC 98.7

Lab No.:	4218884	Description / Location:	Lt. Grey Stucco	
Client No.:	A71		(1) Exterior Main Entrance	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.4	Chrysotile	None Detected	None Detected	PC 98.6

Lab No.:	4218885	Description / Location:	Lt. Grey Stucco	
Client No.:	A72		(1) Exterior Main Entrance	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.3	Chrysotile	None Detected	None Detected	PC 98.7

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218886	Description / Location:	White/Tan Ceiling Tile; 12x12	
Client No.:	A73		(1) Bsmt, Library West	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.:	4218887	Description / Location:	White/Tan Ceiling Tile; 12x12	
Client No.:	A74		(1) Bsmt, Library NE	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.:	4218888	Description / Location:	Grey/Brown Floor Tile; 9x9	
Client No.:	A75		(1) Bsmt, Hallway	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.6	Chrysotile	None Detected	None Detected	PC 98.4

Lab No.:	4218889	Description / Location:	White/Grey Cementitious	
Client No.:	A76		(1) Exterior Under Stucco NE Corner	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 0.3	Chrysotile	None Detected	None Detected	PC 99.7

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218890	Description / Location: Grey Cementitious			
Client No.: A77	(1) Exterior Under Stucco N Wall			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.: 4218891	Description / Location: Grey Cementitious			
Client No.: A78	(18) Bsmt, Cooler #7 Outside Wall			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.: 4218892	Description / Location: Lt.Grey Putty			
Client No.: A79	(18) Bsmt, Cooler #2 Inside			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
10	Chrysotile	None Detected	None Detected	90

Lab No.: 4218893	Description / Location: Grey Cementitious			
Client No.: A80	(18) Bsmt, Cooler #2 Inside			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218894	Description / Location: Grey Cementitious		
Client No.: A81	(18) Bsmt, Cooler #4 Ceiling		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4218895	Description / Location: Black/Tan Foam		
Client No.: A82	(18) Bsmt, Cooler Door #2		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4218896	Description / Location: Grey Cementitious		
Client No.: A83	(18) Stairwell On South Wall		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4218897	Description / Location: Tan/Brown Vinyl Sheet Flooring		
Client No.: A84	(18) South Lab		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	25	Cellulose
		5	Fibrous Glass
			70

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218898	Description / Location: White Insulation			
Client No.: A85	(18) South Lab, Sink			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.: 4218899	Description / Location: Grey Cement Board			
Client No.: A86	(18) North Lab, Fume Hood			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	5	Cellulose	93
		2	Fibrous Glass	

Lab No.: 4218900	Description / Location: Grey Cementitious			
Client No.: A87	(18) Exterior On Concrete			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.: 4218901	Description / Location: Black Tar Paper			
Client No.: A88	(18) Exterior SW Corner			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	80	Cellulose	20

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218902	Description / Location:	Tan Vermiculite Insulation	
Client No.:	A89		(18) Attic North	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

Lab No.:	4218903	Description / Location:	Tan Vermiculite Insulation	
Client No.:	A90		(18) Attic South	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218904	Description / Location:	Tan Vermiculite Insulation	
Client No.:	A91		(18) Attic East	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

Lab No.:	4218905	Description / Location:	Tan Plaster	
Client No.:	A92		(18) Chimney On North Side Of Building	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4218906	Description / Location:	Tan Fiber Board	
Client No.:	A93		(10) Office 1 Bulletin Board	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	100	Cellulose	None Detected

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218907	Description / Location:	Tan Vinyl Sheet Flooring	
Client No.:	A94		(10) Office 10	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	20	Cellulose	80

Lab No.:	4218908	Description / Location:	Tan Vinyl Sheet Flooring	
Client No.:	A95		(10) E. Storage 8	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	20	Cellulose	80

Lab No.:	4218909	Description / Location:	Silver/Tan Insulation	
Client No.:	A96		(10) Office 4 Light Fixture Backing	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
95	Chrysotile	None Detected	None Detected	5

Lab No.:	4218910	Description / Location:	White Vinyl Sheet Flooring	
Client No.:	A97		(10) 2nd Fl. Washrooms	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	30	Cellulose	70
		Trace	Fibrous Glass	

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218911	Description / Location: Tan Floor Tile; 12x12			
Client No.: A98	(10) 2nd Fl. Office 5			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.4	Chrysotile	None Detected	None Detected	PC 98.6

Lab No.: 4218911	Description / Location: Yellow Mastic			Layer No.: 2
Client No.: A98	(10) 2nd Fl. Office 5			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.: 4218911	Description / Location: Tan Fibrous			Layer No.: 3
Client No.: A98	(10) 2nd Fl. Office 5			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	100	Cellulose	None Detected

Lab No.: 4218912	Description / Location: White/Tan Ceiling Tile; 12x12			
Client No.: A99	(10) 2nd Fl. Hallway Middle			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218913	Description / Location:	White/Tan Ceiling Tile; 12x12	
Client No.:	A100		(10) 2nd Fl. Hallway NE	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.:	4218914	Description / Location:	White/Tan Ceiling Tile; 12x12	
Client No.:	A101		(10) Main Fl. At Breaker Box	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.:	4218915	Description / Location:	Brown Wall Tile	
Client No.:	A103		(10) Main Entrance Hall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	30	Cellulose	70

Lab No.:	4218916	Description / Location:	White/Tan Fiberboard	
Client No.:	A104		(10) Main Fl. Hall Bulletin Board	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218917	Description / Location:	White/Tan Ceiling Tile	
Client No.:	A105		(10) Main Fl. SW Lab	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.:	4218918	Description / Location:	White/Tan Ceiling Tile	
Client No.:	A106		(10) Main Fl. SE Lab East Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.:	4218919	Description / Location:	Grey/Tan Wall Tile	
Client No.:	A107		(10) Main Fl. SW Lab	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	30	Cellulose	70

Lab No.:	4218920	Description / Location:	Green Vinyl Sheet Flooring	
Client No.:	A108		(10) Main Fl. Btwn SW/NW Lab	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	25	Cellulose	75

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218921	Description / Location:	Lt. Grey Fibrous	
Client No.:	A109		(10) Main Fl. NW Lab Fume Hood	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	60	Cellulose	40

Lab No.:	4218922	Description / Location:	Grey Cementitious	
Client No.:	A110		(10) Main Fl. NW Lab Sink Back Spash	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4218923	Description / Location:	Brown Fiberboard	
Client No.:	A111		(10) Main Fl. N. Entry Stairwell	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	100	Cellulose	None Detected

Lab No.:	4218924	Description / Location:	White/Grey Stucco	
Client No.:	A131		(10) Exterior N. Wall Entrance	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218925	Description / Location:	White/Grey Stucco	
Client No.:	A132		(10) Exterior S. Main Entrance	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4218926	Description / Location:	White/Grey Stucco	
Client No.:	A133		(10) Exterior NE Corner	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4218927	Description / Location:	Grey Fibrous	
Client No.:	A134		(10) Exterior N. Wall Entrance	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	100	Cellulose	None Detected

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218928	Description / Location: Lt. Tan Floor Tile; 12x12		
Client No.: A135	(14) Entry Tile Under Lino.		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 1.5	Chrysotile	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			PC 98.5

Lab No.: 4218928	Description / Location: Tan Mastic		Layer No.: 2
Client No.: A135	(14) Entry Tile Under Lino.		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			100

Lab No.: 4218929	Description / Location: Tan Ceiling Tile; 12x12		
Client No.: A136	(14) Entry		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	100	Cellulose
			<u>% Non-Fibrous Material</u>
			None Detected

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218930	Description / Location:	Lt. Tan Floor Tile; 9x9	
Client No.:	A137		(14) Porch	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC Trace	Chrysotile	None Detected	None Detected	100

Lab No.:	4218930	Description / Location:	Black Mastic		Layer No.:	2
Client No.:	A137		(14) Porch			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>		
None Detected	None Detected	3	Cellulose	97		

Lab No.:	4218931	Description / Location:	Grey Stucco			
Client No.:	A138		(14) Porch, West Building Wall			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>		
None Detected	None Detected	None Detected	None Detected	100		

Lab No.:	4218932	Description / Location:	Grey Transite			
Client No.:	A139		(14) SW Lab, Leaning On Wall X2			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>		
25	Chrysotile	None Detected	None Detected	75		

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218933	Description / Location:	White Non Fibrous	
Client No.:	A140		(14) SW Lab, SW Corner	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4218934	Description / Location:	Brown Insulation	
Client No.:	A141		(14) SW Lab, Sinks	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 2.3	Chrysotile	None Detected	None Detected	PC 97.7

Lab No.:	4218935	Description / Location:	Tan Ceiling Tile; 12x12	
Client No.:	A142		(14) SW Lab	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	100	Cellulose	None Detected

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218936	Description / Location:	Lt. Tan Floor Tile; 9x9	
Client No.:	A143		(14) SW Lab	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC Trace	Chrysotile	None Detected	None Detected	100

Lab No.:	4218936	Description / Location:	Black Mastic		Layer No.:	2
Client No.:	A143		(14) SW Lab			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>		
PC 1.3	Chrysotile	1	Cellulose	PC 97.7		

Lab No.:	4218937	Description / Location:	Lt. Grey Non Fibrous	
Client No.:	A144		(14) Furnace Room N. Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218938	Description / Location: Off-White Floor Tile; 12x12		
Client No.: A145	(14) Furnace Room		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4218938	Description / Location: Black Mastic		Layer No.: 2
Client No.: A145	(14) Furnace Room		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	2	Cellulose
			98

Lab No.: 4218939	Description / Location: Off-White Joint Compound		
Client No.: A146	(14) Furnace Room, Walls		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 2.1	Chrysotile	None Detected	None Detected
			PC 97.9

Lab No.: 4218940	Description / Location: Off-White Insulation		
Client No.: A147	(14) Washroom, Sink		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218941	Description / Location:	Tan Ceiling Tile	
Client No.:	A148		(14) Washroom	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	35	Cellulose	45
		20	Fibrous Glass	

Lab No.:	4218942	Description / Location:	White/Black Fibrous	
Client No.:	A149		(14) Storage Ceiling	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	75	Cellulose	25

Lab No.:	4218943	Description / Location:	Off-White Fibrous	
Client No.:	A150		(14) Growth Chamber Room Ceiling	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 2.1	Chrysotile	None Detected	None Detected	PC 97.9

Lab No.:	4218944	Description / Location:	Tan Ceiling Tile	
Client No.:	A151		(14) Main Fl. Hall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	35	Cellulose	45
		20	Fibrous Glass	

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218945	Description / Location:	Dk.Tan Ceiling Tile	
Client No.:	A152		(14) Growth Chamber Room	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	99	Cellulose	1

Lab No.:	4218946	Description / Location:	Dk.Tan Floor Tile; 9x9	
Client No.:	A153		(14) Under Stairs	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 3.5	Chrysotile	None Detected	None Detected	PC 99.5

Lab No.:	4218946	Description / Location:	Black Mastic	Layer No.: 2
Client No.:	A153		(14) Under Stairs	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.2	Chrysotile	1	Cellulose	PC 97.8

Lab No.:	4218947	Description / Location:	Dk.Tan Floor Tile; 9x9	
Client No.:	A154		(14) Under Stairs	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 4.7	Chrysotile	None Detected	None Detected	PC 95.3

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218948	Description / Location:	Dk.Tan Floor Tile; 9x9	
Client No.:	A155		(14) NW Lab	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.5	Chrysotile	None Detected	None Detected	PC 98.5

Lab No.:	4218948	Description / Location:	Black Mastic		Layer No.: 2
Client No.:	A155		(14) NW Lab		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
PC Trace	Chrysotile	3	Cellulose	97	

Lab No.:	4218949	Description / Location:	Dk.Tan Floor Tile; 9x9	
Client No.:	A156		(14) NW Lab	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 4.8	Chrysotile	None Detected	None Detected	PC 95.2

Lab No.:	4218949	Description / Location:	Black Mastic		Layer No.: 2
Client No.:	A156		(14) NW Lab		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
PC 1.2	Chrysotile	1	Cellulose	PC 97.8	

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218950	Description / Location:	Grey Cement	
Client No.:	A157		(14) NW Lab Fume Hood	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	10	Cellulose	85
		5	Fibrous Glass	

Lab No.:	4218951	Description / Location:	Off-White Fibrous	
Client No.:	A158		(14) NW Lab Ceiling	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.8	Chrysotile	None Detected	None Detected	PC 98.2

Lab No.:	4218952	Description / Location:	Lt. Grey Non Fibrous	
Client No.:	A159		(14) NW Lab North Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4218953	Description / Location:	Brown Insulation	
Client No.:	A160		(14) NE Lab Sinks	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.7	Chrysotile	None Detected	None Detected	PC 98.3

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218954	Description / Location:	Tan Ceiling Tile	
Client No.:	A161		(14) NE Lab	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	99	Cellulose	1

Lab No.:	4218955	Description / Location:	Off-White Vinyl Sheet Flooring	
Client No.:	A162		(14) NE Lab West Corner	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
20	Chrysotile	10	Cellulose	70

Lab No.:	4218956	Description / Location:	Dk. Tan Ceiling Tile	
Client No.:	A163		(14) NE Lab East	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	99	Cellulose	1

Lab No.:	4218957	Description / Location:	Dk. Tan Ceiling Tile	
Client No.:	A164		(14) NE Lab South	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	99	Cellulose	1

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218958	Description / Location: Sample Not Received		
Client No.: A165	(14) NE Lab South		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
Sample Not Received		Sample Not Received	

Lab No.: 4218959	Description / Location: Grey Transite		
Client No.: A166	(14) Up Power Panel Room		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
25	Chrysotile	None Detected	None Detected
			75

Lab No.: 4218960	Description / Location: Grey Floor Tile; 9x9		
Client No.: A167	(14) Up Power Panel Room		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 4.8	Chrysotile	None Detected	None Detected
			PC 95.2

Lab No.: 4218960	Description / Location: Black Mastic		Layer No.: 2
Client No.: A167	(14) Up Power Panel Room		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	1	Cellulose
			99

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218961	Description / Location: Grey Floor Tile; 9x9		
Client No.: A168	(14) Up Power Panel Room		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 1.7	Chrysotile	None Detected	None Detected
			PC 98.3

Lab No.: 4218961	Description / Location: Black Mastic		Layer No.: 2
Client No.: A168	(14) Up Power Panel Room		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	1	Cellulose
			99

Lab No.: 4218962	Description / Location: Tan/White Ceiling Tile; 12x12		
Client No.: A169	(14) Lab 1		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	95	Cellulose
			5

Lab No.: 4218963	Description / Location: Off-White Insulation		
Client No.: A170	(14) Lab 1, Sinks		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218964	Description / Location: Off-White Floor Tile; 9x9		
Client No.: A171	(14) Lab 1, N. Wall		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 1.3	Chrysotile	None Detected	None Detected
			PC 98.7

Lab No.: 4218964	Description / Location: Black Mastic		Layer No.: 2
Client No.: A171	(14) Lab 1, N. Wall		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4218965	Description / Location: Off-White Insulation		
Client No.: A172	(14) Lab 2, N. Sink		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4218966	Description / Location: Tan/White Insulation		
Client No.: A173	(14) Lab 2, N. Ceiling		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	98	Cellulose
			2

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218967	Description / Location: Off-White Floor Tile; 9x9		
Client No.: A174	(14) Lab 2, NE Corner		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 0.75	Chrysotile	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			PC 99.25

Lab No.: 4218967	Description / Location: Black Mastic		Layer No.: 2
Client No.: A174	(14) Lab 2, NE Corner		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			100

Lab No.: 4218968	Description / Location: Tan/White Ceiling Tile; 12x12		
Client No.: A175	(14) Upstairs, Hall S. Wall		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	98	Cellulose
			<u>% Non-Fibrous Material</u>
			2

Lab No.: 4218969	Description / Location: Grey Transite		
Client No.: A176	(14) Upstairs, Hall SW Corner		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
25	Chrysotile	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			75

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218970	Description / Location:	Grey Transite	
Client No.:	A177		(14) Office 1 Ceiling, Above Stairs	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
25	Chrysotile	None Detected	None Detected	75

Lab No.:	4218971	Description / Location:	Off-White Floor Tile; 9x9	
Client No.:	A178		(14) Office 2, NE Corner	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.3	Chrysotile	None Detected	None Detected	PC 98.7

Lab No.:	4218972	Description / Location:	Grey Stucco	
Client No.:	A179		(14) Exterior, North Door	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4218973	Description / Location:	Grey Stucco	
Client No.:	A180		(14) Exterior, SW Corner	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218974	Description / Location:	Tan Vermiculite Insulation	
Client No.:	A181		(17) Attic, SE Access	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 0.25	Actinolite	None Detected	None Detected	PC 99.75

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

Lab No.:	4218975	Description / Location:	Tan Vermiculite Insulation	
Client No.:	A182		(17) Attic, SE Access	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 0.25	Actinolite	None Detected	None Detected	PC 99.75

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: T. Fisher

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218976	Description / Location:	Tan Vermiculite Insulation	
Client No.:	A183		(17) Attic, SE Access	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC Trace	Actinolite	None Detected	None Detected	100

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gänge, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

Lab No.:	4218977	Description / Location:	Tan Joint Compound	
Client No.:	A184		(17) Garage, Ceiling SE	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 2.4	Chrysotile	None Detected	None Detected	PC 97.6

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218978	Description / Location:	Tan Vermiculite Insulation	
Client No.:	A185		(17) Attic SW Access	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 0.25	Actinolite	None Detected	None Detected	PC 99.75

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gänge, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

Lab No.:	4218979	Description / Location:	White Joint Compound	
Client No.:	A186		(17) Office SW Corner	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.5	Chrysotile	None Detected	None Detected	PC 98.5

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218980	Description / Location: Tan Floor Tile; 12x12		
Client No.: A187	(17) Office Door		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 1.7	Chrysotile	None Detected	None Detected
			PC 98.3

Lab No.: 4218980	Description / Location: Tan Mastic		Layer No.: 2
Client No.: A187	(17) Office Door		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4218981	Description / Location: Tan Floor Tile; 12x12		
Client No.: A188	(17) Office Middle		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4218981	Description / Location: Tan Mastic		Layer No.: 2
Client No.: A188	(17) Office Middle		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218982	Description / Location: Off-White Floor Tile; 9x9		
Client No.: A189	(17) Bathroom		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 1.6	Chrysotile	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			PC 98.4

Lab No.: 4218982	Description / Location: Tan Mastic		Layer No.: 2
Client No.: A189	(17) Bathroom		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			100

Lab No.: 4218983	Description / Location: Tan Joint Compound		
Client No.: A190	(17) Bathroom, NE Corner		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 2.7	Chrysotile	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			PC 97.3

Lab No.: 4218984	Description / Location: Off-White/White Caulk		
Client No.: A191	(17) SE Window		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218985	Description / Location:	Off-White Floor Tile; 9x9	
Client No.:	A192		(35) Office 1 Floor, NE	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 0.25	Chrysotile	None Detected	None Detected	PC 99.75

Lab No.:	4218986	Description / Location:	Off-White Floor Tile; 12x12	
Client No.:	A193		(35) Office 1 Floor, NE	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 0.75	Chrysotile	None Detected	None Detected	PC 99.25

Lab No.:	4218986	Description / Location:	Tan Mastic	Layer No.: 2
Client No.:	A193		(35) Office 1 Floor, NE	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4218987	Description / Location:	Tan/White Ceiling Tile; 12x12	
Client No.:	A194		(35) Office 1, SW Corner	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	95	Cellulose	5

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218988	Description / Location:	Tan/White Ceiling Tile; 12x12	
Client No.:	A195		(35) Washroom	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	95	Cellulose	5

Lab No.:	4218989	Description / Location:	Tan/White Ceiling Tile; 12x12	
Client No.:	A196		(35) Main Entry West Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	95	Cellulose	5

Lab No.:	4218990	Description / Location:	White Joint Compound	
Client No.:	A197		(35) Office 2	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218991	Description / Location:	Brown Vermiculite Insulation	
Client No.:	A198		(35) Cinderblock Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gangue, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

Lab No.:	4218992	Description / Location:	White Joint Compound	
Client No.:	A199		(26) Thrushing Room, NW Enclosure	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 3.3	Chrysotile	None Detected	None Detected	PC 96.7

Lab No.:	4218993	Description / Location:	Grey Transite	
Client No.:	A200		(26) Thrushing Room, NW Enclosure	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
25	Chrysotile	None Detected	None Detected	75

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218994	Description / Location: Off-White Floor Tile; 9x9		
Client No.: A201	(26) Lab 1, South		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 0.25	Chrysotile	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			PC 99.75

Lab No.: 4218994	Description / Location: Tan Mastic		Layer No.: 2
Client No.: A201	(26) Lab 1, South		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			100

Lab No.: 4218995	Description / Location: Grey/Off-White Tape		
Client No.: A202	(26) Lab 1, NE Pipe		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	25	Synthetic
			<u>% Non-Fibrous Material</u>
			75

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4218996	Description / Location: White Floor Tile; 12x12		
Client No.: A203	(26) Office 1		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			100

Lab No.: 4218996	Description / Location: Black Mastic		Layer No.: 2
Client No.: A203	(26) Office 1		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			100

Lab No.: 4218997	Description / Location: White Joint Compound		
Client No.: A204	(26) Seed Storage		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 3.2	Chrysotile	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			PC 96.8

Lab No.: 4218998	Description / Location: Tan/Black Non Fibrous		
Client No.: A205	(26) Cooler Door		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218999	Description / Location:	Grey Transite	
Client No.:	A206		(26) Furnace Room, South Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
25	Chrysotile	None Detected	None Detected	75

Lab No.:	4219000	Description / Location:	White Joint Compound	
Client No.:	A207		(26) Furnace Room, East Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 3.7	Chrysotile	None Detected	None Detected	PC 96.3

Lab No.:	4219001	Description / Location:	Off-White Joint Compound	
Client No.:	A208		(26) Air Drying Room	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 2.5	Chrysotile	None Detected	None Detected	PC 97.5

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4219002	Description / Location:	Off-White Floor Tile; 9x9	
Client No.:	A209		(26) Office 2 SW Corner	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 0.5	Chrysotile	None Detected	None Detected	PC 99.5

Lab No.:	4219002	Description / Location:	Tan Mastic		Layer No.: 2
Client No.:	A209		(26) Office 2 SW Corner		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Lab No.:	4219003	Description / Location:	Off-White Floor Tile; 9x9	
Client No.:	A210		(26) Lab 3, South Side	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 0.75	Chrysotile	None Detected	None Detected	PC 99.25

Lab No.:	4219003	Description / Location:	Tan Mastic		Layer No.: 2
Client No.:	A210		(26) Lab 3, South Side		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4219004	Description / Location:	Off-White Floor Tile; 9x9	
Client No.:	A211		(26) Office 3	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC Trace	Chrysotile	None Detected	None Detected	100

Lab No.:	4219004	Description / Location:	Tan Mastic		Layer No.: 2
Client No.:	A211		(26) Office 3		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Lab No.:	4219005	Description / Location:	Grey Transite	
Client No.:	A212		(26) Office 3, South & East Walls	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
25	Chrysotile	None Detected	None Detected	75

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4219006	Description / Location: Green Floor Tile; 9x9			
Client No.: A213	(20) Bathroom, Hall North			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 0.5	Chrysotile	None Detected	None Detected	PC 99.5

Lab No.: 4219006	Description / Location: Tan Mastic			Layer No.: 2
Client No.: A213	(20) Bathroom, Hall North			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.: 4219007	Description / Location: Green Floor Tile; 9x9			
Client No.: A214	(26) Bathroom, Hall South			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.3	Chrysotile	None Detected	None Detected	PC 98.7

Lab No.: 4219007	Description / Location: Black Mastic			Layer No.: 2
Client No.: A214	(26) Bathroom, Hall South			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4219008	Description / Location:	Green Floor Tile; 9x9	
Client No.:	A215		(26) Women's, Bathroom West	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 0.25	Chrysotile	None Detected	None Detected	PC 99.75

Lab No.:	4219008	Description / Location:	Black Mastic		Layer No.: 2
Client No.:	A215		(26) Women's, Bathroom West		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Lab No.:	4219009	Description / Location:	Off-White Joint Compound	
Client No.:	A216		(26) Women's, Bathroom West	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 3.1	Chrysotile	None Detected	None Detected	PC 96.9

Lab No.:	4219010	Description / Location:	Off-White Joint Compound	
Client No.:	A217		(26) Office 4, East Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 2.9	Chrysotile	None Detected	None Detected	PC 97.1

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4219011	Description / Location:	Off-White Joint Compound	
Client No.:	A218		(26) Main Hall, South (Center) Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 2.7	Chrysotile	None Detected	None Detected	PC 97.3

Lab No.:	4219012	Description / Location:	White Caulk	
Client No.:	A219		(14) Exterior, South Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4219013	Description / Location:	Off-White Glazing	
Client No.:	A220		(14) Exterior, South Window	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4219014	Description / Location:	Grey Cementitious	
Client No.:	A221		(14) Exterior, Bsmt Wall West	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4219015	Description / Location:	Grey Cementitious	
Client No.:	A222		(14) Exterior, Bsmt Wall South	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4219016	Description / Location:	Grey Cementitious	
Client No.:	A223		(14) Exterior, Bsmt Wall East	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4219017	Description / Location:	Tan Joint Compound	
Client No.:	A224		(26) Main Hall At Attic Stairs	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 2.0	Chrysotile	None Detected	None Detected	98

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4219018	Description / Location:	Tan Vermiculite Insulation	
Client No.:	A225		Attic NW	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 0.75	Actinolite	None Detected	None Detected	PC 99.25

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

Lab No.:	4219019	Description / Location:	Tan Vermiculite Insulation	
Client No.:	A226		Attic Middle East	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.25	Actinolite	None Detected	None Detected	PC 98.75

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: T. Fisher

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4219020	Description / Location:	Tan Vermiculite Insulation	
Client No.:	A227		Attic South East	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.5	Actinolite	None Detected	None Detected	PC 98.5

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

Lab No.:	4219021	Description / Location:	Tan Wire Insulation	
Client No.:	A228		Attic Centre	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.:	4219022	Description / Location:	Grey Cementitious	
Client No.:	Dup1			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	2	Fibrous Glass	98

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4219023	Description / Location:	Tan Ceiling Tile	
Client No.:	Dup2			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	98	Cellulose	2

Lab No.:	4219024	Description / Location:	Off-White Cementitious	
Client No.:	Dup3			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.2	Chrysotile	None Detected	None Detected	PC 98.8

Lab No.:	4219025	Description / Location:	Off-White Floor Tile	
Client No.:	Dup4			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.2	Chrysotile	None Detected	None Detected	PC 98.8

Lab No.:	4219025	Description / Location:	Tan Mastic	Layer No.: 2
Client No.:	Dup4			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4219026	Description / Location: Green Vinyl Sheet Flooring	
Client No.: Dup5		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>
None Detected	None Detected	10
		<u>Type</u>
		Cellulose
		<u>% Non-Fibrous Material</u>
		90

Lab No.: 4219027	Description / Location: Grey Insulation	
Client No.: Dup6		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>
85	Chrysotile	5
		<u>Type</u>
		Cellulose
		<u>% Non-Fibrous Material</u>
		10

Lab No.: 4219028	Description / Location: Off-White Floor Tile	
Client No.: Dup7		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>
None Detected	None Detected	None Detected
		<u>Type</u>
		None Detected
		<u>% Non-Fibrous Material</u>
		100

Lab No.: 4219028	Description / Location: Black Mastic		Layer No.: 2
Client No.: Dup7			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	100
		<u>Type</u>	
		None Detected	

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4219029	Description / Location:	Grey Transite	
Client No.:	Dup8			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
25	Chrysotile	None Detected	None Detected	75

Lab No.:	4219030	Description / Location:	Tan Joint Compound	
Client No.:	Dup9			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.9	Chrysotile	None Detected	None Detected	PC 98.1

Lab No.:	4219031	Description / Location:	Pink/White/Tan Joint Compound	
Client No.:	Dup10			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.2	Chrysotile	None Detected	None Detected	PC 98.8

Lab No.:	4219032	Description / Location:	Off-White Floor Tile	
Client No.:	Dup11			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.1	Chrysotile	None Detected	None Detected	PC 98.9

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4219033	Description / Location:	Grey Transite		
Client No.:	Dup12				
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
25	Chrysotile	None Detected	None Detected	75	

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: B. Hargrove

Date: 2/21/2011

NOTICE OF ANALYTICAL CAPABILITIES

Client: Ballast Enviro. Conslt'g Ltd.
PO Box87073 RPO DouglasSq.
Calgary AB T2Z 3V7

Notice Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

This notice is not intended to replace the Certificate of Analysis or other data associated with the analysis of bulk materials. Instead, IATL has observed that the samples may not fit standard methods usually prescribed for the analysis of asbestos. We hope to communicate these observations so that more appropriate means of analysis may be considered. Please call the Laboratory Director for specific alternatives or further explanation of this notice.

Discussion:

The above referenced sample(s) were submitted for asbestos analysis via the EPA Method 600/R-93.116 "Method for the Determination of Asbestos in Bulk Building Materials". This method specifies the use of Polarized Light Microscopy (PLM) as the instrumental technique of choice to differentiate the fibrous components of a bulk sample and to quantify these components into percent by volume categories. This analytical method has appendent procedures that encompass other related asbestos techniques. These include procedures for the quantitative regimen of point counting and the gravimetric reduction of certain materials for analysis by PLM and Transmission Electron Microscopy (TEM) for results in weight percentages. Though an excellent method for building materials, it may not be adequate or the results may be limited by the following factors:

- Sample submitted on matrix material (soil, dust, debris, etc.) that may interfere with the detection of suspect asbestos fibers.
- Optical techniques (PLM) have limited resolution and may miss fine or small fibers inherent in many building products or that may have been released from building products into the atmosphere and on to surfaces.
- The method is limited to bulk building materials.
- The method requires minimum sampling 15 cc of material for verifiable quantitative results.
- The method may not produce detection levels now required for certain health and safety recommendations.
- Other established matrix specific methods may be more applicable.

Recommendations:

IATL recommends the following alternative to either the sampling protocol and/or analytical methodology to improve both qualitative and quantitative results:

- ASTM D5755-02 "Standard Method for Microvacuum Sampling and Indirect Analysis of Surface Dust by TEM for Asbestos Structure Concentrations on Surfaces".
- ASTM D5756-02 "Standard Method for Microvacuum Sampling and Indirect Analysis of Surface Dust by TEM for Asbestos Mass Concentrations".
- ASTM D6480-99 "Standard Method for Wipe Sampling of Surfaces, Indirect Preparation, and Analysis for Asbestos Structure Concentrations".
- EPA Region I Proprietary Method for the Determination of Asbestos in Soils, Sludges, and Sediments by PLM.
- Modified EPA Region I Proprietary Method for the Determination of Asbestos in Soils, Sludges, and Sediments by TEM.
- CARB 435 Method Determination of Asbestos Content in Serpentine Aggregate.
- EPA 600/R-04/004 Research Method for Sampling and Analysis of Fibrous Amphibole in Vermiculite Attic Insulation. [SEE PAGE 2 OF THIS DOCUMENT FOR FURTHER INFORMATION]

Recommendations for Vermiculite Analysis:

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gänge, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004).

Further information on this method and other vermiculite and asbestos issues can be found at the following: Agency for Toxic Substances and Disease Registry (ATSDR) www.atsdr.cdc.gov, United States Geological Survey (USGS) www.minerals.usgs.gov/minerals/, US EPA www.epa.gov/asbestos. The USEPA also has an informative brochure "Current Best Practices for Vermiculite Attic Insulation" EPA 747F03001 May 2003, that may assist the health and remediation professional.

The following is a summary of the analytical process outlined in the EPA 600/R-04/004 Method:

<u>Analytical Step/Method</u>	<u>Requirements/Comments</u>	<u>Pricing/TurnAroundTimes</u>
1. Initial Screening by PLM EPA 600R-93/116	Minimum 0.1g of sample ~0.25% LOQ for most samples	\$35.00 - \$50.00 3-5 Day to Same Day*
2. Wet Separation by PLM Gravimetric Technique EPA R-04/004	Minimum 50g** of dry sample Analysis of 'Sinks' only	\$ 60.00 3-5 Day 0.25% LOQ \$120.00 3-5 Day 0.1% LOQ \$360.00 3-5 Day 0.01% LOQ
3. Wet Separation by PLM Gravimetric Technique EPA R-04/004	Minimum 50g** of dry sample Analysis of 'Floats' only	\$ 60.00 3-5 Day 0.25% LOQ \$120.00 3-5 Day 0.1% LOQ \$360.00 3-5 Day 0.01% LOQ
4. Wet Separation by TEM Gravimetric Technique EPA R-04/004	Minimum 50g** of dry sample Analysis of 'Sinks' only	\$150.00 3-5 Day ~0.25% LOQ \$200.00 3-5 Day ~0.1% LOQ \$360.00 3-5 Day ~0.01% LOQ
5. Wet Separation by TEM Gravimetric Technique EPA R-04/004	Minimum 50g** of dry sample Analysis of 'Suspension' only	\$150.00 3-5 Day 0.25% LOQ \$200.00 3-5 Day 0.1% LOQ \$360.00 3-5 Day 0.01% LOQ

1 thru 5 above represents worst case scenario for negative confirmation at <0.01% = \$1475.00

LOQ, Limit of Quantitation estimates for mass and volume analyses.

* With advance notice and confirmation by the laboratory.

** Approximately 1 Liter of sample in double-bagged container (~9x6 inch bag of sample)

International Asbestos Testing Laboratories
 9000 Commerce Parkway, Suite B
 Mt. Laurel, New Jersey 08054
 Attn: Ray Sankey

Tel. 856 231-9449
 Fax 856 231-9818

- Chain of Custody -

Client: Ballast Environmental Consulting Ltd.
PO Box 87073 RPO Douglas SQ
Calgary, AB Canada T2Z 3V7

Project Name: _____
Project No.: 11166B

Phone: 403-452-3110
FAX: 403-452-3133

Contact: Elvie Reinson
Pager: Cell: 403-860-8524

Special Instructions: _____

Type:

Asbestos	Lead	Other
<input type="checkbox"/> Air	<input type="checkbox"/> Air	<input type="checkbox"/> Soil
<input checked="" type="checkbox"/> Bulk	<input type="checkbox"/> Bulk	<input type="checkbox"/> Paint
<input type="checkbox"/> Water	<input type="checkbox"/> Water	<input type="checkbox"/> Other
<input type="checkbox"/> Soil		
<input type="checkbox"/> Dust		
<input type="checkbox"/> Other		

Analysis Method:

<input type="checkbox"/> PCM : NIOSH 7400	<input checked="" type="checkbox"/> PLM : Bulk Asbestos EPA 600	<input type="checkbox"/> TEM : AHERA
<input type="checkbox"/> PCM : OSHA	<input type="checkbox"/> PLM : Point Counting 198.1	<input type="checkbox"/> TEM : NIOSH 7402
<input type="checkbox"/> PCM : Other _____	<input type="checkbox"/> PLM : NOB via 198.1 (PLM only)	<input type="checkbox"/> TEM : EPA Level II
	<input type="checkbox"/> If <1% by PLM, to TEM via 198.4	<input type="checkbox"/> TEM : Microvac / Wipe
<input type="checkbox"/> AAS : NIOSH 7082 (Air)	to meet NYSDOH requirements **	<input type="checkbox"/> TEM : Asbestos in Water
<input type="checkbox"/> AAS : Lead in Drinking Water	(**call to confirm TAT!)	<input type="checkbox"/> TEM : Bulk Analysis
<input type="checkbox"/> AAS : Lead in Paint ASTM D3335-85a		<input type="checkbox"/> TEM : NOB 198.4
<input type="checkbox"/> AAS : Lead Dust/Wipe "		<input type="checkbox"/> TEM : Other _____
<input type="checkbox"/> AAS : Other Metals / Soil _____		<input type="checkbox"/> Total Dust : NIOSH 0500

Turnaround Time: email results **FAX:** _____ **Verbals:** _____
date / time date / time

10 Day 5 Day 3 Day 2 Day 1 Day 6 hour RUSH

Preliminary FAX/Verbal Results Requested by: _____

Sample Numbers:

Client #(s): A1-A11, A131-A228 IATL#(s): _____ Total: _____
(start) (end) (start) (end)

Chain of Custody:

Dup1 - Dup12
(see attached)

Relinquished: <u>Elvie Reinson</u>	<div style="border: 2px solid black; padding: 5px; font-weight: bold; font-size: 1.5em;">RECEIVED</div> <div style="text-align: center; font-weight: bold; font-size: 1.2em;">FEB 14 2011</div>
Received: _____	
Sample Log-in: <u>BA 211714</u>	
Sample Prep: _____	
Analyzed: <u>[Signature]</u>	
QA/QC Review: _____	

Archived/Released: _____ QA/QC InterLAB Use: _____ Date: _____ Time: _____

BULK MATERIAL SAMPLING LOG

 Worksite: Beaverlodge Date: Feb 4/11
 Client: PLUGSC Job No.: 11066B
 Date Results Required: _____ No. Samples: _____ Page 1 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A1	white/silver	1 sink insulation	(15) South lab Sinks	good 4218815	2 sinks	109-0637
A2	white	ceiling tile	(15) growth cabinet ceiling	good 4218816	entire main floor ceiling	109-0638
A3	white w/ gray	9x9 floor tile	(15) south lab floor tile - E wall	good 4218817	South lab area storage	109-0641
A4	"	"	(15) " west doorway	fair 4218818	"	109-0649
A5	"	"	(15) south storage	fair 4218819	"	109-650
A6	white/p	ceiling tile	(15) south storage ceiling	good 4218820	entire main floor	109-648
A7	white/blue	12x12 floor tile	(15) west door way	poor 4218821	3/4 main floor	109-0652
A8	"	"	(15) main floor office	poor 4218822	"	109-0660
A9	"	"	(15) middle of north lab	" 4218823	"	109-0662
A10	white	ceiling tile	(15) north lab ceiling	" 4218824	entire main floor	109-0664
A11	grey	counter top	(15) north lab counter on north wall	fair 4218825	2' x 11.5'	109-0667
A12	grey	"	(15) north lab counter on east wall	fair 4218826	6.5' x 2'4" thick	109-0668
A13	grey	board fume hood	(15) north lab fume hood	good 4218827	5' x 2' x 4" all sides	109-0669
A14	grey	insulation board	(15) north lab inside acid cabinet under fume hood	good 4218828	3' x 2' cabinet size	109-0671

ASB

BULK MATERIAL SAMPLING LOG

Worksite: Beaverlodge Date: Feb 4/11
 Client: PLD/SC Job No.: 11166B
 Date Results Required: _____ No. Samples: _____ Page 2 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A15	yellow	drywall putty	(15) utility room NW corner	good 4218829	utility room	109-0677
A16	"	"	(15) utility room SW corner.	" 4218830	"	109-0676
A17	white	insulating fibre board	(15) hallway bulletin board	" 4218831	hallway 4' x 2'	109-0678
A18	white w/ blue	12x12 floor tile	(15) hallway/utility room	poor 4218832	3/4 main floor	109-0679
A19	white	Ceiling tile	(15) main floor east entrance	good 4218833	entire main floor	109-0680
A20	grey	Counter top	(15) 2nd FL table adjacent stairs.	poor 4218834	5 1/2' x 2 1/2'	109-0686
A21	green	"	(15) " " (east)	fair 4218835	2 1/2' x 4'	109-0688
A22	brown	"	(15) cabinet counter on post wood 2nd FL	fair 4218836	13' x 2'	109-0689
A23	black	"	(15) table on south wood 2nd FL	poor 4218837	2 1/2' x 4 1/2'	109-0696
A24	white	insulating board	(15) door b/t 1st & 2nd floor	poor 4218838	3' x 7' door @	109-0697
A25	"	"	(15) ceiling south of 3rd FL stairs	good 4218839	ceiling 10' x 10'	109-0698
A26	white/brown	fibre board	(15) 2nd FL walls SE corner	fair 4218840	east & west walls	109-0699
A27	"	"	" N/E corner	" 4218841	3/4 walls	109-0700
A28	"	"	" W/W side	" 4218842	(last 1/4 wall)	109-0701

BULK MATERIAL SAMPLING LOG

Worksite: Beaverlodge Date: Feb 4/11
 Client: PLUGSC Job No.: 11166B
 Date Results Required: _____ No. Samples: _____ Page 3 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A29	black	tar paper	(S) 2nd FL South east end	good 4218843	to S end of built 2nd FL	109-0710
A30	black	"	(S) Main FL South Storage ceiling	" 4218844	entire ceiling built	109-0648
A31	green	Cino	(S) main FL office	" 4218845	main office floor #4	109-0660
A32	"	leveling compound	(S) middle of north lab	" 4218846	office only	109-0662
A33	brown	lino	(1) main, east door shoe rack	fair 4218847	5' x 3' + shelves	109-0761
A34	white	drywall joint compound	(1) Bsm + east stairwell	good 4218848	all	109-0768
A35	blue	drywall puddy	(1) Bsm + office ceiling	good 4218849	"	109-0769
A36	blue sparkle	sheet lino	(1) Bsm + office at floor drain	" 4218850	bsmt office + computer room	109-0771
A37	white	drywall puddy	(1) bsmt hall	poor 4218851	entire	109-0772
A38	white	pipe wrap	(1) bsmt library tape on fiberglass insulation	good 4218852	7m	109-0777
A39	white	12"x12" holes ceiling	(1) bsmt library north strip	good 4218853	east 3' wide	109-0778
A40	white	12"x12" grid	(1) bsmt library near ceiling	good 4218854	remaining library	109-0779
A41	brown white	9"x9" brown/white floor tile	(1) bsmt hallway floor	Fair 4218855	1/2 hallway (4m)	109-0783
A42	white	drywall puddy	(1) bsmt furnace room	good 4218856	all	0784

BULK MATERIAL SAMPLING LOG

Worksite: Beaverlodge Date: Feb 5/11
 Client: PLCASC Job No.: 111668
 Date Results Required: _____ No. Samples: _____ Page 4 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A43	yellow	insulating board	① make-up air duct - bsmt	good 4218857	2'x7'	109-0787
A44	Silver	sink insulation	① bsmt utility furnace room	fair 4218858	1 sink	109-0788
A45	white	12"x12" holes ceiling tile	① bsmt storage room	good 4218859	room	109-0792
A46	Silver	sink insulation	① bsmt dark room	good 4218860	1 sink	109-0793
A47	black	Fiber board	① bsmt "	good 4218861	ceiling & 2 walls	109-0794
A48	blue	blue speckle Sheet Lino	① bsmt storage room	good 4218862	floor	109-0795
A49	brown	squares Lino	① bsmt conference room	good 4218863	conference, hall, kitchen	109-0800
A50	white	12x12 holes ceiling tile	① bsmt conference room	good 4218864	room	109-0808
A51	white	drywall puddy	① bsmt SW corner	good 4218865	new part of building	109-0809
A52	"	"	① bsmt kitchen SE corner	" 4218866	"	109-0810
A53	bronze	sink insulation	① bsmt kitchen sink	" 4218867	2 sinks	109-0811
A55	white	12x12 holes ceiling tile	① main hall (middle)	" 4218868	entire except entry	109-0817
A56	brown	squares lino	① main storage east	poor 4218869	-	109-0816
A57	white	12x12 holes ceiling tile	① main office SE corner	Good 4218870	entire except entry	109-0815

BULK MATERIAL SAMPLING LOG

 Worksite: Beaverlodge Date: Feb 5/11

 Client: PLCSC Job No.: 11166B

 Date Results Required: _____ No. Samples: _____ Page 5 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A58	green	joint material (dry wood floor)	① main reception closet	good 4218871	entire	109-0820
A59	green	"	① main office 1 sw corner	good 4218872	"	109-0819
A60	white	ceiling texture	① main hall in front of reception	" 4218873	" ceiling	0821
A61	"	"	① main hall at east stairs	" 4218874	" + 1' down	0822
A62	"	"	① main office 3 sw area	" 4218875	" wall	0823
A63	"	12x12 holes ceiling tile	① main office 5 sw corner	" 4218876	entire ceiling	0824
A64	"	"	① main reception North	" 4218877	"	0825
A65	pink	joint compound	① main office 4 3 sw corner	" 4218878	walls ceiling	109-0826
A66	white	"	① 2nd attic access	" 4218879	walls + ceiling	0842
A67	"	"	① 2nd fl office 25 south wall	" 4218880	"	0843
A68	"	"	① 2nd fl office 20 NW corner	" 4218881	all walls ceiling	109-0851
A69	brown	insulating paper	① 2nd fl attic access	" 4218882	building	109-0857
A70	roughly white	stucco	① exterior main entrance	" 4218883	"	109-0861
A71	"	"	① exterior "	4218884	"	

ASB
ASB

BULK MATERIAL SAMPLING LOG

Worksite: Beaver Lodge Date: Feb 5/11
 Client: PLGSC Job No.: 11166B
 Date Results Required: _____ No. Samples: _____ Page 6 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A72	grey/mult	stucco	① "	good	4218885	entire exterior building
A73	white	12x12 grid ceiling	① bsmt Library west	"	4218886	Library ceiling
A74	"	"	① bsmt Library NE	"	4218887	"
A75	brown/white	9'x9' brown/white floor tile	① bsmt hallway	Fair	4218888	1/2 hallway
A76	gray	Cement	① exterior under stucco NE corner	good	4218889	entire building
A77	"	"	① exterior under stucco NW corner	good	4218890	"
A78	gray	Cement board	⑱ bsmt Cooler #7 outside wall	good	4218891	4 Coolers
A79	gray	caulking	⑱ bsmt Cooler #2 inside	"	4218892	"
A80	gray	Cement board	⑱ bsmt cooler #2 inside wall	"	4218893	"
A81	"	"	⑱ bsmt cooler #4 ceiling	"	4218894	"
A82	black	door seal	⑱ bsmt cooler door #2	"	4218895	"
A83	grey	peachmark	⑱ stairwell on south wall	"	4218896	1/2 wall
A84	white/grey	insulation caulking	⑱ cooler 4 ⑱ door exterior windows	"	4218897	all glass windows
A84	brown	brown squares lino	⑱ south lab	good	4218897	south lab

BULK MATERIAL SAMPLING LOG

Worksite: Beaverlodge Date: Feb 5/11

Client: POCSC Job No.: 11166B

Date Results Required: _____ No. Samples: _____ Page 7 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A85	white	insulation	(18) South lab sink insulation	good 4218898	2 sinks	109-0895
A86	gray	cement board	(18) North lab fume hood	good 4218899	2'x4' cut sides	109-0896
A87	gray	patchment	(18) exterior on concrete	" 4218900	entire perimeter	109-0898
A88	black	tea paper	(18) exterior SW corner	" 4218901	exterior building	109-902
A89	brown	vermiculite	(18) attic North	" 4218902	attic space	109-0904
A90	"	"	(18) attic South	" 4218903	"	"
A91	"	"	(18) attic east	" 4218904	"	"
A92	gray	mortar	(18) chimney on north side of building	fair 4218905	whole chimney	109-0906
A93	brown	fiber board	(10) office 4 built-in board	good 4218906	all the built-in	109-0935
A94	brown streak	tile	(10) office 10 floor	good 4218907	entire building	109-0943
A95	"	tile	(10) storage 8 floor	good 4218908	"	109-0953
A96	black/silver	light insulation	(10) office 4 light fixture backing	good 4218909	1 1	109-0959
A97	white/rose	lino	(10) 2nd floor washrooms	fair 4218910	Bedroom 3	109-0965
A98	brown	12x12 floor tile	(10) 2nd fl office 5	good 4218911	entire building	109-0968

BULK MATERIAL SAMPLING LOG

Worksite: Beaver Lodge Date: Feb 6/11

Client: PLGSC Job No.: 11166B

Date Results Required: _____ No. Samples: _____ Page 3 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A99	white	12'x12' grid ceiling tile	Zn(10) 2nd FL hallway middle	good 4218912	2nd floor building	109-0976
A100	"	12'x12' grid ceiling tile	(10) 2nd FL hallway NE	" 4218913	building	109-0977
A101	"	"	(10) Main FL at breaker box	" 4218914	"	109-0987
A102	silver/black	insulation	(10) Main FL Storage light	"	all in. light fixtures	109-0990
A103	brown/black	wall tile	(10) Main entrance hall	" 4218915	30' long x 5' high	110-0001
A104	white	Fibre board	(10) Main FL hall - bulletin board	" 4218916	2' x 3' (all bulletin)	110-0003
A105	white	12x12 grid ceiling tile	(10) Main FL SW Lab	" 4218917	all	109-0999
A106	"	"	(10) Main FL SE lab east wall	good 4218918	"	110-0009
A107	grey	wall tile	(10) Main FL SW Lab	" 4218919	SW Lab	110-0015
A108	green	floor tile	(10) Main FL W/E SW NW lab	" covered.	10 lab/stairwell	110-0017
A109	grey	Cement board	(10) Main FL NW Lab fume hood	" 4218921	all in fume hood.	110-0021
A110	grey	"	(10) Main FL NW Lab sink backsplash	Fair 4218922	2 1/2 m x 2"	110-0025
A111	brown	Fibre board	(10) Main FL 7 & 6 N entry stairwell	good 4218923	N entry stairwell	110-0029
A112	yellow	floor tile	(10) NW entry - upper stairs	Fair	6 runners	110-0034

BULK MATERIAL SAMPLING LOG

 Worksite: Beaver Lodge Date: Feb 6/11

 Client: PWSC Job No.: 11166B

 Date Results Required: _____ No. Samples: _____ Page 10 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
→ A127	white	drywall Puddy	(10) janitor closet 2nd FL	good	all	110-0108
→ A128			(10) 2nd FL storage closet	good		110-0109
→ A129			(10) main FL main electrical box	"		110-0110
→ A130			(10) main FL NW entrance	"		110-0111
A131	white/grey	stucco/cement	(10) exterior N wall entrance	good 4218924	all exterior	110-0112
mm A132	"	"	(10) exterior S main entrance	" 4218925	"	110-0113
4/11 A133	"	"	(10) exterior NW corner	" 4218926	"	110-0118
A134	black	tar paper	(10) exterior N wall entrance	" 4218927	"	110-0112
↓ A135	grey	12"x12" floor tile	(14) entry tile under lino	Fair 4218928	room	110-0128
A136	white	12x12 flat ceiling tile	(14) entry ceiling tile	good 4218929	"	110-0130
A137	white/grey	9x9 floor tile	(14) porch floor	Poor 4218930	"	110-0136
A138	white	stucco	(14) porch-west building wall	good 4218931	exterior building	110-0137
A139	grey	cement board	(14) SW Lab leaning on wall x2	good 4218932	2'x8' & 2'1/2'x5'	110-0139
A140	white	drywall puddy	(14) SW Lab SW corner	good 4218933	all drywall	110-0140

BULK MATERIAL SAMPLING LOG

Worksite: Beaverlodge Date: Feb 7/11
 Client: PLC/SC Job No.: 11166B
 Date Results Required: _____ No. Samples: _____ Page 1 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A141	bronze	sink insulation	(14) SW Lab SINKS	good 4218934	2 sinks	110-0143
A142	white	12x12 holes ceiling tile	(14) SW Lab ceiling	" 4218935	room	110-0144
A143	white/grey/brown	9x9 floor tile	(14) SW Lab floor	Fair 4218936	"	110-0145
A144	gray	pluchment	(14) furnace room N wall	good 4218937	wall	110-0153
A145	gray/blue	12x12 floor tile	(14) " floor	Fair 4218938	room	110-0152
A146	white	drywall puddy	(14) " walls	Fair 4218939	all drywall	110-0147
A147	white	sink insulation	(14) washroom sink	poor 4218940	sink	110-0155
A148	white	spackle ceiling tile	(14) " ceiling	good 4218941	room	110-0157
A149	black/white	fabric	(14) storage ceiling	Fair 4218942	ceiling	110-0164
A150	white	puddy	(14) growth chamber room ceiling	Fair 4218943	"	110-0169
A151	"	spackle ceiling tile	(14) main FL hall	good 4218944	"	110-0165
A152	brown	fibre board	(14) growth chamber room ceiling	Fair 4218945	"	110-0170
A153	light brown	9x9 floor tile	(14) understairs floor	poor 4218946	room	110-0174
A154	dark brown	"	(14) understairs floor	poor 4218947	room	110-0174

ASB

BULK MATERIAL SAMPLING LOG

Worksite: Beaverlodge Date: Feb 7/11
 Client: PWQSC Job No.: 11166B
 Date Results Required: _____ No. Samples: _____ Page 12 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A155	light brown	9x9 Floor tile	(14) NW Lab floor	Fair 4218948	room	110-0178
A156	dark brown grey	9x9 floor tile	"	" 4218949	"	110-"
A157	grey	cement board	(14) NW Lab fume hood	good 4218950	4'x3'x4' Fume hood	110-0179
A158	white	putty	(14) NW Lab ceiling	fair 4218951	all	110-0180
A159	white / grey	parchment	(14) NW Lab north wall	good 4218952	North wall + furnace room	110-0181
A160	gray	sink insulation	(14) NE lab sinks	good 4218953	2 sinks	110-0187
A161	white	Flat ceiling tile	(14) NE lab ceiling N	poor 4218954	ceiling	110-0187
A162	brown	squares sheet lead	(14) NE lab west corner	poor 4218955	room + entry to room	110-0190
A163	white	Flat ceiling tile	(14) NE Lab East	" 4218956	ceiling	110-0187
A164	white	"	(14) NE Lab South.	" 4218957	"	"
A165	white	spackle ceiling tile	(14) Hall - South end	good 4218958	* IATL 4218958 sample not taken	
A166	gray	cement board	(14) up power panel room	good 4218959	wall + ceiling	110-0211
A167	dark gray	9x9 floor tile	(14) "	fair 4218960	Floor	110-0210
A168	"	"	(14) "	" 4218961	"	"

BULK MATERIAL SAMPLING LOG

 Worksite: Beaverlodge Date: Feb 7/11
 Client: PWGSC Job No.: 11166B
 Date Results Required: _____ No. Samples: _____ Page 3 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A169	white	12x12 holes ceiling tile	(14) Lab 1	Fair 4218962	2nd FL ceiling	110-0218
A170	white	sink insulation	(14) Lab 1 sinks	good 4218963	2 sinks	110-0215
A171	white/gray	9x9 floor tile	(14) Lab 1 North wall	poor 4218964	all 2nd FL.	110-0216
A172	white	sink insulation	(14) Lab 2 N sink	" 4218965	3 sinks	110-0233
A173	white	12x12 holes ceiling tile	(14) Lab 2 North ceiling	" 4218966	all.	110-0232
A174	white/gray	9x9 floor tile	(14) Lab 2 NE corner	" 4218967	"	110-0237
A175	white	12x12 holes ceiling tile	(14) tip stairs hall S wall	Fair 4218968	"	110-0245
A176	white/gray	Cement board	(14) upstairs hall southwest corner	poor 4218969 (damaged)	6' x 3'	110-0242
A177	"	"	(14) office 1 ceiling above stairs	good 4218970	all	110-0250
A178	white/gray	9x9 floor tile	(14) office 2 floor NE corner	good 4218971	"	110-0254
A179	white	stucco	(14) exterior north door	" 4218972	entire exterior	
A180	white	stucco	(14) exterior south west corner	" 4218973	"	110-0260
A181	brown/silver	vermiculite	(17) attic SE acces	good 4218974	entire attic	110-0291
A182	"	"	(17) attic "	" 4218975	" 6 inches deep	110-0293

BULK MATERIAL SAMPLING LOG

Worksite: Beaver Lodge Date: Feb 8 / 2011

Client: PWGSC Job No.: 11166 B

Date Results Required: _____ No. Samples: _____ Page 14 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A183	brown/silver	vermiculite	(17) Attic "	good 4218976	entire attic (6 inches deep)	110-0303
A184	white	putty	(17) GARAGE CEILING SE	good 4218977	entire ceiling	110-0296
A185	brown/silver	vermiculite	(17) Attic SW access	" 4218978	entire attic	110-0303
A186	white/grey	putty putty	(17) Office SW corner	" 4218979		110-0348
A187	grey	12x12 floor tile	(17) office door	" 4218980	Bathroom & office	110-0349
A188	light grey	"	(17) office middle	" 4218981	9 tiles	110-0350
A189	grey	4x9 floor tile	(17) Bathroom	" 4218982		110-0352
A190	white	putty	(17) Bathroom NE corner	" 4218983	Bathroom floor	110-0351
A191	white	caulking	(17) SE window	Poor 4218984	3 windows	110-0363
A192	white/blue	9x9 floor tile	(35) office 1 floor NE	Fair 4218985	office	110-0370
A193	grey/black	12x12 grey/black floor tile	(35) office 1 floor NE	Fair 4218986	2 strips	"
A194	white	12x12 holes ceiling tile	(35) office 1 ceiling SW corner	good 4218987	"	110-0373
A195	"	12x12 flat ceiling tile	(35) Washroom ceiling	" 4218988	room	110-0377
A196	"	12x12 holes ceiling tile	(35) main entry west wall	" 4218989	room	110-0379

BULK MATERIAL SAMPLING LOG

Worksite: Beaverlodge Date: Feb 8/11

Client: PWGC Job No.: 11166B

Date Results Required: _____ No. Samples: _____ Page 15 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A197 A196	white	drywall putty	(35) office 2	good	4218990	8' room 110-0385
A198	brassy grey	vermiculit	(35) Cinderblock wall	"	4218991	wall. 110-0415
A199	grey	putty	(26) thrashing room south wall	poor fair	4218992	110-0450
A200	grey	cement board	(26) thrashing room NW enclosure	good	4218993	NW enclosure walls/ ceiling 110- 0463
A201	white/ grey	9x9 floor tile	(26) Lab 1 south floor	"	4218994	Lab 1 floor Lab 2 floor 110-0468
A202	white/ grey	duct tape	(24) Lab 1 NE pipe	fair	4218995	110-0469
A203	white/ grey	12x12 floor tile	(26) office 1	good	4218996	office 1 floor 110-0470
A204	grey	putty	(26) seed storage	poor	4218997	all walls 110-0478
A205	black	door seal	(26) cooler door	"	4218998	around door 110-0480
A206	grey/ white	cement board	(26) furnace room south wall	good	4218999	8-foot x 7'6" 110-0488
A207	grey	putty	(26) furnace room east wall	poor	4219000	all walls 110-0489
A208	grey	putty	(26) Drying ^{AIR} room	good	4219001	all walls 110-0520
A209	white/ grey	9x9 floor tile	(26) office 2 southwest corner	good	4219002	office 2 floor 110-0524
A210	white/ grey	12x12 floor tile	(26) Lab 3 south side	good	4219003	Lab 3 floor 100-0022

BULK MATERIAL SAMPLING LOG

 Worksite: Beaver Lodge Date: Feb 8/11

 Client: PWUSC Job No.: 11766B

 Date Results Required: _____ No. Samples: _____ Page 6 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A211	white/grey	9x9 floor tile	(26) Office 3	good 4219004	# tiles = 14x25	100-0024
A212	grey	cement counter top	(26) office 3 south + east walls	good 4219005	12 feet 12 feet	100-0025
A213	green	9x9 floor tile	(26) Bathroom hall north	good 4219006 4219007	Hall floor	100-0027
A214	green	"	(26) Bathroom hall south	poor	"	100-0029
A215	green	"	(26) Womens Bathroom west	good 4219008	Womens Bathroom floor	100-0030
A216	grey	putty	(26) " west	poor 4219009	all walls	100-0033
A217	grey	putty	(26) office 4 east wall	poor 4219010	all walls	100-0037
A218	grey	putty	(26) MAIN HALL south (center) wall	poor 4219011	all walls	100-0042
A219	white	caulking	(14) exterior south wall	" 4219012		100-
A220	white	caulking	(14) exterior window	" 4219013	all windows	100-
A221	gray	patchment	(14) exterior bsmt wall west	" 4219014	exterior bsmt	100-
A222	"	"	(14) " south	" 4219015	"	100-
A223	"	"	(14) " east	4219016		100-
A224	white	putty	(26) Main hall at attic stairs	poor 4219017	all	100-0534

Dup

BULK MATERIAL SAMPLING LOG

Worksite: Beaverlodge Date: Feb 4/11

Client: PULISC Job No.: 11166B

Date Results Required: _____ No. Samples: _____ Page 1 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
Dup 1	gray	concrete		4219022		
Dup 2	brown	ceiling tile		4219023		
Dup 3	gray	cement		4219024		
Dup 4	whitish	tile		4219025		
Dup 5	green	cement		4219026		
Dup 6	white	insulation		4219027		
Dup 7	gray	floor tile		4219028		
Dup 8	gray	Cement board		4219029		
Dup 9	white	putty		4219030		
Dup 10	white	"		4219031		
Dup 11	white/ gray gray	Cement tile		4219032		
Dup 12	concrete gray	Cement		4219033		

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Consl'tg Ltd.
PO Box87073 RPO DouglasSq.
Calgary AB T2Z 3V7

Report Date: 2/9/2011
Project: Building 10
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4210430	Description / Location: Grey Insulation		
Client No.: A102	10; Main FL, Storage Light		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
50	Chrysotile	30	Cellulose
			<u>% Non-Fibrous Material</u>
			20

Lab No.: 4210440	Description / Location: Yellow Floor Tile		
Client No.: A112	10; NW Entry, Upper Stairs		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	5	Cellulose
			<u>% Non-Fibrous Material</u>
			95

Lab No.: 4210440	Description / Location: Black Tar Paper		Layer No.: 2
Client No.: A112	10; NW Entry, Upper Stairs		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	30	Cellulose
			<u>% Non-Fibrous Material</u>
			70

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: T. Snyder

Approved By: 

Date: 2/9/2011

Frank E. Ehrenfeld, III
Laboratory Director



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client:	Ballast Enviro. Conslt'g Ltd. PO Box 87073 RPO Douglas Sq. Calgary AB T2Z 3V7	Report Date:	2/9/2011
		Project:	Building 10
		Project No.:	11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4210441	Description / Location:	Brown Floor Tile 10; NW Entry, Stair Runner Down	
Client No.:	A113			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	5	Cellulose	95

Lab No.:	4210441	Description / Location:	Black Tar Paper 10; NW Entry, Stair Runner Down		La-er No.: V
Client No.:	A113				
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	30	Cellulose	70	

Lab No.:	4210442	Description / Location:	Grey Floor Tile; 9x9 10; Bsmt, Storage 7	
Client No.:	A114			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 2.0	Chrysotile	None Detected	None Detected	98

Lab No.:	4210442	Description / Location:	Black Mastic 10; Bsmt, Storage 7		La-er No.: V
Client No.:	A114				
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

NIST10 LAP No. 6566H15

NY1DO8 No. 665V6

AI8 A Lab No. 6556mm

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Anal-ysis Perfor-y ed B-: T. Snyder

Date: 2/9/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client:	Ballast Enviro. Conslt'g Ltd.	Report Date:	2/9/2011
	PO Box 87073 RPO Douglas Sq.	Project:	Building 10
	Calgary AB T2Z 3V7	Project No.:	11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4210443	Description / Location:	Brown Floor Tile; 9x9 10; Bsmt, Storage 7	
Client No.:	A115			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 3.25	Chrysotile	None Detected	None Detected	PC 96.75

Lab No.:	4210443	Description / Location:	Black Mastic 10; Bsmt, Storage 7		La-er No.: V
Client No.:	A115				
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Lab No.:	4210444	Description / Location:	Tan Floor Tile; 9x9 10; Bsmt, Storage 8	
Client No.:	A116			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 2.25	Chrysotile	None Detected	None Detected	PC 97.75

Lab No.:	4210444	Description / Location:	Black Mastic 10; Bsmt, Storage 8		La-er No.: V
Client No.:	A116				
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

NIST10 LAP No. 6566H15

NY108 No. 665V6

AI8 A Lab No. 6556mm

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Anal-ysis Perfor-y ed B-: T. Snyder

Date: 2/9/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client:	Ballast Enviro. Conslt'g Ltd. PO Box87073 RPO DouglasSq. Calgary AB T2Z 3V7	Report Date:	2/9/2011
		Project:	Building 10
		Project No.:	11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4210445	Description / Location:	Brown Floor Tile; 9x9 10; Bsmt, Storage 8	
Client No.:	A117			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 2.50	Chrysotile	None Detected	None Detected	PC 97.50

Lab No.:	4210445	Description / Location:	Black Mastic	La-er No.:	V
Client No.:	A117		10; Bsmt, Storage 8		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>	
None Detected	None Detected	None Detected	None Detected	100	

Lab No.:	4210446	Description / Location:	Black Tar/Caulk 10; Bsmt Cooler, Storage 5	
Client No.:	A118			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
25	Chrysotile	None Detected	None Detected	75

Lab No.:	4210447	Description / Location:	Black Caulk 10; Bsmt Cooler, Storage 5	
Client No.:	A119			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
10	Chrysotile	None Detected	None Detected	90

NIST10 LAP No. 6566H15

NY1D08 No. 665V6

AI8 A Lab No. 6556mm

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Anal- sis Perfor y ed B- : T. Snyder

Date: 2/9/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/9/2011
Project: Building 10
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4210448	Description / Location: Grey Aircell Pipe Insulation		
Client No.: A120	10; Bsmt, Storage		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
50	Chrysotile	35	Cellulose
			15

Lab No.: 4210449	Description / Location: Grey Insulation		
Client No.: A121	10; Bsmt, Furnace		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
65	Chrysotile	None Detected	None Detected
			35

Lab No.: 4210450	Description / Location: Grey Cement		
Client No.: A122	10; Bsmt, Storage 9		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4210451	Description / Location: Off-White Joint Compound		
Client No.: A123	10; Bsmt, Storage 6		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

NIST10 LAP No. 6566H15

NY1008 No. 665V6

AI8 A Lab No. 6556mm

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Anal-ysis Performed By: T. Snyder

Date: 2/9/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/9/2011
Project: Building 10
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4210452	Description / Location: Off-White Joint Compound			
Client No.: A124	10; Bsm, Storage 7 Closet			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.: 4210453	Description / Location: Off-White Joint Compound			
Client No.: A125	10; Bsm, Hall			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.: 4210454	Description / Location: Off-White Joint Compound			
Client No.: A126	10; 2nd FL, Office 6 Closet			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.50	Chrysotile	None Detected	None Detected	PC 98.50

Lab No.: 4210455	Description / Location: Sample Not Analyzed			
Client No.: A127				
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
Sample Not Analyzed		Sample Not Analyzed		

Note: Insufficient sample.

NIST10 LAP No. 6566H15

NY108 No. 665V6

AI8 A Lab No. 6556mm

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Anal- sis Perfor y ed B- : T. Snyder

Date: 2/9/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/9/2011
Project: Building 10
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4210456	Description / Location: Off-White Joint Compound			
Client No.: A128	10; 2nd FL, Storage Closet			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.25	Chrysotile	None Detected	None Detected	PC 98.75

Lab No.: 4210457	Description / Location: White Joint Compound			
Client No.: A129	10; Main FL, Under Electrical Box			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 1.5	Chrysotile	None Detected	None Detected	PC 98.5

Lab No.: 4210458	Description / Location: ff-White Joint Compound			
Client No.: A130	10; Main FL, NW Entrance			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST10 LAP No. 6566H15

NY1D08 No. 665V6

AI8 A Lab No. 6556mm

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Anal-ysis Perfor-y ed B- : T. Snyder

Date: 2/9/2011

International Asbestos Testing Laboratories
 9000 Commerce Parkway, Suite B
 Mt. Laurel, New Jersey 08054
 Attn: Ray Sankey

Tel. 856 231-9449
 Fax 856 231-9818

- Chain of Custody -

Client: Ballast Environmental Consulting Ltd.
PO Box 87073 RPO Douglas SQ
Calgary, AB Canada T2Z 3V7

Project Name: Building 10
Project No.: 11166B

Phone: 403-452-3110
FAX: 403-452-3133

Contact: Elvie Reinson
Pager: Cell: 403-860-8524

Special Instructions: _____

Type:

Asbestos		Lead		Other	
<input type="checkbox"/> Air	<input type="checkbox"/> Soil	<input type="checkbox"/> Air	<input type="checkbox"/> Soil		
<input checked="" type="checkbox"/> Bulk	<input type="checkbox"/> Dust	<input type="checkbox"/> Bulk	<input type="checkbox"/> Paint		
<input type="checkbox"/> Water	<input type="checkbox"/> Other	<input type="checkbox"/> Water	<input type="checkbox"/> Other		

Analysis Method:

<input type="checkbox"/> PCM : NIOSH 7400	<input checked="" type="checkbox"/> PLM : Bulk Asbestos EPA 600	<input type="checkbox"/> TEM : AHERA
<input type="checkbox"/> PCM : OSHA	<input type="checkbox"/> PLM : Point Counting 198.1	<input type="checkbox"/> TEM : NIOSH 7402
<input type="checkbox"/> PCM : Other _____	<input type="checkbox"/> PLM : NOB via 198.1 (PLM only)	<input type="checkbox"/> TEM : EPA Level II
	<input type="checkbox"/> If <1% by PLM, to TEM via 198.4	<input type="checkbox"/> TEM : Microvac / Wipe
<input type="checkbox"/> AAS : NIOSH 7082 (Air)	to meet NYSDOH requirements **	<input type="checkbox"/> TEM : Asbestos in Water
<input type="checkbox"/> AAS : Lead in Drinking Water	(**call to confirm TAT!)	<input type="checkbox"/> TEM : Bulk Analysis
<input type="checkbox"/> AAS : Lead in Paint ASTM D3335-85a		<input type="checkbox"/> TEM : NOB 198.4
<input type="checkbox"/> AAS : Lead Dust/Wipe "		<input type="checkbox"/> TEM : Other _____
<input type="checkbox"/> AAS : Other Metals / Soil _____		<input type="checkbox"/> Total Dust : NIOSH 0500

Turnaround Time:

email: elvie@

ballastenvironmental.com

FAX: _____ **Verbals:** _____
 date / time date / time

10 Day 5 Day 3 Day 2 Day 1 Day 6 hour RUSH

Preliminary FAX/Verbal Results Requested by: _____

Sample

Numbers:

Client #(s): A112 - A130
 (start) + (end)

IATL#(s): _____ - _____ Total: _____
 (start) (end)

A102

Chain of Custody:

Relinquished:	<u>Elvie Reinson</u>	Date:	<u>Feb 6/11</u>	Time:	_____
Received:	_____	Date:	_____	Time:	_____
Sample Log-in:	<u>219/11</u>	Date:	_____	Time:	_____
Sample Prep:	<u>[Signature]</u>	Date:	_____	Time:	_____
Analyzed:	<u>[Signature]</u>	Date:	<u>FEB - 9 2011</u>	Time:	_____
QA/QC Review:	<u>[Signature]</u>	Date:	_____	Time:	_____

Archived/Released: _____ QA/QC InterLAB Use: IATL - By [Signature] Date: _____ Time: _____

BULK MATERIAL SAMPLING LOG

Worksite: Beaver Lodge Date: Feb 6/11
 Client: PLGSC Job No.: 11166B
 Date Results Required: _____ No. Samples: _____ Page 3 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A99	white	12'x12' grid ceiling tile	2nd FL hallway middle	4210427 good	IATL	4210427
A100	"	12'x12' grid ceiling tile	2nd FL hallway NE	" 4210428	IATL	4210428
A101	"	"	Main FL at breaker box	" 4210429	IATL	4210429
A102	silver/black	insulation	Main FL storage light	" 4210430	all light fixtures	10-0990
A103	brown/black	wall tile	Main entrance hall	" 4210431	30' x 5'	IATL 4210431
A104	white	Fibre board	Main FL hall bulletin board	" 4210432	2' x (all)	IATL 4210432
A105	white	12x12 grid ceiling tile	Main FL SW Lab	" 4210433	all	IATL 4210433
A106	"	"	Main FL SE lab east wall	good 4210434	"	IATL 4210434
A107	gray	wall tile	Main FL SW Lab	" 4210435	all	IATL 4210435
A108	green	Floor tile	Main FL SW & NW lab	" 4210436 covered.	all	IATL 4210436
A109	grey	Cement board	Main FL NW Lab fume hood	" 4210437	all	IATL 4210437
A110	grey	"	Main FL NW Lab sink backsplash	4210438 fair	2 1/2	IATL 4210438
A111	brown	Fibre board	Main FL N entry stairwell	4210439 good	100% stair	IATL 4210439
A112	yellow	floor tile	NW entry - upper stairs	4210440 fair	6 runners	10-0034

- Samples NOT received

BULK MATERIAL SAMPLING LOG

Worksite: Beaverlodge Date: Feb 6/11
 Client: PWCSC Job No.: 11166B
 Date Results Required: _____ No. Samples: _____ Page 9 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
→ A113	multi brown	Floor tile	⑩ NW entry stairs runner down	Fair 4210441	9 runners	110-0035
→ A114	9x9 light brown	"	⑩ bsmt storage 7	poor 4210442	1/4 of bsmt	110-0044
→ A115	9x9 dark brown	"	⑩ "	↓ 4210443	↓	"
→ A116	9x9 light brown	"	⑩ bsmt storage 8	↓ 4210444	↓	110-0047
→ A117	9x9 dark brown	"	⑩ "	↓ 4210445	↓	"
→ A118	black	caulking	⑩ bsmt cooler storage 5	good 4210446	2 places on north wall	110-0060
→ A119	gray	"	"	" 4210447	around light wall edge	10-0061
→ A120	white	insulation	⑩ bsmt (aircell storage 6 pipe)	" 4210448	≈ both coolers	10-0064
→ A121	white	insulation	⑩ bsmt Furnance inst.	poor (water damage) 4210449	furnace 1.5m w x 5ft tall	10-0071
→ A122	gray/green	Floor leveling compound	⑩ bsmt storage 9	poor 4210450	Storage 9 '8	110-0094
→ A123	white	drywall puddy.	⑩ bsmt storage 6	poor 4210451	all	110-0103
→ A124	"	"	⑩ bsmt storage 7 closet	" 4210452	all	110-0104
→ A125	"	"	⑩ bsmt hall	" 4210453	all.	110-0106
→ A126	"	"	⑩ 2nd FL office 6 closet	good 4210454	all	110-0107

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
PO Box 87073 RPO Douglas Sq.
Calgary AB T2Z 3V7

Report Date: 2/21/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4218902	Description / Location:	Tan Vermiculite Insulation (18) Attic North		
Client No.:	A89				
% Asbestos	Type	% Non-Asbestos Fibrous Material	Type	% Non-Fibrous Material	
None Detected	None Detected	None Detected	None Detected	100	

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gangue, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

Lab No.:	4218903	Description / Location:	Tan Vermiculite Insulation (18) Attic South		
Client No.:	A90				
% Asbestos	Type	% Non-Asbestos Fibrous Material	Type	% Non-Fibrous Material	
None Detected	None Detected	None Detected	None Detected	100	

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gangue, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

Feb 22, 2011
Please perform additional sampling
Steve Rensen
3 day

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government. This report shall not be reproduced except in full, without written approval of the laboratory.

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Mirza

Date: 2/21/2011

mc
2/28/11
(P)
3/3/11

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
PO Box 87073 RPO Douglas Sq.
Calgary AB T2Z 3V7

Report Date: 2/28/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 114218902F	Description / Location: Tan Vermiculite Insulation - Floats			
Client No.: A89	(18) Attic North			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Analysis by EPA-600/R-04/004.

Lab No.: 114218902S	Description / Location: Tan Vermiculite Insulation - Sinks			
Client No.: A89	(18) Attic North			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
0.14	Actinolite	None Detected	None Detected	99.86

Analysis by EPA-600/R-04/004.

Lab No.: 114218903F	Description / Location: Tan Vermiculite Insulation - Floats			
Client No.: A90	(18) Attic South			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Analysis by EPA-600/R-04/004.

Lab No.: 114218903S	Description / Location: Tan Vermiculite Insulation - Sinks			
Client No.: A90	(18) Attic South			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
0.87	Actinolite	None Detected	None Detected	99.13

Analysis by EPA-600/R-04/004.

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Crackel

Approved By: 

Date: 2/28/2011

Frank E. Ehrenfeld, III
Laboratory Director



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/28/2011
Project: Beaverlodge
Project No.: 11166B

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	114218904F	Description / Location:	Tan Vermiculite Insulation - Floats	
Client No.:	A91		(18) Attic East	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Analysis by EPA-600/R-04/004.

Lab No.:	114218904S	Description / Location:	Tan Vermiculite Insulation - Sinks	
Client No.:	A91		(18) Attic East	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
0.93	Actinolite	None Detected	None Detected	99.07

Analysis by EPA-600/R-04/004.

Lab No.:	114218991F	Description / Location:	Tan Vermiculite Insulation - Floats	
Client No.:	A198		(35) Cinderblock Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Analysis by EPA-600/R-04/004.

Lab No.:	114218991S	Description / Location:	Tan Vermiculite Insulation - Sinks	
Client No.:	A198		(35) Cinderblock Wall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
0.46	Actinolite	None Detected	None Detected	99.54

Analysis by EPA-600/R-04/004.

NIST-NVLAP No. 101165-0 NY-DOH No. 11021 AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: M. Crackel

Date: 2/28/2011



Waltech Associates Inc
SAFETY MANAGEMENT AND ANALYTICAL SERVICES

603, Burgess Close, Edmonton, AB T6B 1Z7
Phone: (780) 434-8784 Fax: (780) 439-4434
email: waltech@shaw.ca

ANALYSIS REPORT

Analysis Requested: ASBESTOS IDENTIFICATION

Requested by: Ballast Environmental Consulting Ltd PO Box 87073 Calgary, AB T2Z 3V7 Attention: Elvie Burton	Date received: February 14, 2011 Sample Type: Bulk No. of samples: 5 Worksite/ Job # 11166B Date completed: February 18, 2011
--	--

ANALYSIS RESULTS

Our File #	Ref #	Description	Asbestos type and percent	Other fibres detected
11AI0559	Z1	Gray parchment	CHRYBOTILE 50 – 75% AMOSITE <1%	Cellulose, glass fibres
11AI0560	Z2	Cement board	CHRYBOTILE 25 – 50%	None
11AI0561	Z3	Ceiling tile – holes	NONE DETECTED	Cellulose
11AI0562	Z4	Duct tape	NONE DETECTED	Cellulose
11AI0563	Z5	Cement board	CHRYBOTILE 25 – 50%	None

COMMENTS:

ANALYTICAL PARAMETERS:

Method used: NIOSH Method 9002 (4th Edition)

Methodology: Polarized Light Microscope (PLM)

Analysis Performed by: Irene Z. Walewski, B. Sc. Chem

Ray Sankey

From: Elvie Reinson [elvie@ballastenvironmental.com]
Sent: Friday, March 18, 2011 3:31 PM
To: raysankey@iatl.com
Cc: Cassandra Cropley; chris@ballastenvironmental.com
Subject: re analyze samples

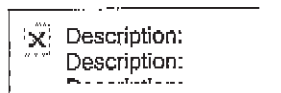
Hi Ray,
Could we please get the following 2 samples re analyzed for bulk asbestos:

Job 11166B
Sample 201 (floor tile layer only) your sample id: 4218994
Sample Dup 11 (floor tile layer only) your sample id: 4219032

5 day turnaround time

Thanks
Have a good weekend,
Elvie

BH 2/21/11



Elvie Reinson, PBIol, PRBio, EP
Ballast Environmental Consulting Ltd.
Tel 403.452.3110
Fax 403.452.3133
elvie@ballastenvironmental.com
www.ballastenvironmental.com

original analysis
8994 0.25 Chrys
9032 1.1 Chrys

This email contains confidential information and is for the sole use of the recipient. If you have received this email in error, please notify the sender and destroy all copies of this email and any attachments. Unauthorized disclosure or distribution is prohibited.

Client: Ballast Environmental Date: 3/21/11

Analyst: MC

Project: 11166B

Special Instructions: Re-analyze FT only

RTP: _____

M. Crackel

Reviewed By / Date: _____

QC Review / Date: _____

Code Key: 1-Ashed 2-HCl treatment 3-THF treatment 5-Recommend TEM analysis C=Composite NA=not analyzed (RTP)

Code 4	Client # IATL #	Stereo % (VAE)	Quantity (VAE) & Asbestos Type (circle PC if Pt Count)	Point Count Data 1	Non-Asbestos Fibers & Percent ₂	NFM %	Gross Sample Appearance			Optical Properties				CS DS Data 3			
							Layer Homo (y/n)	Color	Mineral Type (or FINE)	R.I. Oil(s) Used	Morph. (y/n)	Plec. (y/n)	BRel. (y/n)		Sign of Elong. (+/-)	Ext. Angle (r°)	
	A201 4218994	0	PC 0.25 Chrys 1400 45678	45678	ND	97.5	1	OW	FT	1.550	W	N	L	+	0	1500	
	Dup 11 4219032	0	PC 1.2 Chrys 325 45678	45678	ND	98.8	1	OW	FT	1.550	W	N	L	+	0	1500	
			PC /	/						1.550							
			PC 45678	45678						1.680							
			PC /	/						1.550							
			PC 45678	45678						1.680							
			PC /	/						1.550							
			PC 45678	45678						1.680							

Comments: _____

Note 1 (PC) Point Count via ELAP 198.1 for asbestos concentrations of approximately 1% - 10% and EPA 600 Point Count for asbestos concentrations near and less than one percent. Record asbestos points (AP), non-empty (NE) points, and number of slide mounts prepared. Refer to chart and PC data calculations. **Note 2** Provide at least one optical property for each non-asbestos fiber type detected. **Note 3** Use the RI values corrected for temperature (see S.C. Su '96) **Note 4** Use Treatment Key to describe methods used on sample to determine final result. Code may be placed in the far right margin. If no treatments are documented, it is assumed that no special treatments were employed. **Note 5** Report clear observations on layered materials, including SR/JC, FTM, absent layers, insufficient layers and other valuable descriptions.

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
PO Box 87073 RPO Douglas Sq.
Calgary AB T2Z 3V7

Report Date: 2/21/2011
Report Number: 0211007675
Project:
Project No.: 11166B

LEAD PAINT SAMPLE ANALYSIS SUMMARY

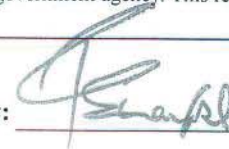
<u>Lab No.</u>	<u>Client No.</u>	<u>Location / Description</u>	<u>Concentration Lead By Weight (%)</u>
4217577	P1	Brown Paint Cinder Block Storage, Door 1	0.12***
4217578	P2	Yellow/White Paint 25; Interior Work Room	0.047***
4217579	P3	White Paint 15; Exterior	0.022
4217580	P4	Pink/Brown Paint 15; Interior Kickboard	0.34***
4217581	P5	White Paint 15; Office Kickboard	0.38***
4217582	P6	White Paint 15; North Lab Window Frames	0.31
4217583	P7	White Paint 15; North Lab Cabinets, North Wall	0.33
4217584	P8	Yellow Paint 15; Utility Room	0.25***
4217585	P9	Grey Paint 15; 1st-2nd Floor Stairs	0.055***
4217586	P10	White Paint 15; 2nd Floor, North Wall	5.4***

NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)
AIHA No. 100188 / NYSDOH-ELAP No. 11021

Analysis Methods: ASTM D3335-85A "Standard Method To Test For Low Concentrations Of Lead In Paint By Atomic Absorption Spectrophotometry"
EPA SW846-(7420/7421) "Standard Method To Test For Low Concentrations Of Lead In Soils, Sludges and Sediments By AAS"

Comments: Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation. All results are based on the samples as received at the lab. IATL assumes that appropriate sampling methods have been used and the data upon which these results are based have been accurately supplied by the client. Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies. LSD=0.2 ppm MDL=0.0024% by weight. RL= 0.010% by weight (based upon 100 mg sampled). * Insufficient sample provided to perform QC reanalysis (<200 mg) ** Not enough sample provided to analyze (<50 mg) *** Matrix / substrate interference possible. Sample results are not corrected for contamination by field or analytical blanks. This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any government agency. This report shall not be reproduced except in full, without written approval of the laboratory.

Date Received: 2/14/2011
Date Analyzed: 2/21/2011
Analyst: C. Shaffer

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director



9000 Commerce Parkway, Suite B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Report Number: 0211007497
Project:
Project No.: 11166B

LEAD PAINT SAMPLE ANALYSIS SUMMARY

<u>Lab No.</u>	<u>Client No.</u>	<u>Location / Description</u>	<u>Concentration Lead By Weight (%)</u>
4217587	P11	Blue Paint 1; Bsmt. Office	0.19***
4217588	P12	White Paint 1; Bsmt. Hall	<0.0078***
4217589	P13	Yellow Paint 1; Bsmt. Furnace Room	0.033***
4217590	P14	Black Paint 1; Bsmt. Dark Room	0.50
4217591	P15	Blue Paint 1; Bsmt. Under West Stairs	<0.0075***
4217592	P16	White Paint 1; 2nd Floor, Room 25 Window Frame	0.13***
4217593	P17	White Paint 1; Exterior South Window	0.39
4217594	P18	White Paint 1; Ceiling Main Floor Reception	<0.0087***
4217595	P19	White Paint 18; Bsmt. Under Stairs	0.28
4217596	P20	White Paint 18; Exterior West Side	2.8

NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)

AIHA No. 100188 / NYSDOH-ELAP No. 11021

Analysis Methods: ASTM D3335-85A "Standard Method To Test For Low Concentrations Of Lead In Paint By Atomic Absorption Spectrophotometry"
 EPA SW846-(7420/7421) "Standard Method To Test For Low Concentrations Of Lead In Soils, Sludges and Sediments By AAS"

Comments: Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation. All results are based on the samples as received at the lab. IATL assumes that appropriate sampling methods have been used and the data upon which these results are based have been accurately supplied by the client. Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies. LSD=0.2 ppm MDL=0.0024% by weight. RL= 0.010% by weight (based upon 100 mg sampled). * Insufficient sample provided to perform QC reanalysis (<200 mg) ** Not enough sample provided to analyze (<50 mg) *** Matrix / substrate interference possible. Sample results are not corrected for contamination by field or analytical blanks. This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any government agency. This report shall not be

Date Received: 2/14/2011
Date Analyzed: 2/21/2011
Analyst: C. Shaffer



9000 Commerce Parkway, Suite B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Report Number: 0211007497
Project:
Project No.: 11166B

LEAD PAINT SAMPLE ANALYSIS SUMMARY

<u>Lab No.</u>	<u>Client No.</u>	<u>Location / Description</u>	<u>Concentration Lead By Weight (%)</u>
4217597	P21	Green Paint 10; 2nd floor Storage	0.012***
4217598	P22	White/Yellow Paint 10; 2nd Floor Janitor's Closet	0.07***
4217599	P23	White Paint 10; 2nd Floor Office 7 Closet Door	0.014***
4217600	P24	Blue Paint 10; 2nd Floor Office 5	0.013***
4217601	P26	Purple Paint 10; Main Floor Storage	0.096***
4217602	P31	White Paint 10; Exterior Main Entrance	4.7
4217603	P32	Peach Paint 14; Interior Main Floor Frames Entry	0.33***
4217604	P33	White/Yellow Paint 14; SW Lab Main	<0.008***
4217605	P34	White/Yellow Paint 14; Furnace Room	0.077
4217606	P35	White Paint 14; NW Lab	0.035

NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)

AIHA No. 100188 / NYSDOH-ELAP No. 11021

Analysis Methods: ASTM D3335-85A "Standard Method To Test For Low Concentrations Of Lead In Paint By Atomic Absorption Spectrophotometry"
 EPA SW846-(7420/7421) "Standard Method To Test For Low Concentrations Of Lead In Soils, Sludges and Sediments By AAS"

Comments: Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation. All results are based on the samples as received at the lab. IATL assumes that appropriate sampling methods have been used and the data upon which these results are based have been accurately supplied by the client. Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies. LSD=0.2 ppm MDL=0.0024% by weight. RL= 0.010% by weight (based upon 100 mg sampled). * Insufficient sample provided to perform QC reanalysis (<200 mg) ** Not enough sample provided to analyze (<50 mg) *** Matrix / substrate interference possible. Sample results are not corrected for contamination by field or analytical blanks. This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any government agency. This report shall not be

Date Received: 2/14/2011
Date Analyzed: 2/21/2011
Analyst: C. Shaffer



9000 Commerce Parkway, Suite B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Report Number: 0211007497
Project:
Project No.: 11166B

LEAD PAINT SAMPLE ANALYSIS SUMMARY

<u>Lab No.</u>	<u>Client No.</u>	<u>Location / Description</u>	<u>Concentration Lead By Weight (%)</u>
4217607	P36	White Paint 14; Lab 2 East Window	0.58
4217608	P37	White Paint 14; Exterior Frame Office 1	3.4
4217609	P38	Blue Paint 17; Exterior Main Entrance	7.4
4217610	P39	Green Paint 17; Garage Interior	<0.008***
4217611	P40	White Paint 17; Work Bench	0.021***
4217612	P41	Grey Paint 17; Counter Top Work Bench	0.25
4217613	P42	Blue Paint 17; Stairway	0.0068
4217614	P43	Off-White Paint 35; Office 2 Walls	<0.0048
4217615	P44	Grey Paint 35; 2nd Floor Shelves	0.47
4217616	P45	Brown Paint 40; Frame	0.055***

NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)

AIHA No. 100188 / NYSDOH-ELAP No. 11021

Analysis Methods: ASTM D3335-85A "Standard Method To Test For Low Concentrations Of Lead In Paint By Atomic Absorption Spectrophotometry"
 EPA SW846-(7420/7421) "Standard Method To Test For Low Concentrations Of Lead In Soils, Sludges and Sediments By AAS"

Comments: Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation. All results are based on the samples as received at the lab. IATL assumes that appropriate sampling methods have been used and the data upon which these results are based have been accurately supplied by the client. Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies. LSD=0.2 ppm MDL=0.0024% by weight. RL= 0.010% by weight (based upon 100 mg sampled). * Insufficient sample provided to perform QC reanalysis (<200 mg) ** Not enough sample provided to analyze (<50 mg) *** Matrix / substrate interference possible. Sample results are not corrected for contamination by field or analytical blanks. This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any government agency. This report shall not be

Date Received: 2/14/2011
Date Analyzed: 2/21/2011
Analyst: C. Shaffer



9000 Commerce Parkway, Suite B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/21/2011
Report Number: 0211007497
Project:
Project No.: 11166B

LEAD PAINT SAMPLE ANALYSIS SUMMARY

<u>Lab No.</u>	<u>Client No.</u>	<u>Location / Description</u>	<u>Concentration Lead By Weight (%)</u>
4217617	P46	White Paint 26; Thrushing Room, South Wall	0.056
4217618	P47	White Paint 26; Seed Storage	0.094
4217619	P48	Blue Paint 26; Lab 2 Cupboards	0.014***
4217620	P49	White Paint 26; Exterior Window	0.19
4217621	P50	White Paint 26; Interior Ladies Washroom	0.044
4217622	PDup1	White Paint	0.58
4217623	PDup2	Green Paint	0.16***
4217624	PDup3	White Paint	4.5
4217625	PDup4	White/Yellow Paint	0.099

NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)

AIHA No. 100188 / NYSDOH-ELAP No. 11021

Analysis Methods: ASTM D3335-85A "Standard Method To Test For Low Concentrations Of Lead In Paint By Atomic Absorption Spectrophotometry"
 EPA SW846-(7420/7421) "Standard Method To Test For Low Concentrations Of Lead In Soils, Sludges and Sediments By AAS"

Comments: Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation. All results are based on the samples as received at the lab. IATL assumes that appropriate sampling methods have been used and the data upon which these results are based have been accurately supplied by the client. Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies. LSD=0.2 ppm MDL=0.0024% by weight. RL= 0.010% by weight (based upon 100 mg sampled). * Insufficient sample provided to perform QC reanalysis (<200 mg) ** Not enough sample provided to analyze (<50 mg) *** Matrix / substrate interference possible. Sample results are not corrected for contamination by field or analytical blanks. This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any government agency. This report shall not be

Date Received: 2/14/2011
Date Analyzed: 2/21/2011
Analyst: C. Shaffer

E-MAILED

2-21-11

International Asbestos Testing Laboratories
9000 Commerce Parkway, Suite B
Mt. Laurel, New Jersey 08054
Attn: Ray Sankey

Tel. 856 231-9449
Fax 856 231-9818

- Chain of Custody -

Client: Ballast Environmental Consulting Ltd.
PO Box 87073 RPO Douglas SQ
Calgary, AB Canada T2Z 3V7

Project Name: _____
Project No.: 111668

Phone: 403-452-3110
FAX: 403-452-3133

Contact: Elvie Reinson
Pager: Cell: 403-860-8524

Special Instructions: _____

Type:

Asbestos		Lead		Other	
<input type="checkbox"/> Air	<input type="checkbox"/> Soil	<input type="checkbox"/> Air	<input type="checkbox"/> Soil	_____	_____
<input type="checkbox"/> Bulk	<input type="checkbox"/> Dust	<input type="checkbox"/> Bulk	<input checked="" type="checkbox"/> Paint	_____	_____
<input type="checkbox"/> Water	<input type="checkbox"/> Other	<input type="checkbox"/> Water	<input type="checkbox"/> Other	_____	_____

Analysis Method:

<input type="checkbox"/> PCM : NIOSH 7400	<input type="checkbox"/> PLM : Bulk Asbestos EPA 600	<input type="checkbox"/> TEM : AHERA
<input type="checkbox"/> PCM : OSHA	<input type="checkbox"/> PLM : Point Counting 198.1	<input type="checkbox"/> TEM : NIOSH 7402
<input type="checkbox"/> PCM : Other _____	<input type="checkbox"/> PLM : NOB via 198.1 (PLM only)	<input type="checkbox"/> TEM : EPA Level II
<input type="checkbox"/> AAS : NIOSH 7082 (Air)	<input type="checkbox"/> If <1% by PLM, to TEM via 198.4	<input type="checkbox"/> TEM : Microvac / Wipe
<input type="checkbox"/> AAS : Lead in Drinking Water	to meet NYSDOH requirements **	<input type="checkbox"/> TEM : Asbestos in Water
<input type="checkbox"/> AAS : Lead in Paint ASTM D3335-85a	(**call to confirm TAT!)	<input type="checkbox"/> TEM : Bulk Analysis
<input type="checkbox"/> AAS : Lead Dust/Wipe "		<input type="checkbox"/> TEM : NOB 198.4
<input type="checkbox"/> AAS : Other Metals / Soil _____		<input type="checkbox"/> TEM : Other _____
		<input type="checkbox"/> Total Dust : NIOSH 0500

Turnaround Time: email results. elvie@ballastenvironmental.com
FAX: _____ **Verbals:** _____
date / time date / time

10 Day 5 Day 3 Day 2 Day 1 Day 6 hour RUSH
Preliminary FAX/Verbal Results Requested by: _____

Sample Numbers: Client #(s): P1-26, P31-50 IATL#(s): _____ Total: 54
(start) (end) (start) (end)

Chain of Custody: See attached. & PDup 1 - PDup 4.

Relinquished: Elvie Reinson	Date: Feb 21/11	Time: _____
Received: _____	Date: _____	Time: _____
Sample Log-in: 211611	Date: FEB 14 2011	Time: _____
Sample Prep: 2/21/11	Date: _____	Time: _____
Analyzed: _____	Date: _____	Time: _____
QA/QC Review: Am2/25/11	Date: _____	Time: _____

Archived/Released: _____ QA/QC InterLAB Use: _____ Date: _____ Time: _____

Lead

BULK MATERIAL SAMPLING LOG

Worksite: Beeuwerlodge Date: Feb 4/11

Client: PLUSE Job No.: 11166B

Date Results Required: _____ No. Samples: _____ Page 1 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
P1	brown	paint	cinderblock storage door	poor 4217577	door, frame,	109-0551
P2	yellow/white	"	(25) interior work room	good 4217578	room building	109-0611
P3	white	"	(15) exterior paint	poor 4217579	entire building	109-0628
P4	pink/brown	"	(15) interior kick board	fair 4217580	South storage	109-0651
P5	white	"	(15) office kick board	" 4217581	main floor kick board	109-0661
P6	white	"	(15) north office window frames	good 4217582	most main floor	109-0665
P7	white	"	(15) north lab. cabinets N. wall	good 4217583	"	109-0666
P8	yellow	"	(15) utility room	good/fair 4217584	utility room	109-0675
P9	gray	"	(15) 1st-2nd floor stairs	poor 4217585	stairs	109-0681
P10	white	"	(15) 2nd FL. north wall	good 4217586	exterior walls + ceiling	109-0702
P11	blue	"	(1) bsmt office	good 4217587	office + computer room	109-0710
P12	white	"	(1) bsmt hall	fair 4217588	entire	109-0772
P13	yellow	"	(1) bsmt furnace room	good 4217589	room	109-0786
P14	black	"	(1) bsmt dark room	good 4217590	room	109-0791

BULK MATERIAL SAMPLING LOG

Worksite: _____ Date: Feb 5/11
 Client: _____ Job No.: 11166B
 Date Results Required: _____ No. Samples: _____ Page 2 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
P15	blue green	paint	① bsmt under west stairs	good 4217591	original colour	109-0807
P16	white	paint	① 2nd FL Rm 25 window frame	fair 4217592	all frames	109-0845
P17	white	"	① exterior south window	fair 4217593	all frames	109-860
P18	"	"	① ceiling main floor reception	good 4217594	all white ceiling tile	109-0859
P19	white	"	⑱ bsmt under stairs	good 4217595	suspect under all	109-0873
P20	"	"	⑱ exterior west side	good 4217596	all	109-
P21	green	"	⑩ 2nd FL Storage	" 4217597	room	109-0950
P22	white/ yellow	"	⑩ 2nd fl janitor closet	" 4217598	-	109-0960
P23	white	"	⑩ 2nd FL office T closet door	" 4217599	-	109-0975
P24	blue	"	⑩ 2nd FL office 5	fair 4217600	rooms +	109-0966
P25	sample yellow	"	⑩ 2nd FL doors	good	all doors except #2	109-0976
P26	purple	"	⑩ Main FL storage	fair 4217601	room	109-0992
P27	light green	"	⑩ bsmt storage 6 closet	poor	room	109-0050
P28	light blue	"	⑩ bsmt storage 7	poor	"	109-0052

BULK MATERIAL SAMPLING LOG

 Worksite: Beaver Lodge Date: Feb 6/11

 Client: PWASC Job No.: 11166B

Date Results Required: _____ No. Samples: _____ Page of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
P29	white/yellow	paint	(10) B.Smt Storage 2	poor	all @ Storage Ceilings.	110-0081
P30	white	"	(10) B.Smt hallway	poor	all	110-0119
P31	"	"	(10) exterior Main entrance trim	F fair 4217602	all doors & trim	110-0120
P32	peach	"	(14) interior main FL. Frames entry	good 4217603		110-0132
P33	white/yellow	"	(14) SW Lab Main	" 4217604	room	110-0141 0138
P34	"	"	(14) Furnace Room	poor 4217605	-	110-0149
P35	white	"	(14) NW Lab	poor 4217606	room.	110-0183
P36	white	"	(14) Lab 2 east window	" 4217607	all 2nd R trim	110-0238
P37	white	"	(14) Exterior frame office 1	" 4217608	all exterior trim	110-0248
P38	blue	"	(17) Exterior main entrance	poor 4217609	all exterior	
P39	green	"	(17) GARAGE most interior	good 4217610		110-0344
P40	white	"	(17) WORK BENCH	fair 4217611	walls, ceiling and work bench	110-0345
P41	grey	"	(17) COUNTER TOP WORK BENCH	Fair 4217612	counter top and cupboards	110-0346
P42	blue	"	(17) Stairway	" 4217613	wall & shelving	110-0368

BATCH / SAMPLE MANAGEMENT REPORT

Customer No.: BAL082 Batch Number: **231390**
Customer: Ballast Enviro. Consl'tg Ltd. Project:
PO Box 87073 RPO Douglas Sq. Project Number: **11166B**
Calgary AB T2Z 3V7 TAT: **5 Day**
Customer Rep: RS Date/Time Rec'd: **2/14/2011**
of Samples: **54** Analysis: **Lead Paint** Time/Date Due: **2/21/2011**

Initials Signaling Acknowledgement RTP: _____ To PLM NOB _____ To TEM NOB _____

Special Instructions:

Admin Notes: Portal

Shipping Error:

- _____ Samples were not received in a sealed container. Bulk samples not double bagged.
- _____ Air Cassettes received open in bag... sample integrity compromised, possible contamination.
- _____ Samples received wet.
- _____ Samples received covered with dust... possible cross contamination.
- _____ Sample containers damaged, contents spilled... possible cross contamination.
- _____ Paperwork received in the same bag as samples possible contamination.
- _____ No / Incomplete Chain of Custody Received.
- _____ No / Incomplete Sample Log Received.
- _____ Sample container IDs do not match the client's sample log.
- _____ No Turnaround Time indicated.
- _____ PCM Re-prep for TEM NIOSH 7402. Cassettes previously opened and portion of filter removed.
- _____ Blank(s) not submitted as required by the requested analytical method.
- _____ Minimum shipping requirements not attained. See attached Carrier Air Bill.
- _____ Other: _____

Batch Error:

- _____ Wrong Client ID Listed:
- _____ Wrong Client Location Listed:
- _____ Wrong Project ID Listed:
- _____ Wrong TurnAround Time Listed:
- _____ Wrong Due Date Listed:
- _____ Wrong Date/Time Received Listed:
- _____ Wrong Analysis Method Listed:
- _____ Wrong Number of Samples Listed:

Login Error:

- _____ Sample Log Stamped Incorrectly:
- _____ Sample Containers Mislabeled:
- _____ Duplicate / Extra Samples Not Stamped:
- _____ Analyst Bench Sheet Error:

DAILY QUALITY CONTROL DATA

LEAD SAMPLE ANALYSIS

(DATE: 02 / 21 / 11)

Standard	Total Lead (mg)	Percent Recovery **
Reagent Blank	0.000	< LOQ
Blank Spike	0.500	104
Lab control Std # 401	0.397	111
Matrix Spike - LBP *	1.19	108
Matrix Spike - Wipe *	1.11	98
Matrix Spike - Soil *	0.477	110
Matrix spike - Air *	0.050	106
2.5 ppm Standard	0.25	103
10.0 ppm Standard	1.0	103
40.0 ppm Standard	4.0	99

ELPAT No. 100188

NIOSH PAT No. 100188

NYS-DOH No. 11021

Analysis Method: ASTM D3335-85A
NIOSH 7082
EPA SW846 3050 7420

Comments: IATL assumes that all sampling complies with accepted methods.
All client supplied sampling data is assumed to be correct when calculating results.
Detection limit based upon 0.2 mg/L reporting limit and sample size.
* NIST Traceable.
** 80-120% acceptable limits.

Analyzed By: R. Chad Shaffer
R. Chad ShafferDate: 2/21/11Approved By: Frank E. Ehrenfeld, III
Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
PO Box 87073 RPO Douglas Sq.
Calgary AB T2Z 3V7

Report Date: 2/10/2011
Report Number: 0211005449
Project: Building 10
Project No.: 11166B

LEAD PAINT SAMPLE ANALYSIS SUMMARY

<u>Lab No.</u>	<u>Client No.</u>	<u>Location / Description</u>	<u>Concentration Lead By Weight (%)</u>
4210112	P27	Lt. Green Paint 10; Bsmt Storage 6 Closet	0.098***
4210113	P28	Lt. Blue Paint 10; Bsmt Storage 7	0.091***
4210114	P29	White/Yellow Paint 10; Bsmt Storage 2	0.66
4210115	P30	White Paint 10; Bsmt Hallway	0.28


NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)

AIHA No. 100188 / NYSDOH-ELAP No. 11021

Analysis Methods: ASTM D3335-85A "Standard Method To Test For Low Concentrations Of Lead In Paint By Atomic Absorption Spectrophotometry"
EPA SW846-(7420/7421) "Standard Method To Test For Low Concentrations Of Lead In Soils, Sludges and Sediments By AAS"

Comments: Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation. All results are based on the samples as received at the lab. IATL assumes that appropriate sampling methods have been used and the data upon which these results are based have been accurately supplied by the client. Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies. LSD=0.2 ppm MDL=0.0024% by weight. RL= 0.010% by weight (based upon 100 mg sampled). * Insufficient sample provided to perform QC reanalysis (<200 mg) ** Not enough sample provided to analyze (<50 mg) *** Matrix / substrate interference possible. Sample results are not corrected for contamination by field or analytical blanks. This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any government agency. This report shall not be reproduced except in full, without written approval of the laboratory.

Sample Received: 2/9/2011
Date Analyzed: 2/10/2011
Analyst: C. Shaffer

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

MAILED
2.10.11

International Asbestos Testing Laboratories
9000 Commerce Parkway, Suite B
Mt. Laurel, New Jersey 08054
Attn: Ray Sankey

Tel. 856 231-9449
Fax 856 231-9818

- Chain of Custody -

Client: Ballast Environmental Consulting Ltd.
PO Box 87073 RPO Douglas SQ
Calgary, AB Canada T2Z 3V7

Project Name: Building 10
Project No.: 11166 B

Phone: 403-452-3110
FAX: 403-452-3133

Contact: Elvie Reinson
Pager: Cell: 403-860-8524

Special Instructions:

Type:

Asbestos		Lead		Other	
<input type="checkbox"/>	Air	<input type="checkbox"/>	Soil	<input type="checkbox"/>	Air
<input type="checkbox"/>	Bulk	<input type="checkbox"/>	Dust	<input checked="" type="checkbox"/>	Paint
<input type="checkbox"/>	Water	<input type="checkbox"/>	Other	<input type="checkbox"/>	Other

Analysis Method:

<input type="checkbox"/>	PCM : NIOSH 7400	<input type="checkbox"/>	PLM : Bulk Asbestos EPA 600	<input type="checkbox"/>	TEM : AHERA
<input type="checkbox"/>	PCM : OSHA	<input type="checkbox"/>	PLM : Point Counting 198.1	<input type="checkbox"/>	TEM : NIOSH 7402
<input type="checkbox"/>	PCM : Other _____	<input type="checkbox"/>	PLM : NOB via 198.1 (PLM only)	<input type="checkbox"/>	TEM : EPA Level II
<input type="checkbox"/>	AAS : NIOSH 7082 (Air)	<input type="checkbox"/>	If <1% by PLM, to TEM via 198.4	<input type="checkbox"/>	TEM : Microvac / Wipe
<input type="checkbox"/>	AAS : Lead in Drinking Water		to meet NYSDOH requirements **	<input type="checkbox"/>	TEM : Asbestos in Water
<input checked="" type="checkbox"/>	AAS : Lead in Paint ASTM D3335-85a		(**call to confirm TAT!)	<input type="checkbox"/>	TEM : Bulk Analysis
<input type="checkbox"/>	AAS : Lead Dust/Wipe "			<input type="checkbox"/>	TEM : NOB 198.4
<input type="checkbox"/>	AAS : Other Metals / Soil _____			<input type="checkbox"/>	TEM : Other _____
				<input type="checkbox"/>	Total Dust : NIOSH 0500

Turnaround Time: *elvie@ballastenvironmental.com* **FAX:** _____ **Verbals:** _____
date / time date / time

10 Day 5 Day 3 Day 2 Day 1 Day 6 hour RUSH

Preliminary FAX/Verbal Results Requested by: _____

Sample Numbers: Client #(s): *P27 - P30* IATL#(s): _____ Total: _____
(start) (end) (start) (end)

Chain of Custody:

Relinquished:	Elvie Reinson	Date:	<i>Feb 9</i>	Time:	
Received:		Date:	<i>Feb 9</i>	Time:	
Sample Log-in:	<i>cm 2/11/11</i>	Date:	<i>Feb 9</i>	Time:	
Sample Prep:	<i>cm 2/11/11</i>	Date:	<i>Feb 9</i>	Time:	
Analyzed:		Date:	<i>Feb 9</i>	Time:	
QA/QC Review:	<i>cm 2/17/11</i>	Date:	<i>Feb 9</i>	Time:	

Archived/Released: _____ QA/QC InterLAB Use: _____

IATL - By: _____ Date: _____ Time: _____

BULK MATERIAL SAMPLING LOG

Worksite: _____ Date: Feb 5/11
 Client: _____ Job No.: 11166B
 Date Results Required: _____ No. Samples: _____ Page 2 of 2

Sample #	Colour	Description	Location	Condition	Estimated Amo	Picture
P15	blue green	Paint	① bsmt under west stairs	good 4210101	origen colour	IATL 4210101
P16	white	Paint	① 2nd FL Rm 25 window frame	fair 4210102	all fram.	IATL 4210102
P17	white	"	① extenor South window	fair 4210103	all fram	IATL 4210103
P18	"	"	① Ceiling main floor reception	good 4210104	all white	IATL 4210104
P19	white	"	⑱ bsmt under stairs	good 4210105	su vt al.	IATL 4210105
P20	"	"	⑱ exterior west side	good 4210106a		IATL 4210106
P21	green	"	⑩ 2nd FL. Storage	" 4210107	"	IATL 4210107
P22	white/ yellow	"	⑩ 2nd fl janitor closet	" 4210108		IATL 4210108
P23	white	"	⑩ 2nd FL office 1 closet door	" 4210109		IATL 4210109
P24	blue	"	⑩ 2nd FL office 5	fair 4210110	R	IATL 4210110
P25	sample yellow	"	⑩ 2nd FL doors.	good	all doors except 4	109-0976
P26	purple	"	⑩ Main FL storage	fair 4210111		IATL 4210111
P27	light green	"	⑩ bsmt storage 6 closet	poor 4210112	room.	0050
P28	light blue	"	⑩ bsmt storage 7	poor 4210113	"	109-0052

BATCH / SAMPLE MANAGEMENT REPORT

Customer No.: BAL082 Batch Number: **230975**
Customer: Ballast Enviro. Conslt'g Ltd. Project: **Building 10**
PO Box87073 RPO DouglasSq. Project Number: **11166B**
Calgary AB T2Z 3V7 TAT: **1 Day**
Customer Rep: RS Date/Time Rec'd: **2/9/2011**
of Samples: **16** Analysis: **Lead Paint** Time/Date Due: **2/10/2011**

Initials Signaling Acknowledgement RTP: _____ To PLM NOB _____ To TEM NOB _____

Special Instructions:

Admin Notes: Portal

Shipping Error:

- _____ Samples were not received in a sealed container. Bulk samples not double bagged.
- _____ Air Cassettes received open in bag... sample integrity compromised, possible contamination.
- _____ Samples received wet.
- _____ Samples received covered with dust... possible cross contamination.
- _____ Sample containers damaged, contents spilled... possible cross contamination.
- _____ Paperwork received in the same bag as samples possible contamination.
- _____ No / Incomplete Chain of Custody Received.
- _____ No / Incomplete Sample Log Received.
- _____ Sample container IDs do not match the client's sample log.
- _____ No Turnaround Time indicated.
- _____ PCM Re-prep for TEM NIOSH 7402. Cassettes previously opened and portion of filter removed.
- _____ Blank(s) not submitted as required by the requested analytical method.
- _____ Minimum shipping requirements not attained. See attached Carrier Air Bill.
- _____ Other: _____

Batch Error:

- _____ Wrong Client ID Listed:
- _____ Wrong Client Location Listed:
- _____ Wrong Project ID Listed:
- _____ Wrong TurnAround Time Listed:
- _____ Wrong Due Date Listed:
- _____ Wrong Date/Time Received Listed:
- _____ Wrong Analysis Method Listed:
- _____ Wrong Number of Samples Listed:

Login Error:

- _____ Sample Log Stamped Incorrectly:
- _____ Sample Containers Mislabeled:
- _____ Duplicate / Extra Samples Not Stamped:
- _____ Analyst Bench Sheet Error:

DAILY QUALITY CONTROL DATA

LEAD SAMPLE ANALYSIS

(DATE: 02 / 10 / 11)

Standard	Total Lead (mg)	Percent Recovery **
Reagent Blank	0.000	< LOQ
Blank Spike	0.500	102
Lab control Std # 401	0.458	112
Matrix Spike - LBP *	1.11	104
Matrix Spike - Wipe *	0.99	106
Matrix Spike - Soil *	0.545	116
Matrix spike - Air *		
2.5 ppm Standard	0.25	104
10.0 ppm Standard	1.0	105
40.0 ppm Standard	4.0	97

ELPAT No. 100188

NIOSH PAT No. 100188

NYS-DOH No. 11021

Analysis Method: ASTM D3335-85A
NIOSH 7082
EPA SW846 3050 7420

Comments: IATL assumes that all sampling complies with accepted methods.
All client supplied sampling data is assumed to be correct when calculating results.
Detection limit based upon 0.2 mg/L reporting limit and sample size.
* NIST Traceable.
** 80-120% acceptable limits.

Analyzed By: 
R. Chad Shaffer

Date: 2/10/11

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
2: Administration office	Bsmt	Storage Room	storage	plywood	concrete & wood	tile	-	-	white	brown	-	brown & dark brown tile	A37	floor	-	-	-	positive
												brown & dark brown tile	A36	floor	-	-	-	positive
2: Administration office	Bsmt	Corridor	hallway	plywood	plywood	concrete	-	-	white	-	-	brown & dark brown tile	A35	floor under stairs	-	-	-	positive
2: Administration office	Bsmt	Utility Room	utility room	transite board	transite board	concrete	-	gray	gray	-	-	airocell	A43	pipe	-	-	-	positive
												green transite board	A41	wall	-	-	-	positive
												insulation	A42	pipe	-	-	-	positive
2: Administration office	Bsmt	Vault	vault	open to wood frame	drywall	tile	-	open	beige	brown & brown with flecks	-	brown tile	A33	floor	-	-	-	negative
												brown with flecks tile	A34	floor	-	-	-	negative
2: Administration office	Bsmt	NE Office	office	open to wood frame	wood	concrete	-	open	white	gray	-	insulation	A38	pipe	-	-	-	positive
												airocell	A39	pipe	-	-	-	positive
												airocell	A40	pipe	-	-	-	positive
2: Administration office	Bsmt	NW Lab	office	stipple	wood & concrete	concrete	A/C unit	white	light green	gray	-	-	-	light green	P17	wall	negative	
2: Administration office	Main	SE Office	office	plaster/drywall	plaster/drywall	linoleum	ceiling failure	white	white	green	-	plaster	A51	wall	-	-	-	negative
												-	-	-	white/green	P20	wall	negative
2: Administration office	Main	East Office	office	plaster/drywall	plaster/drywall	linoleum	-	white	white	green	-	brown insulation paper	A48	wall	-	-	-	negative
2: Administration office	Main	NE Office	office	plaster/drywall	plaster/drywall	linoleum	-	white	white	hardwood	-	-	-	-	-	-	-	-
2: Administration office	Main	NW Office	office	plaster/drywall	plaster/drywall	linoleum	-	white	yellow	green	-	plaster	A52	wall	-	-	-	negative
												brown insulation paper	A47	wall	-	-	-	negative
												-	-	-	yellow/green	P19	wall	negative
2: Administration office	Main	South Washroom	women's washroom	plaster/drywall	plaster/drywall	linoleum	-	white	white on pink	green	-	plaster	A50	wall	-	-	-	negative
												-	-	-	peach/pink	P18	wall	negative
2: Administration office	Main	North Washroom	men's washroom	plaster/drywall	plaster/drywall	linoleum	-	white	blue	green	-	green flooring	A46	floor	-	-	-	negative
2: Administration office	Main	Boot Room	entrance	plaster/drywall	plaster/drywall	linoleum	-	white	white on green	green	-	caulking	A62	window	-	-	-	negative
2: Administration office	Main	Hallway	hallway	plaster/drywall	plaster/drywall	linoleum	mercury thermometer	white	white	green	-	-	-	-	-	-	-	-

* no access ** limited visibility of area ***Sample not analyzed

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
2: Administration office	Main	Main Desk Area	front desk area	plaster/drywall	plaster/drywall	linoleum	ceiling failure	white	white	green	-	green flooring	A45	floor	-	-	-	negative
												plaster	A49	wall	-	-	-	negative
2: Administration office	Second	SE Office	office	plaster/drywall	plaster/drywall/stipple	linoleum	ceiling failure	white	white	painted gray	-	gray linoleum	A58	floor	-	-	-	negative
												plaster & stipple	A54	ceiling	-	-	-	negative
2: Administration office	Second	E Office	office	plaster/drywall	plaster/drywall/stipple	linoleum	ceiling failure	white	white	painted gray	-	-	-	-	-	-	-	-
2: Administration office	Second	NE Office	office	plaster/drywall	plaster/drywall/stipple	linoleum	ceiling failure	white	white	painted gray	-	gray linoleum	A59	floor	-	-	-	negative
2: Administration office	Second	NW Office	office	plaster/drywall	plaster/drywall	linoleum	ceiling failure	white	white	painted gray	-	plaster	A53	ceiling	-	-	-	negative
2: Administration office	Second	W Office	office	plaster/drywall	plaster/drywall	linoleum	mould & A/C unit	white	white	painted gray	-	-	-	-	-	-	-	-
2: Administration office	Second	File Room	library	plaster/drywall	plaster/drywall/stipple	linoleum	PCB ballasts x2	white	white	painted gray	-	stipple	A56	ceiling	-	-	-	negative
												plaster & stipple	A55	ceiling	-	-	-	negative
2: Administration office	Second	South Room	-	plaster/drywall	plaster/drywall	linoleum	-	white	white	painted gray	-	-	-	-	-	-	-	-
2: Administration office	Second	Hallway	hallway	plaster/drywall	plaster/drywall	linoleum	-	white	white	painted gray	-	gray linoleum	A57	floor	-	-	-	negative
2: Administration office	-	Stairwell	stairwell	plaster/drywall	plaster/drywall	linoleum	-	white	white	green	-	green flooring	A44	floor	-	-	-	negative

* no access ** limited visibility of area ***Sample not analyzed

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
2: Administration office	Exterior	Exterior	-	shingles	wood & concrete stucco	-	-	white	brown & yellow	-	-	gray parchent	A67	north wall	-	-	-	negative
												gray parchent	A66	west wall	-	-	-	negative
												off-white stucco	A65	exterior	-	-	-	negative
												gray mortar	A64	chimney	-	-	-	negative
												yellow stucco	A63	north wall	-	-	-	negative
												caulking	A61	east window	-	-	-	negative
												yellow stucco	A60	main entrance	-	-	-	negative
-	-	-	yellow	P22	wall	negative												
-	-	-	brown	P21	trim	negative												
2: Administration office	Attic	attic	-	-	fiberglass	linoleum	-	white	off-white	-	-	-	-	-	-	-	-	-
6: Car Garage	Main	Exterior	exterior	metal roof	wood siding	-	-	-	white	-	-	-	-	-	-	-	-	-
6: Car Garage	Main	Interior	interior	tile	wood	gravel & concrete	animal scat	white	bare	bare	-	-	-	-	-	-	-	-
14: Storage Bldg and Lab	Main	East Room	office	wood panels	wood panels	concrete	mould on ceiling in 3 areas	white	white	gray	-	caulking	A14	window	-	-	-	negative
												-	-	-	white	P6	wall	negative
14: Storage Bldg and Lab	Main	Probe Room	probe room	wood panels	wood panels	concrete	-	white	white	bare	-	-	-	-	-	-	-	-
14: Storage Bldg and Lab	Main	Threshing Room	threshing room	wood panels	wood	concrete	-	silver	bare	bare	-	-	-	-	-	-	-	-
14: Storage Bldg and Lab	Main	Back Room	office	wood panels	wood	concrete	-	white	white	bare	-	-	-	-	-	-	-	-
14: Storage Bldg and Lab	Main	West Room	office	wood panels	wood panels	concrete	mercury thermometer	white	white	gray	-	insulation	A13	wire	-	-	-	negative
14: Storage Bldg and Lab	Main	Furnace Room	furnace room	wood panels	wood panels	concrete	-	white	white	gray	-	-	-	-	-	-	-	-
14: Storage Bldg and Lab	Exterior	Exterior	-	stipple	plaster	rock/ concrete	emergency light, possible mercury switch & hose cabinet	white	beige	rocks	-	-	-	-	white/red	P7	wall	negative
23: Workshop & Office	Main	Shop	shop	wood panels	panels	concrete	2 mercury switches	white over silver	white over silver	gray	-	mortar	A12	chimney	-	-	-	negative
												green board	A11	north wall	-	-	-	positive
												tar paper	A10	north wall	-	-	-	negative
												-	-	-	silver/white	P5	wall	negative
23: Workshop & Office	Main	Office	office	wood	wood	concrete	-	white	white	gray	-	-	-	-	-	-	-	-

* no access ** limited visibility of area ***Sample not analyzed

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
23: Workshop & Office	Main	Washroom	washroom	wood	wood	concrete	-	white	white	gray	-	-	-	-	-	-	-	-
23: Workshop & Office	Main	Storage Area	storage	-	-	-	-	-	-	-	-	welding blanket	A7	floor	-	-	-	negative
23: Workshop & Office	Exterior	Exterior	-	metal roof	wood siding	-	-	-	white	-	-	caulking	A8	window	-	-	-	negative
												-	-	-	white/red	P4	wall	negative
23: Workshop & Office	Attic	Attic	-	wood	wood	wood	-	-	-	-	-	insulation	A9	wire	-	-	-	negative
33: Processing & Carpenter Shop	Main	West Room	-	wood panels	wood panels	concrete	mercury switch	white	white	gray	-	-	-	-	white	P3	wall	negative
33: Processing & Carpenter Shop	Main	East Room	work area	wood panels	wood panels	concrete	freezer	silver	silver	gray	-	duct insulation	A1	duct	-	-	-	positive
												-	-	-	silver	P2	wall	negative
33: Processing & Carpenter Shop	Main	Seed Storage	storage	wood	wood	concrete	mercury switch	silver	silver	gray	-	-	-	-	-	-	-	-
33: Processing & Carpenter Shop	Main	Furnace Room	furnace room	drywall	drywall	concrete	-	-	bare	gray	-	mortar	A6	chimney	-	-	-	negative
33: Processing & Carpenter Shop	Exterior	Exterior	wood chip insulation	wood chip insulation	wood siding	-	-	-	red on white	-	-	caulking	A2	window	-	-	-	negative
												-	-	-	white/red	P1	wall	negative
33: Processing & Carpenter Shop	Attic	Attic	-	fibre board	fibre board	wood planks	-	-	bare	bare	-	insulation	A3	wall	-	-	-	negative
												insulation	A4	wall	-	-	-	negative
												insulation	A5	wall	-	-	-	negative
37: Drying Shed	Main	Dryers	dryers	-	asbestos board	asbestos board	-	-	-	-	-	gasket	A74	in dryer door	-	-	-	negative
												gasket	A75	in dryer door	-	-	-	negative
												white insulation board	A76	south dryer door	-	-	-	positive
												yellow insulation board	A73	dryer doors	-	-	-	positive
37: Drying Shed	Main	Interior	interior	asbestos board	asbestos board	concrete	-	gray	gray	bare	-	wall board	A72	south wall	-	-	-	positive
37: Drying Shed	Exterior	Exterior	-	metal	tin siding over wood	-	-	-	-	-	-	-	-	-	-	-	-	-
57: Sewege Lift Pump House	Main	Interior	interior	tile	wood	concrete	-	white	white	black & white	-	-	-	white	P16	wall	negative	
57: Sewege Lift Pump House	Exterior	Exterior	-	tin roof	wood	-	-	-	white	-	-	black tar paper	A31	wall	-	-	-	negative
												caulking	A32	door	-	-	-	negative
												-	-	-	white	P15	wall	positive

* no access ** limited visibility of area ***Sample not analyzed

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
59: Tin Barn Storage	Main	Interior	interior	tin/treated wood	tin/treated wood	dirt/gravel	-	-	-	-	-	-	-	-	-	-	-	-
59: Tin Barn Storage	Exterior	Exterior	-	tin roof	tin/treated wood	-	-	-	-	-	-	-	-	-	white	P25	door	negative
60: Duplex House	Bsmt	Stairwell	stairwell	drywall	drywall	wood & tile	-	yellow	yellow	gray & multi	-	stair runner	A19	stair	-	-	-	negative
												tile	A16	floor	-	-	-	negative
												drywall putty	A15	under stairs	-	-	-	positive
												-	-	-	light green	P8	door & frame	negative
												-	-	-	light gray	P9	stairs	negative
-	-	-	yellow	P10	wall	positive												
60: Duplex House	Bsmt	Cold Room	cold room	tile	cement	cement	blue & green shelving	white	-	blue marble (new)	-	-	-	-	-	-	-	-
60: Duplex House	Bsmt	Main Room	main room	tile	cement	cement	-	white	-	blue marble (new)	-	pipe wrap	A27	pipe	-	-	-	negative
												off-white tile	A17	floor of entryway	-	-	-	positive
												drywall putty	A18	entryway	-	-	-	positive
60: Duplex House	Main	Office	office	tile	drywall	hardwood	-	white	white	-	-	-	-	-	-	-	-	-
60: Duplex House	Main	Entry Way	Boot room	tile	drywall & linoleum	tile	water intrusion	white	yellow	gray	-	-	-	-	-	-	-	-
60: Duplex House	Main	Kitchen	kitchen	drywall	tile	linoleum	-	white	white	beige	-	-	-	-	-	-	-	-
60: Duplex House	Main	Main Hall & Stairwell	hallway & stairwell	tile	drywall	fabric lining over linoleum	-	white	white	blue/gray lines	-	drywall putty	A23	stairwell	-	-	-	positive
60: Duplex House	Main	Boot Room #2	boot room	-	drywall	linoleum	-	-	white	white squares	-	-	-	-	-	-	-	-
60: Duplex House	Main	Kitchen #2	kitchen	-	drywall & tile	linoleum	-	-	white	-	-	-	-	-	-	-	-	-
60: Duplex House	Main	Living Room #2	living room	-	drywall	hardwood	mercury thermometer	-	white	-	-	-	-	-	-	-	-	-
60: Duplex House	Main	Main Hall & Stairwell #2	stairwell	-	drywall	hardwood	-	-	white	-	-	-	-	-	-	-	-	-
60: Duplex House	Second	Upstairs Hall	hall	tile	drywall	hardwood	closet: pink paint	white	white over yellow	-	-	-	-	-	pink	P11	closet	negative
60: Duplex House	Second	Conference Room	conference room	tile	drywall	hardwood	closet: green paint & mould & water damage	white	white over green	-	-	drywall putty	A20	south closet	-	-	-	positive
60: Duplex House	Second	Upstairs East Room	office	textured	drywall	hardwood	-	white	white	-	-	-	-	-	-	-	-	-

* no access ** limited visibility of area ***Sample not analyzed

Building	Floor	Room	Description	Ceiling	Walls	Floor	Misc.	Ceiling Color	Wall Color	Floor Color/Pattern	Ceiling Tile Size	Asbestos Sample	Sample ID	Location	Paint Sample	Sample ID	Location	Result
60: Duplex House	Second	Washroom	washroom	drywall	drywall & tiles	linoleum	closet: Green paint & brown floor tile., closet 2: yellow paint & green linoleum	white	white & gray	gray		-	-	-	-	-	-	-
												orange & purple drywall putty	A21	closet	-	-	-	negative
												-	A22	wall	-	-	-	negative
60: Duplex House	Second	Washroom #2	washroom	stipple	drywall & tile	tile	water damage	-	white on blue	gray	-	white & blue	A30	floor tile	-	-	-	negative
60: Duplex House	Second	NW Bedroom #2	bedroom	-	drywall	hardwood	closet: water damage on ceiling	-	white on blue	-	-	-	-	-	-	-	-	-
60: Duplex House	Second	SW Bedroom #2	bedroom	-	drywall	hardwood	-	-	white on pink	-	-	-	-	-	-	-	-	-
60: Duplex House	Second	East Bedroom #2	bedroom	-	drywall	hardwood	-	-	white on blue	-	-	-	-	-	-	-	-	-
60: Duplex House	Exterior	Exterior	-	drywall	plaster	rock/ concrete	-	white	red & black	rocks	-	black tar paper	A29	exterior	-	-	-	negative
												shingle	A28	dog house under deck	-	-	-	negative
												stucco	A24	northwest	-	-	-	negative
												stucco	A25	southwest	-	-	-	negative
												stucco	A26	east	-	-	-	negative
												-	-	-	white	P13	trim	positive
-	-	-	red	P12	trim	negative												
60: Duplex House	Attic	Attic	-	stipple	plaster	rock/ concrete	-	-	-	-	-	-	-	-	-	-	-	-
60A: Double Garage	Main	Interior	interior	stipple	wood	concrete	-	white	white & red trim	rocks	-	-	-	-	-	-	-	-
60A: Double Garage	Exterior	Exterior	-	shingles	metal & brick	old roof (tar)	-	white	white	black	-	-	-	white	P14	wall	positive	
62: Shed	-	-	shed	-	treated wood & wood siding	dirt	-	-	-	-	-	-	-	white	P26	wall	positive	
Pump House	Main	East Room	-	wood	cement & wood	concrete	water damage & 40kg of Cl	white	white & gray	gray	-	-	-	-	-	-	-	-
Pump House	Main	West Room	-	wood	cement & wood	concrete	mercury thermometer	white	white & gray	gray	-	vermiculite	A70	attic	-	-	-	positive
												vermiculite	A71	attic	-	-	-	positive
												-	-	-	white	P24	wall	negative
Pump House	Exterior	Exterior	-	tin roof	wood	-	-	-	white	-	-	gray caulking	A69	south window	-	-	-	negative
												shingle	A68	lean-to roof	-	-	-	negative
												-	-	-	white	P23	wall	positive

* no access ** limited visibility of area ***Sample not analyzed



VICINITY MAP



Date: Feb, 2011 Drawn by: MSN

Edited: - Edited by: -

Project Name: Hazardous Materials Assessment

Project Location: Fort Vermillion Research Centre

Project No.: 11166

**Appendix
3b-1**



Building Assessed
 Building Number

SITE DIAGRAM: BUILDINGS ASSESSED



Date: Feb, 2011

Edited: Mar, 2011

Drawn by: Air Photo Distribution

Edited by: KC

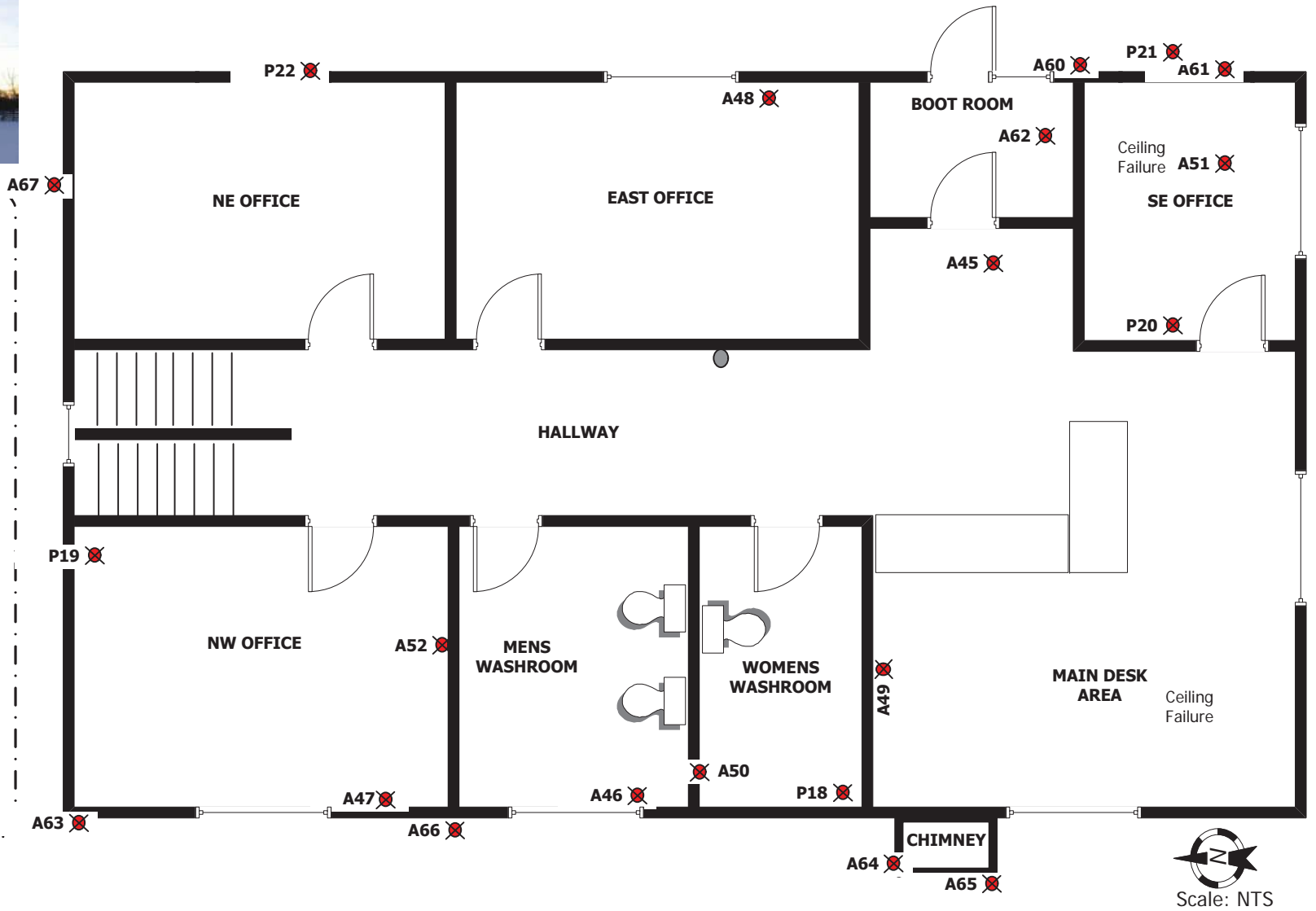
Project Name: Hazardous Materials Assessment Project No.: 11166

Project Location: Fort Vermillion Research Centre

**Appendix
 3b-2**



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos



**SITE SAMPLING DIAGRAM: #2 ADMINISTRATION OFFICE
Main Floor**



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix












Edited: Feb, 2011

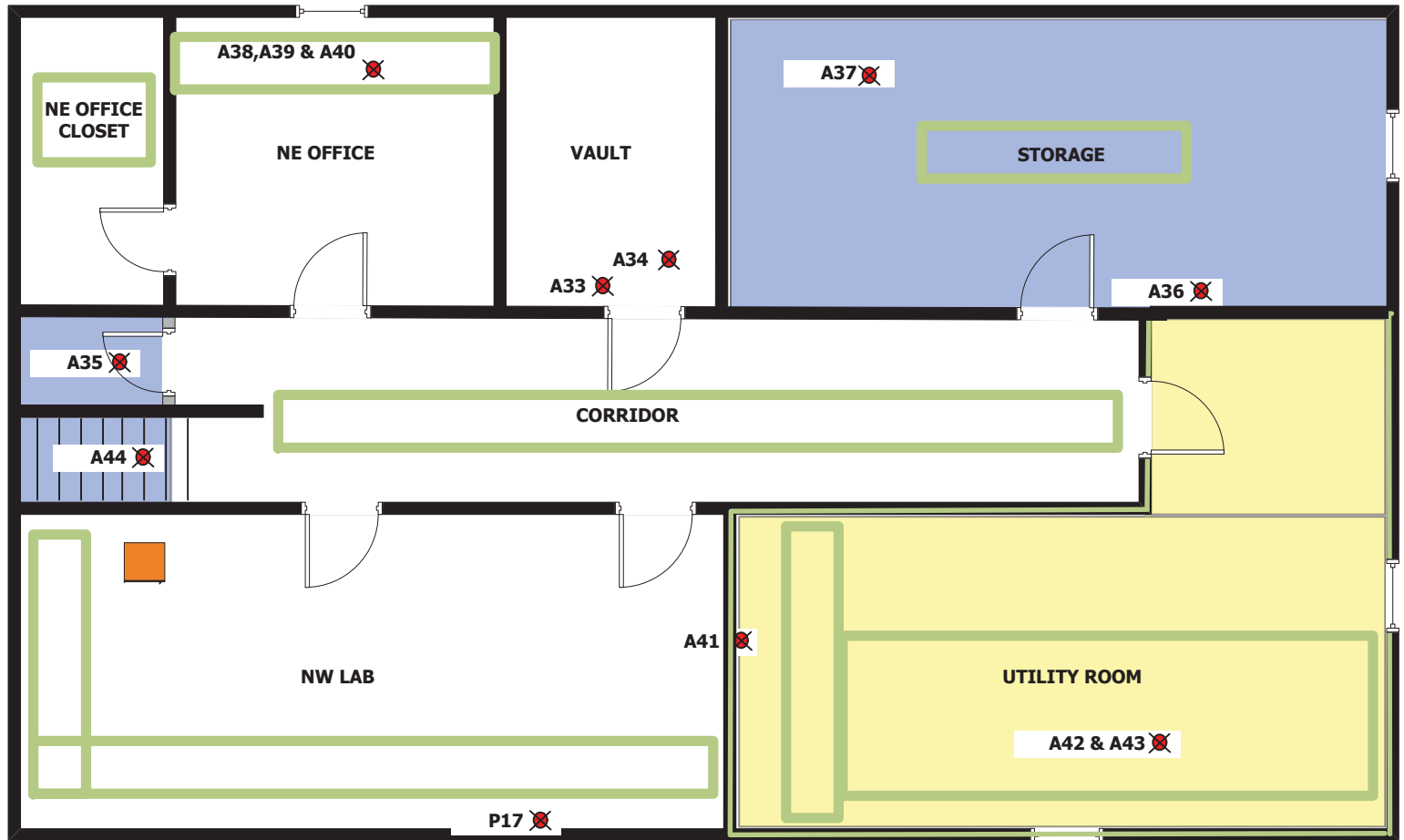
Edited by: ER

Project Location: Fort Vermillion Research Centre

3b-3



- Sample ID
 A = asbestos sample
 P = paint sample
-  Sampling Location
 -  Floor Covering containing Asbestos
 -  Drywall Mud/Stipple/Wall covering containing Asbestos
 -  Wall and/or Attic Insulation containing Asbestos
 -  Pipe/tank insulation containing Asbestos
 -  Ozone Depleting Substance (ODS)
 -  ACM Sink Coating
 -  Radioactive Items
 -  Mercury
 -  Lead paint
 -  Window caulking containing Asbestos



**SITE SAMPLING DIAGRAM: #2 ADMINISTRATION OFFICE
Basement**



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix

Edited: Feb, 2011

Edited by: ER

Project Location: Fort Vermillion Research Centre

3b-4



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos



SCALE: NTS

SITE SAMPLING DIAGRAM: #2 ADMINISTRATION OFFICE Second Floor



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix

Edited: Feb, 2011












Edited by: ER

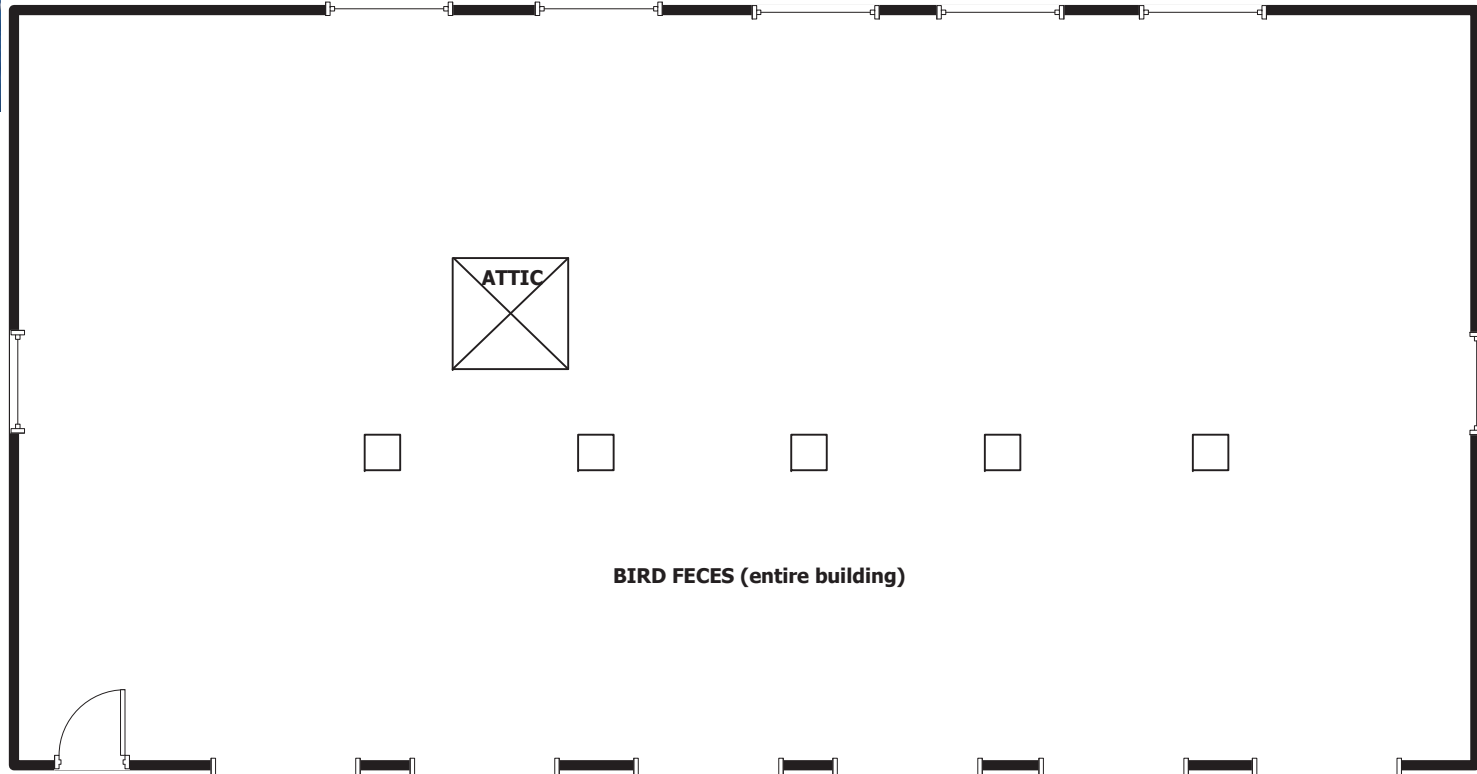
Project Location: Fort Vermillion Research Centre

3b-5



Sample ID
 A = asbestos sample
 P = paint sample

-  Sampling Location
-  Floor Covering containing Asbestos
-  Drywall Mud/Stipple/Wall covering containing Asbestos
-  Wall and/or Attic Insulation containing Asbestos
-  Pipe/tank insulation containing Asbestos
-  Ozone Depleting Substance (ODS)
-  ACM Sink Coating
-  Radioactive Items
-  Mercury
-  Lead paint
-  Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #6 GARAGE AND STORAGE



Date: Feb, 2011
 Edited: Feb, 2011

Drawn by: CL
 Edited by: ER












Project Name: Hazardous Materials Assessment
 Project Location: Fort Vermillion Research Centre

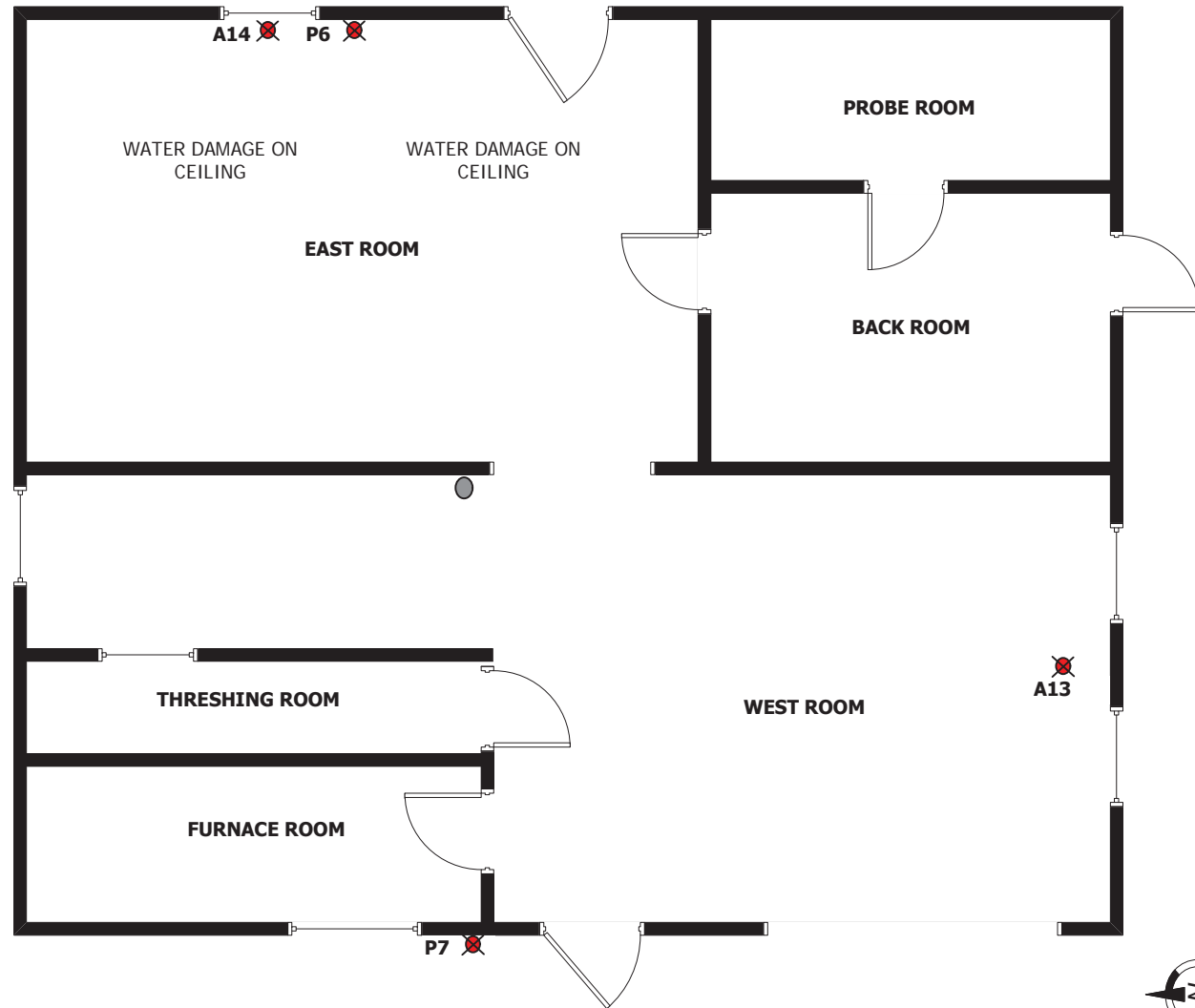
Project No.: 11166

**Appendix
 3b-6**



Sample ID
 A = asbestos sample
 P = paint sample

-  Sampling Location
-  Floor Covering containing Asbestos
-  Drywall Mud/Stipple/Wall covering containing Asbestos
-  Wall and/or Attic Insulation containing Asbestos
-  Pipe/tank insulation containing Asbestos
-  Ozone Depleting Substance (ODS)
-  ACM Sink Coating
-  Radioactive Items
-  Mercury
-  Lead paint
-  Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #14 Drying & Threshing Shed



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

**Appendix
3b-7**

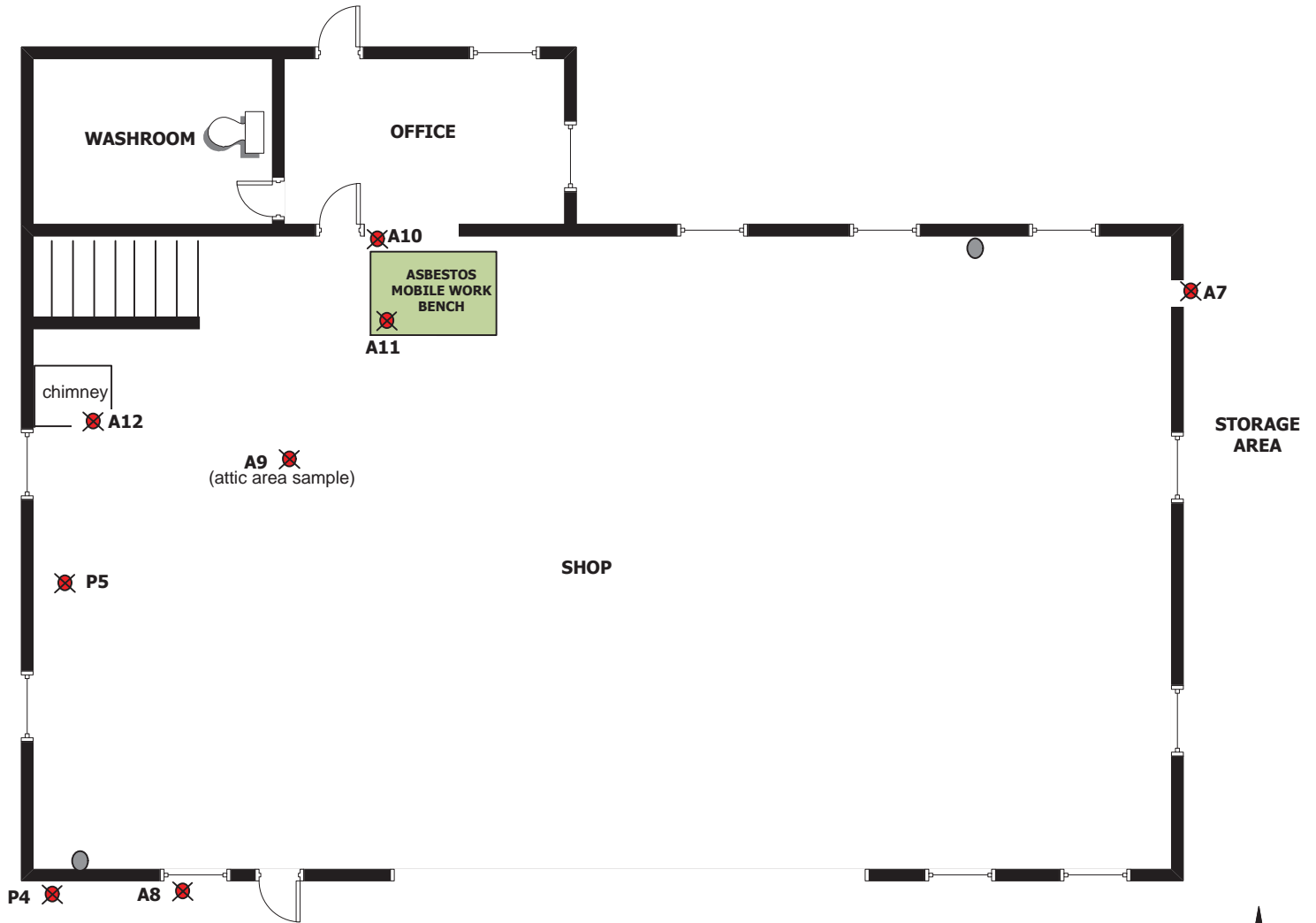
Edited: Feb, 2011

Edited by: ER

Project Location: Fort Vermillion Research Centre



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos



SITE SAMPLING DIAGRAM: #23 WORKSHOP AND OFFICE



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

**Appendix
3b-8**

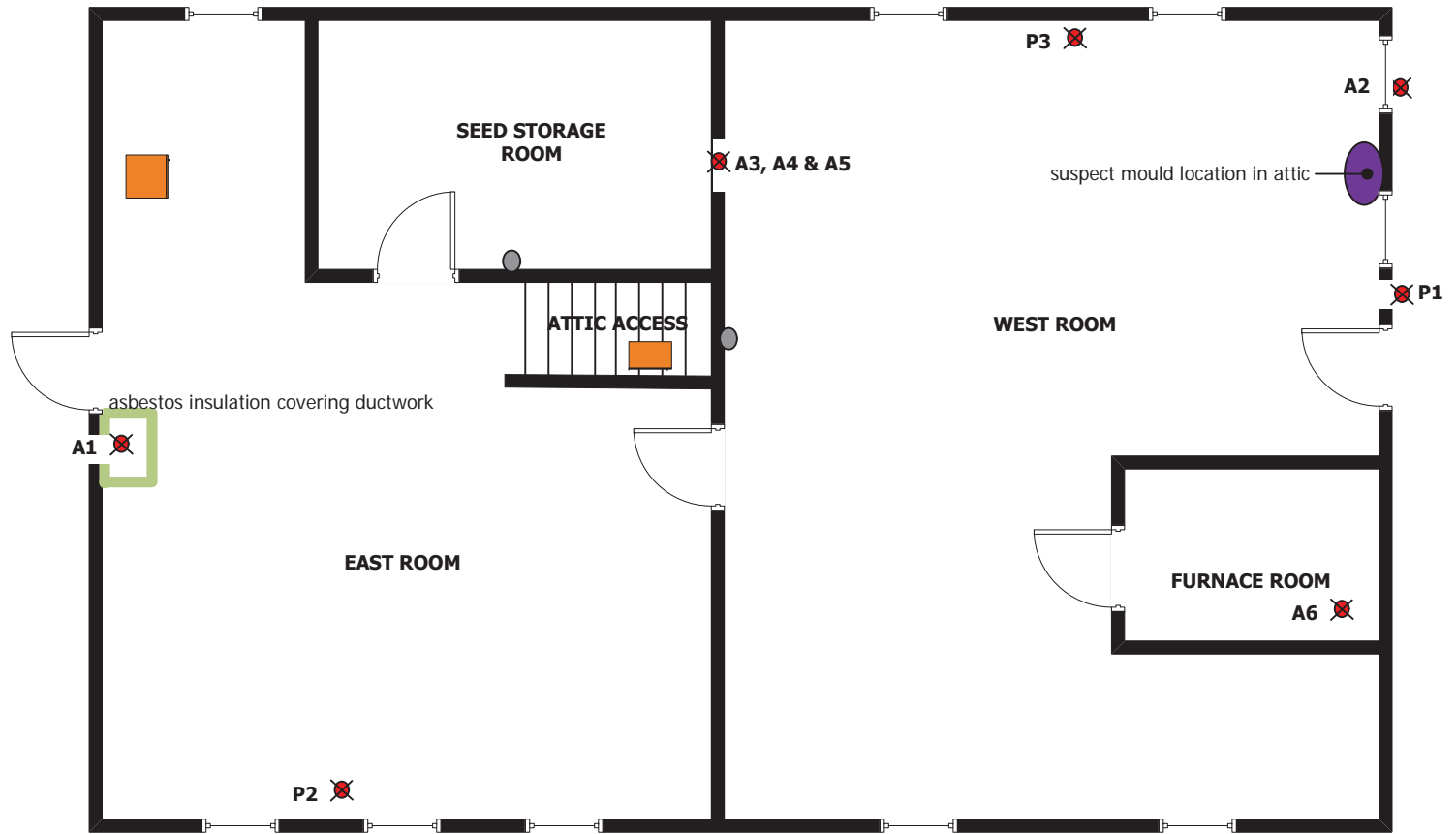
Edited: Feb, 2011

Edited by: ER

Project Location: Fort Vermillion Research Centre



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #33 PROCESSING & CARPENTER SHOP



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

**Appendix
 3b-9**

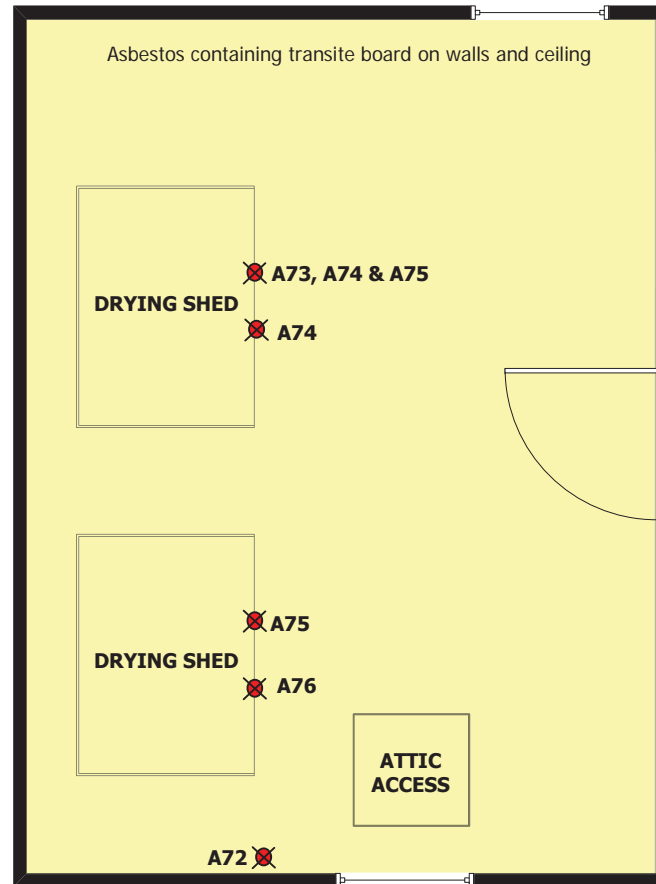
Edited: Mar, 2011

Edited by: ER

Project Location: Fort Vermillion Research Centre



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #37 DRYING SHED



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix












Edited: Feb, 2011

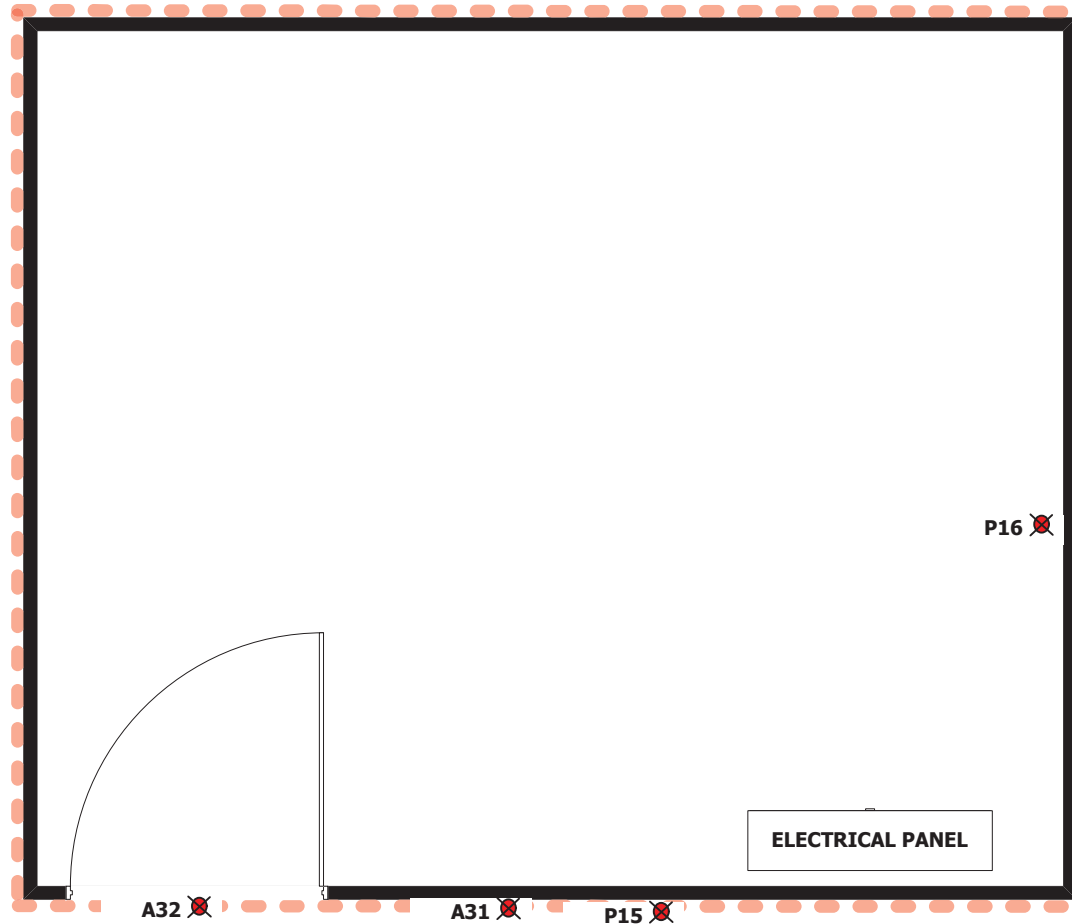
Edited by: ER

Project Location: Fort Vermillion Research Centre

3b-10



- Sample ID
 A = asbestos sample
 P = paint sample
-  Sampling Location
 -  Floor Covering containing Asbestos
 -  Drywall Mud/Stipple/Wall covering containing Asbestos
 -  Wall and/or Attic Insulation containing Asbestos
 -  Pipe/tank insulation containing Asbestos
 -  Ozone Depleting Substance (ODS)
 -  ACM Sink Coating
 -  Radioactive Items
 -  Mercury
 -  Lead paint
 -  Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #57 SEWAGE LIFT PUMP HOUSE



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166












**Appendix
 3b-11**

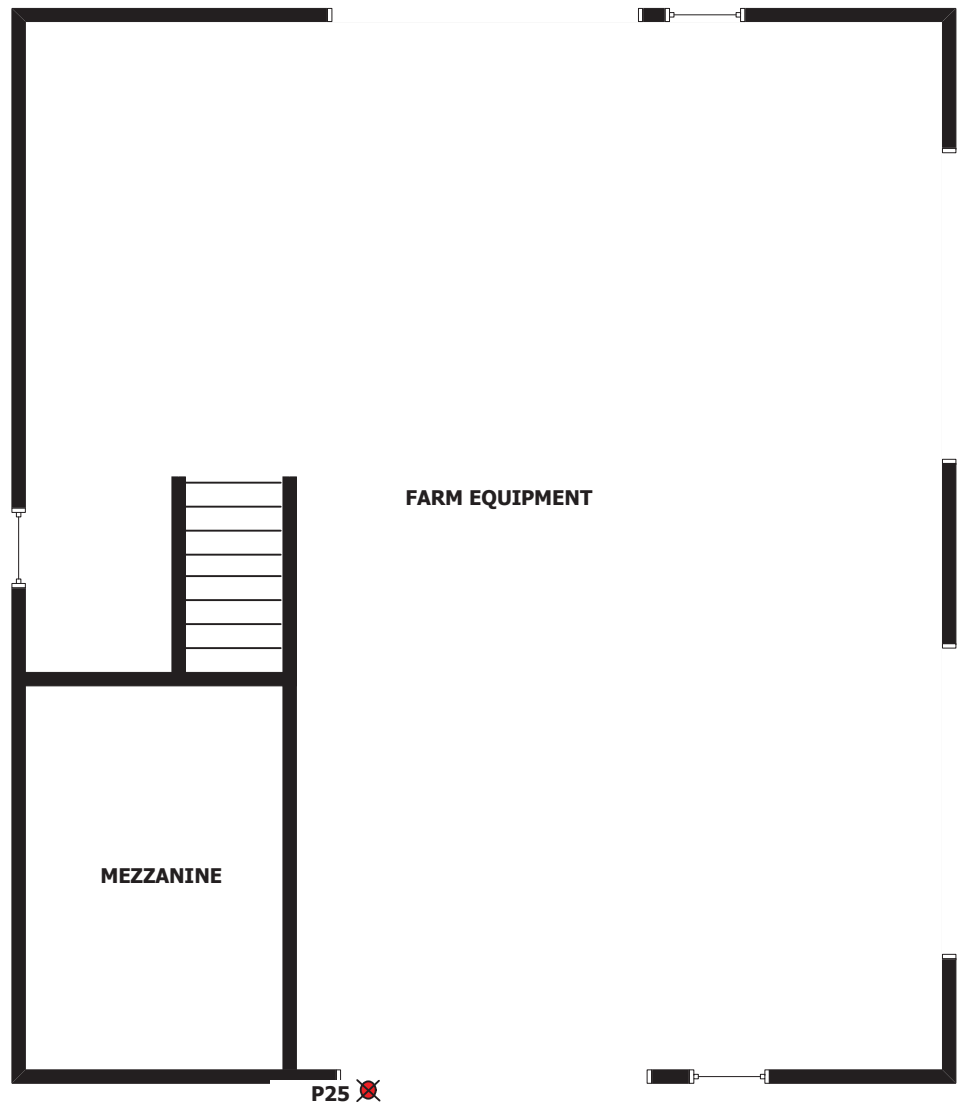
Edited: Feb, 2011

Edited by: ER

Project Location: Fort Vermillion Research Centre



- Sample ID
 A = asbestos sample
 P = paint sample
-  Sampling Location
 -  Floor Covering containing Asbestos
 -  Drywall Mud/Stipple/Wall covering containing Asbestos
 -  Wall and/or Attic Insulation containing Asbestos
 -  Pipe/tank insulation containing Asbestos
 -  Ozone Depleting Substance (ODS)
 -  ACM Sink Coating
 -  Radioactive Items
 -  Mercury
 -  Lead paint
 -  Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #59 TIN BARN STORAGE



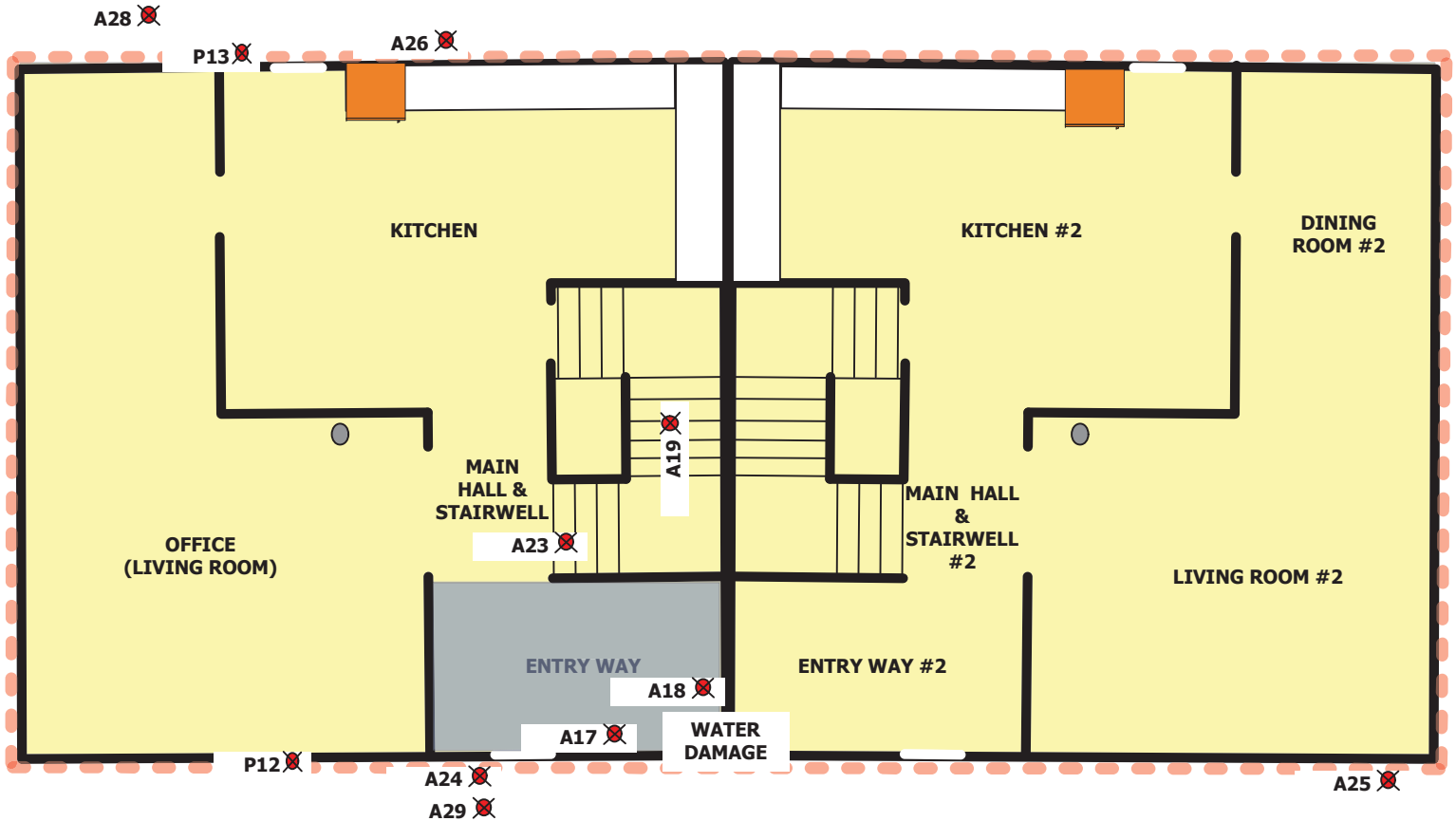
Date: Feb, 2011 Drawn by: CL
 Edited: Feb, 2011 Edited by: ER

Project Name: Hazardous Materials Assessment Project No.: 11166
 Project Location: Fort Vermillion Research Centre

**Appendix
 3b-12**



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #60 DUPLEX HOUSE Main Floor



Date: Feb, 2011

Drawn by: KC

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix












Edited: Feb, 2011

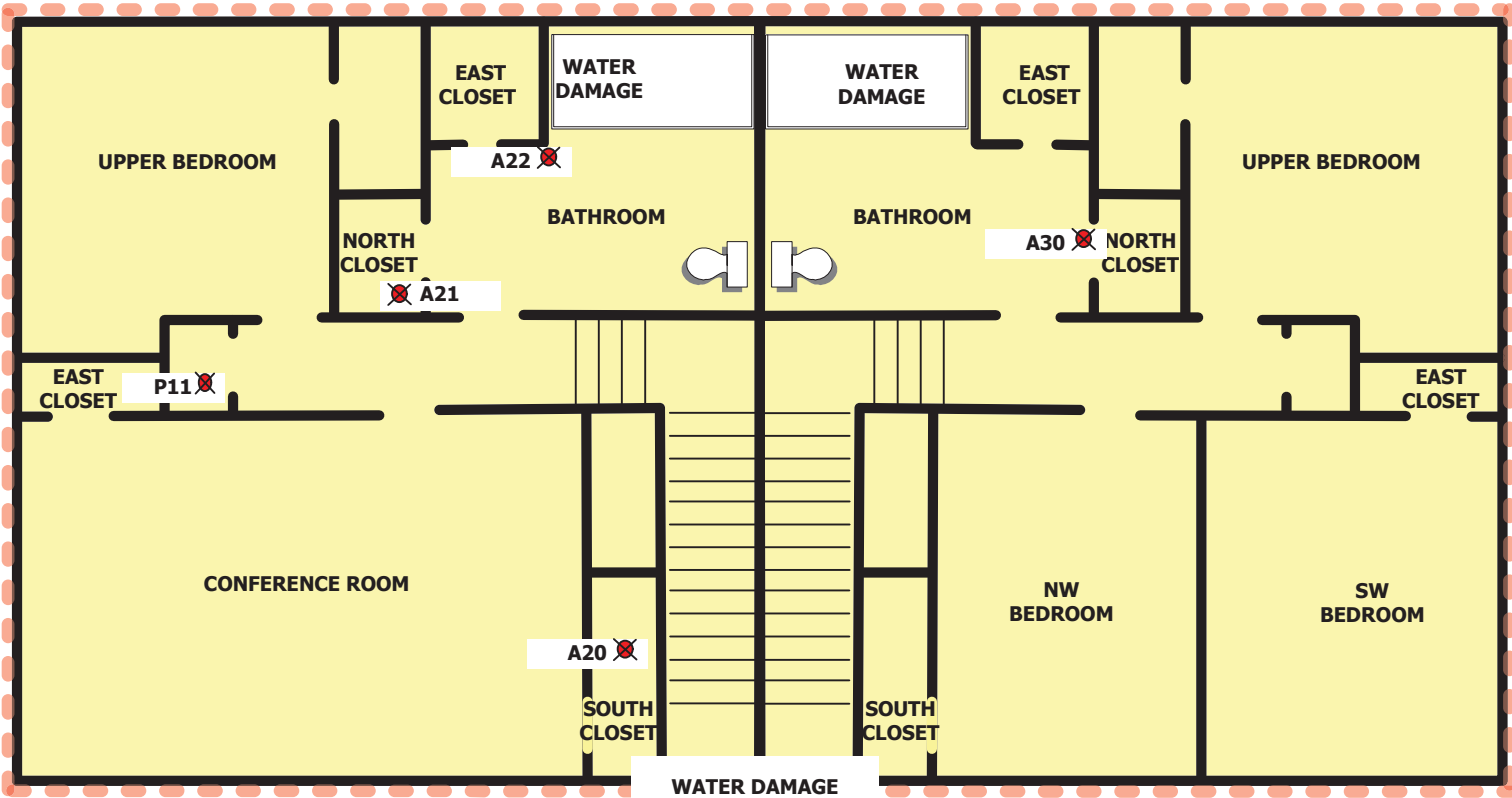
Edited by: ER

Project Location: Fort Vermillion Research Centre

3b-13



- Sample ID
 A = asbestos sample
 P = paint sample
-  Sampling Location
 -  Floor Covering containing Asbestos
 -  Drywall Mud/Stipple/Wall covering containing Asbestos
 -  Wall and/or Attic Insulation containing Asbestos
 -  Pipe/tank insulation containing Asbestos
 -  Ozone Depleting Substance (ODS)
 -  ACM Sink Coating
 -  Radioactive Items
 -  Mercury
 -  Lead paint
 -  Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #60 DUPLEX HOUSE Second Floor



Date: Feb, 2011

Drawn by: KC

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix

Edited: Feb, 2011

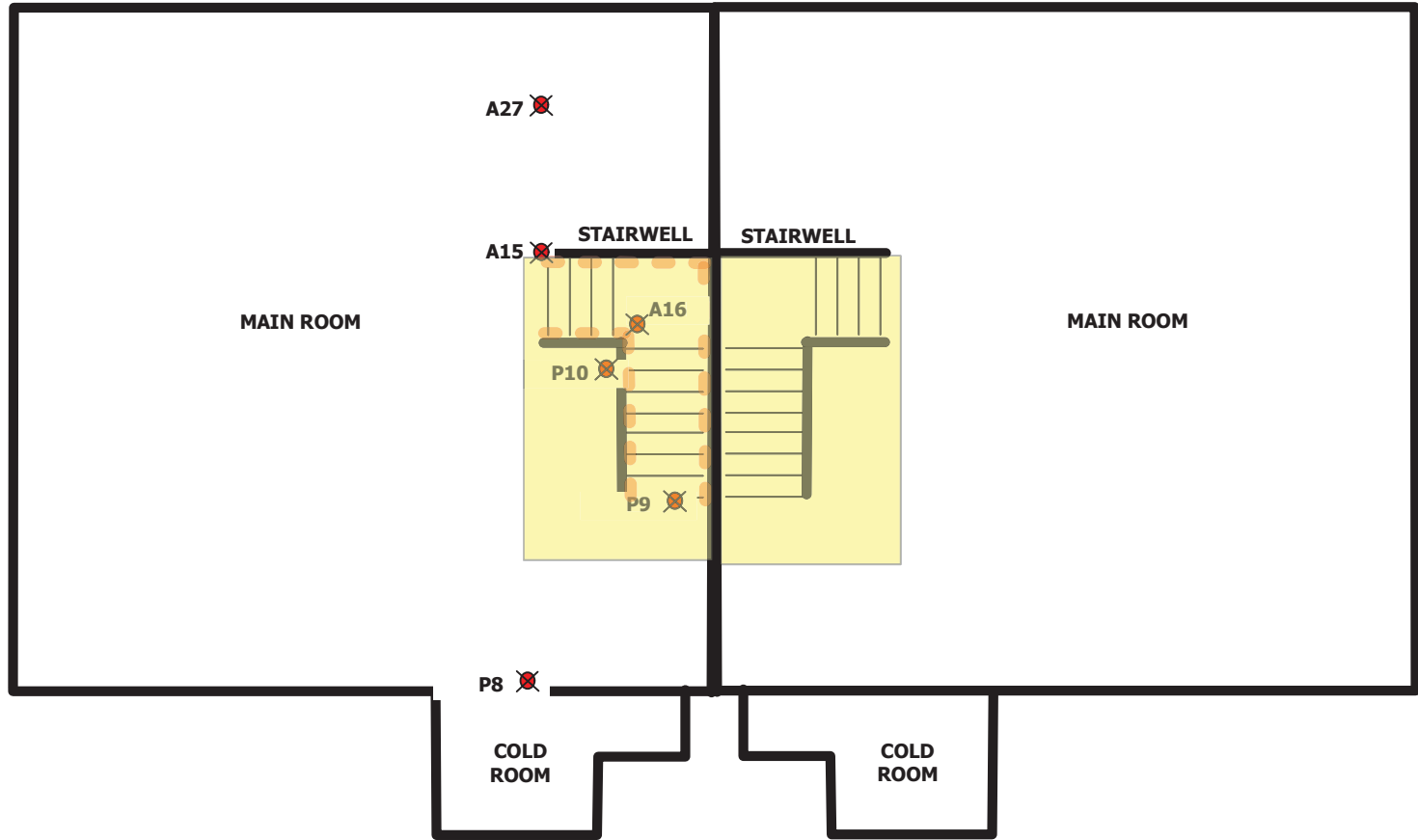
Edited by: ER

Project Location: Fort Vermillion Research Centre

3b-14



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #60 DUPLEX HOUSE
Second Floor



Date: Feb, 2011

Drawn by: KC

Project Name: Hazardous Materials Assessment

Project No.: 11166

Appendix
3b-15

Edited: Feb, 2011

Edited by: ER

Project Location: Fort Vermillion Research Centre



Sample ID
 A = asbestos sample
 P = paint sample

⊗ Sampling Location

■ Floor Covering containing Asbestos

■ Drywall Mud/Stipple/Wall covering containing Asbestos

□ Wall and/or Attic Insulation containing Asbestos

□ Pipe/tank insulation containing Asbestos

■ Ozone Depleting Substance (ODS)

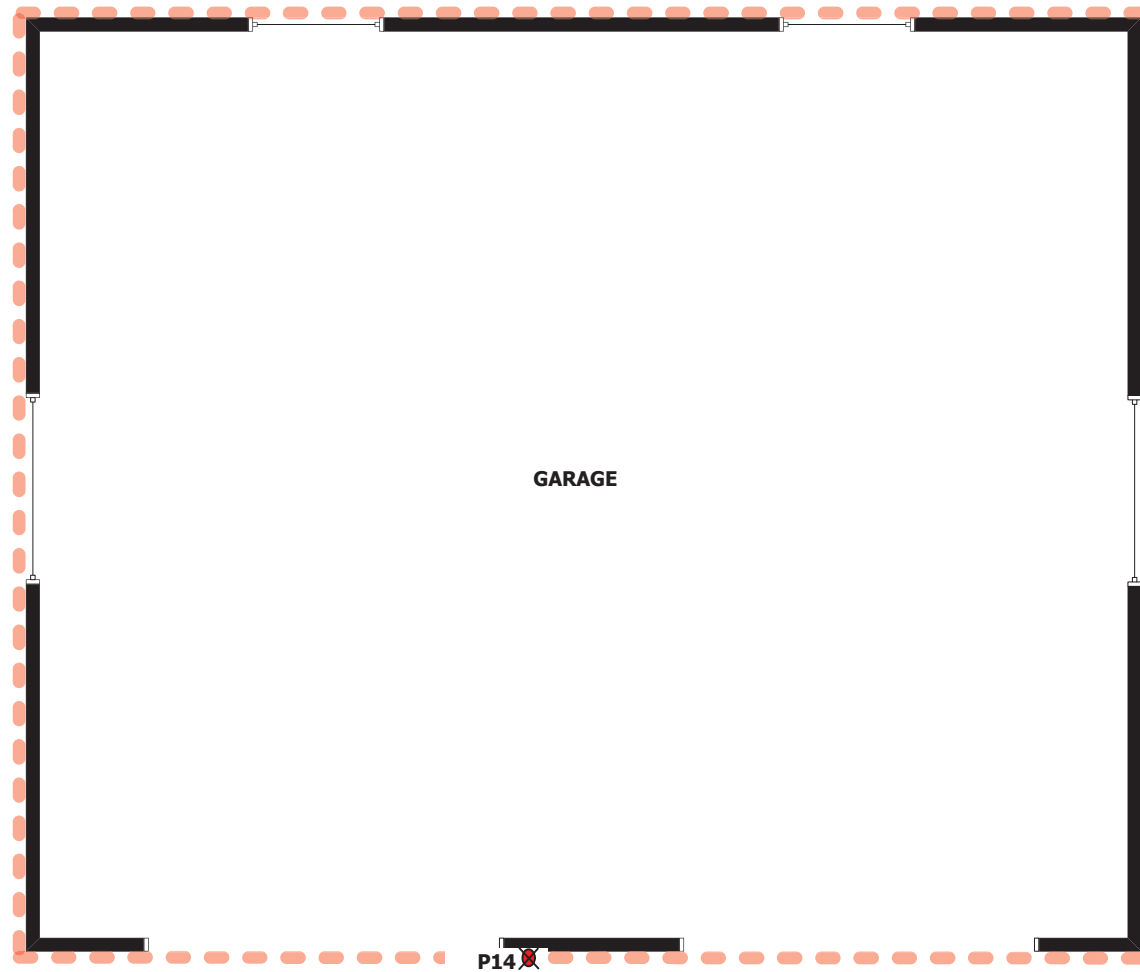
⊗ ACM Sink Coating

☢ Radioactive Items

● Mercury

○ Lead paint

▨ Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #60A DOUBLE GARAGE



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166












**Appendix
3b-16**

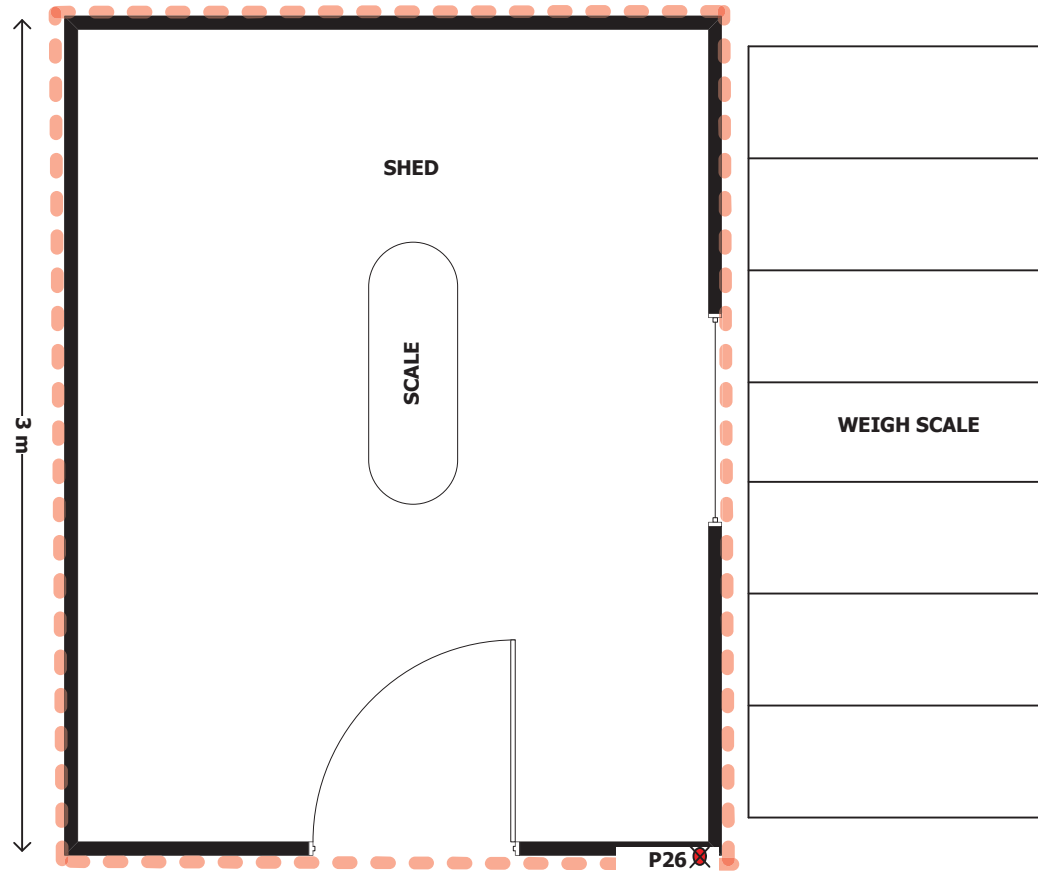
Edited: Feb, 2011

Edited by: ER

Project Location: Fort Vermillion Research Centre



- Sample ID
 A = asbestos sample
 P = paint sample
-  Sampling Location
 -  Floor Covering containing Asbestos
 -  Drywall Mud/Stipple/Wall covering containing Asbestos
 -  Wall and/or Attic Insulation containing Asbestos
 -  Pipe/tank insulation containing Asbestos
 -  Ozone Depleting Substance (ODS)
 -  ACM Sink Coating
 -  Radioactive Items
 -  Mercury
 -  Lead paint
 -  Window caulking containing Asbestos



Scale: NTS

SITE SAMPLING DIAGRAM: #62 WEIGH SCALE



Date: Feb, 2011

Drawn by: CL

Project Name: Hazardous Materials Assessment

Project No.: 11166

**Appendix
3b-17**

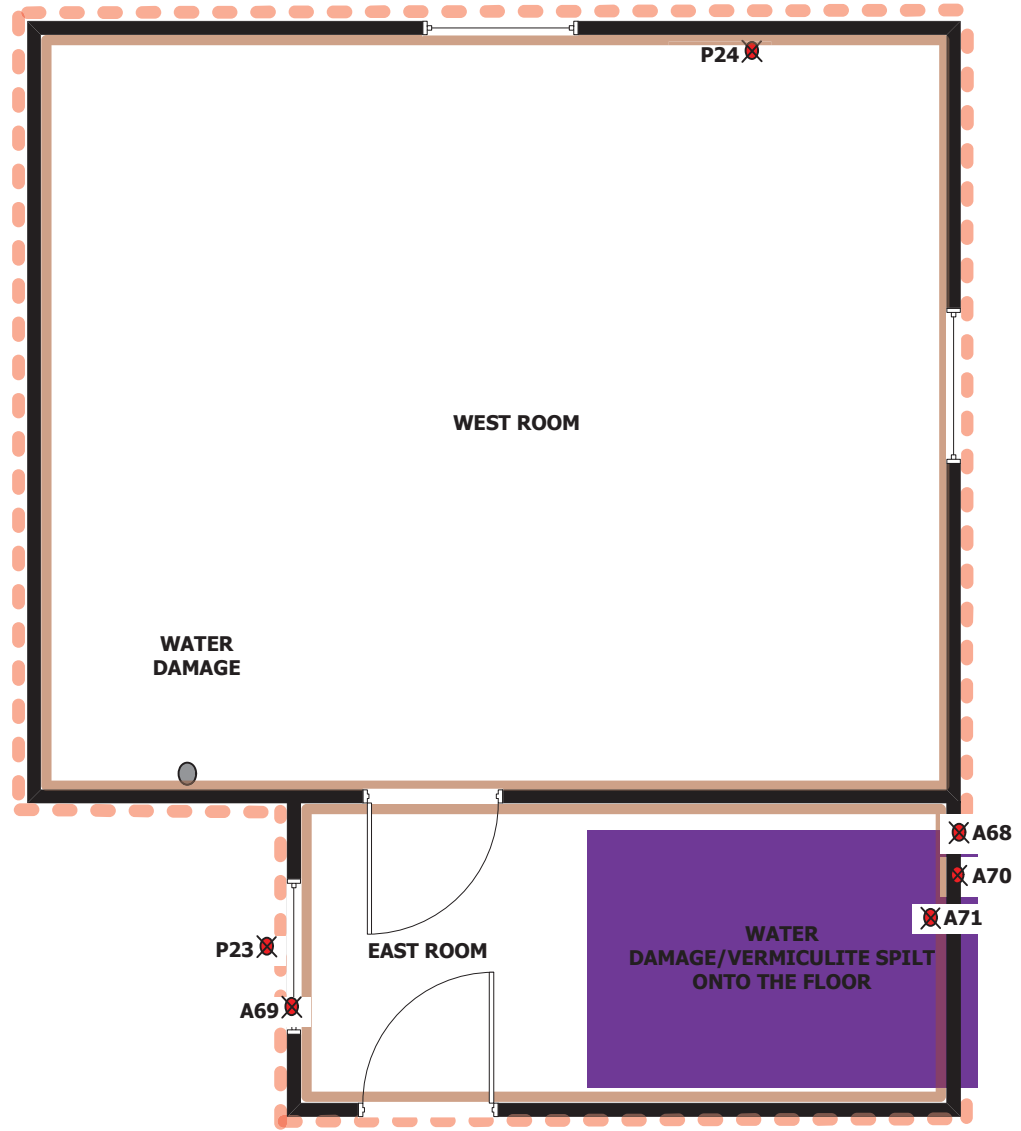
Edited: Feb, 2011

Edited by: ER

Project Location: Fort Vermillion Research Centre



- Sample ID
 A = asbestos sample
 P = paint sample
- Sampling Location
 - Floor Covering containing Asbestos
 - Drywall Mud/Stipple/Wall covering containing Asbestos
 - Wall and/or Attic Insulation containing Asbestos
 - Pipe/tank insulation containing Asbestos
 - Ozone Depleting Substance (ODS)
 - ACM Sink Coating
 - Radioactive Items
 - Mercury
 - Lead paint
 - Window caulking containing Asbestos



Scale: NTS

**SITE SAMPLING DIAGRAM: PUMP HOUSE
Main Floor**



Date: Feb, 2011 Drawn by: CL
 Edited: Feb, 2011 Edited by: ER

Project Name: Hazardous Materials Assessment
 Project Location: Fort Vermillion Research Centre

Project No.: 11166

**Appendix
1b-18**



#33 Processing and Carpenter Shop

Sample A1 : Duct insulation containing asbestos



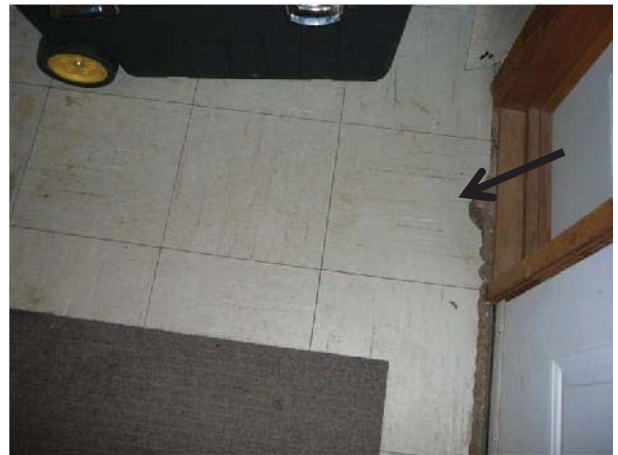
#23 Workshop and Office

Sample A11 : Green board containing asbestos



#60 Duplex House

Sample A15 : Drywall mud containing asbestos



#60 Duplex House

Sample A17 : Floor tile containing asbestos

PHOTOGRAPHIC LOG



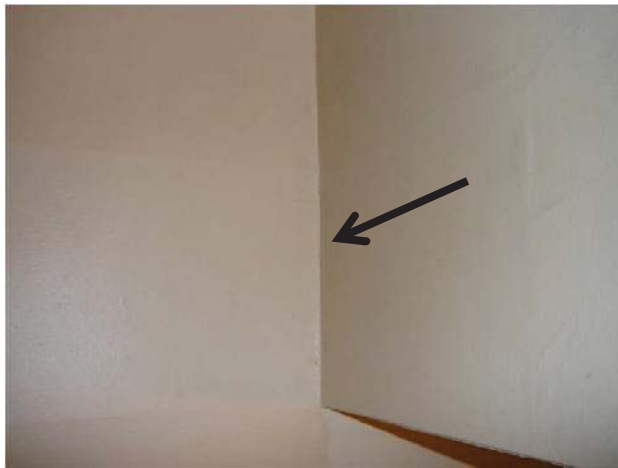
#60 Duplex House

Sample A18: Drywall mud containing asbestos



#60 Duplex House

Sample A20 : Drywall mud containing asbestos



#60 Duplex House

Sample A23 : Drywall mud containing asbestos



#2 Administration Office

Sample A35 : Floor tile containing asbestos

PHOTOGRAPHIC LOG



#2 Administration Office

Sample A36 : Floor tile containing asbestos



#2 Administration Office

Sample A37 : Floor tile containing asbestos



#2 Administration Office

Sample A38, A39 & A40 : Pipe insulation containing asbestos



#2 Administration Office

Sample A41 : Transit board containing asbestos

PHOTOGRAPHIC LOG



#2 Administration Office

Sample A42 & A43 : Pipe insulation containing asbestos



Pump House

Sample A70 & A71: Vermiculite insulation containing asbestos



#37 Drying Shed

Sample A72 : Transite board containing asbestos



#37 Drying Shed

Sample A73 : Insulation board containing asbestos

PHOTOGRAPHIC LOG



#37 Drying Shed

Sample A76: Insulation board containing asbestos

PHOTOGRAPHIC LOG



#60 Duplex House

Sample P10 : Yellow paint containing lead



#60 Duplex House

Sample P13 : White paint containing lead



#60A Garage

Sample P14: White paint containing lead



#57 Sewage Lift Pump House

Sample P15: White paint containing lead

PHOTOGRAPHIC LOG



Taken: CL

Date: February 2011

File No. 11166

Buildings: 60, 60A & 57

Parameter: Lead

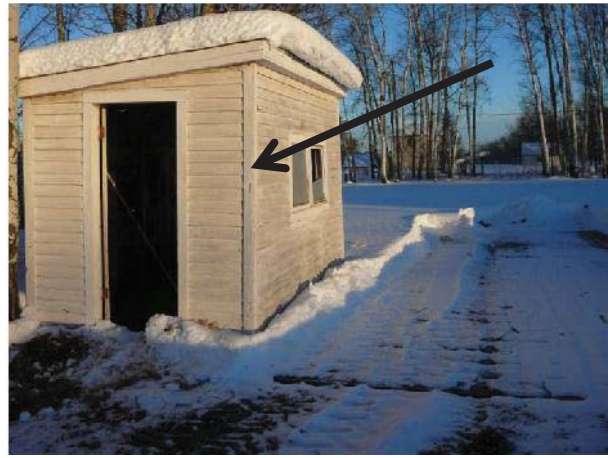
Appendix

3C-6



Pump House

Sample P23: White paint containing lead



#62 Weigh Scale

Sample P26 : White paint containing lead

PHOTOGRAPHIC LOG



#2 Administration Office - Basement
Suspected high water mark from flooding



#2 Administration Office - Basement
Suspected mould growth on asbestos pipe insulation



#2 Administration Office – Main Floor
Water damage and failure of the main floor ceiling



#2 Administration Office – 2nd Floor
Water Damage and debris from failure of the 2nd floor ceiling

PHOTOGRAPHIC LOG



#2 Administration Office – 2nd Floor
Ceiling material on the floor with biological growth



#14 Drying and Threshing Shed
Water damaged ceiling



#33 Processing & Carpenter Shop
Attic with some suspect mould growth



#60 Duplex House – North Unit
Water damage in the conference room closet

PHOTOGRAPHIC LOG



#60 Duplex House – North Unit
Water damage in the washroom



#60 Duplex House – South Unit
Water damage in the northwest bedroom closet

PHOTOGRAPHIC LOG

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
PO Box 87073 RPO Douglas Sq.
Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4213351	Description / Location: Off-White/Silver Insulation (33) Restroom, Duct			
Client No.: A1				
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
65	Chrysotile	25	Cellulose	10

Lab No.: 4213352	Description / Location: White Putty (33) Exterior Windows			
Client No.: A2				
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.: 4213353	Description / Location: Tan Vermiculite Insulation (33) Walls			
Client No.: A3				
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	5	Cellulose	95

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gänge, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Approved By: 

Date: 2/15/2011

Frank E. Ehrenfeld, III
Laboratory Director



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4213354	Description / Location:	Tan Vermiculite Insulation	
Client No.:	A4		(33) Walls	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	5	Cellulose	95

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

Lab No.:	4213355	Description / Location:	Tan Vermiculite Insulation	
Client No.:	A5		(33) Walls	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	5	Cellulose	95

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4213356	Description / Location: Lt. Tan Mortar		
Client No.: A6	(33) Furnace Room Attic, Chimney		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4213357	Description / Location: Brown Wrap		
Client No.: A7	(23) Storage Area, Welding Blanket		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	100	Cellulose
			None Detected

Lab No.: 4213358	Description / Location: Grey Putty		
Client No.: A8	(23) Exterior Window South		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4213359	Description / Location: Black Insulation		
Client No.: A9	(23) Attic Loose Wire		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	80	Cellulose
		17	Fibrous Glass
			3

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4213360	Description / Location: Brown Tar Paper		
Client No.: A10	(23) Shop North Wall		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	99	Cellulose 1

Lab No.: 4213361	Description / Location: Grey Transite		
Client No.: A11	(23) Shop		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>% Non-Fibrous Material</u>
25	Chrysotile	None Detected	None Detected 75

Lab No.: 4213362	Description / Location: Tan Mortar		
Client No.: A12	(23) Chimney		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected 100

Lab No.: 4213363	Description / Location: Black Insulation		
Client No.: A13	(14) Wire Attic		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	90	Cellulose 10

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4213364	Description / Location: Tan Caulk		
Client No.: A14	(14) East Window		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 0.25	Chrysotile	None Detected	None Detected
			PC 99.75

Lab No.: 4213365	Description / Location: Off-White Fibrous		
Client No.: A15	(60) Bsmt Under Stairs		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 2.3	Chrysotile	None Detected	None Detected
			PC 97.7

Lab No.: 4213366	Description / Location: Lt.Tan/Brown Vinyl Shet Flooring		
Client No.: A16	(60) Bsmt Stair Landing		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	35	Cellulose
			65

Lab No.: 4213367	Description / Location: Lt.Tan Floor Tile		
Client No.: A17	(60) Entryway		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 1.7	Chrysotile	None Detected	None Detected
			PC 98.3

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4213368	Description / Location: Lt. Tan Fibrous		
Client No.: A18	(60) Entryway		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 3.1	Chrysotile	None Detected	None Detected
			PC 96.9

Lab No.: 4213369	Description / Location: Tan Vinyl Sheet Flooring		
Client No.: A19	(60) Stair Runner		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	30	Cellulose
			70

Lab No.: 4213370	Description / Location: Off-White Joint Compound		
Client No.: A20	(60) Conference Room South Closet		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 2.0	Chrysotile	None Detected	None Detected
			98

Lab No.: 4213371	Description / Location: Tan/Brown Vinyl Sheet Flooring		
Client No.: A21	(60) Bathroom Closet		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	65	Cellulose
			35

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4213372	Description / Location: White Joint Compound		
Client No.: A22	(60) Bathroom		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4213373	Description / Location: Off-White Joint Compound		
Client No.: A23	(60) Stairwell		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 1.5	Chrysotile	None Detected	None Detected
			PC 98.5

Lab No.: 4213374	Description / Location: Tan Plaster		
Client No.: A24	(60) Exterior Northwest		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4213375	Description / Location: Tan Plaster		
Client No.: A25	(60) Exterior Southeast		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4213376	Description / Location:	Tan Plaster	
Client No.:	A26		(60) Exterior East	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4213377	Description / Location:	Off-White Wrap	
Client No.:	A27		(60) Bsmt	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	100	Cellulose	None Detected

Lab No.:	4213378	Description / Location:	Black/Red Shingle	
Client No.:	A28		(60) Under Deck Dog House	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	30	Cellulose	70

Lab No.:	4213379	Description / Location:	Brown Tar Paper	
Client No.:	A29		(60) Exterior	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	99	Cellulose	1

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4213380	Description / Location: White Floor Tile		
Client No.: A30	(60) South Bathroom		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			100

Lab No.: 4213380	Description / Location: Black Mastic		Layer No.: 2
Client No.: A30	(60) South Bathroom		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			100

Lab No.: 4213381	Description / Location: Black/White Tar Paper		
Client No.: A31	(57) Exterior Wall		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	80	Cellulose
			<u>% Non-Fibrous Material</u>
			20

Lab No.: 4213382	Description / Location: White Caulk		
Client No.: A32	(57) Door		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4213383	Description / Location:	Tan/Brown Vinyl Sheet Flooring	
Client No.:	A33		(2) Bsmt Vault	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	35	Cellulose	65

Lab No.:	4213384	Description / Location:	Tan/Brown Vinyl Sheet Flooring	
Client No.:	A34		(2) Bsmt Vault	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	35	Cellulose	65

Lab No.:	4213385	Description / Location:	Tan Floor Tile	
Client No.:	A35		(2) Bsmt Under Stairs	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
PC 4.7	Chrysotile	None Detected	None Detected	PC 95.3

Lab No.:	4213385	Description / Location:	Tan Mastic	Layer No.: 2
Client No.:	A35		(2) Bsmt Under Stairs	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4213386	Description / Location: Tan Floor Tile		
Client No.: A36	(2) Bsmt SE Storage Room		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 5.3	Chrysotile	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			PC 94.7

Lab No.: 4213386	Description / Location: Brown Mastic		Layer No.: 2
Client No.: A36	(2) Bsmt SE Storage Room		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	1	Cellulose
			<u>% Non-Fibrous Material</u>
			99

Lab No.: 4213387	Description / Location: Tan Floor Tile		
Client No.: A37	(2) Bsmt SE Storage Room		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 5.1	Chrysotile	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			PC 94.9

Lab No.: 4213388	Description / Location: Grey Insulation		
Client No.: A38	(2) Bsmt NE Office		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
60	Chrysotile	None Detected	None Detected
			<u>% Non-Fibrous Material</u>
			40

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4213389	Description / Location:	Lt. Tan Insulation	
Client No.:	A39		(2) Bsmt NE Office	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
65	Chrysotile	20	Cellulose	15

Lab No.:	4213390	Description / Location:	Grey Insulation	
Client No.:	A40		(2) Bsmt NE Office	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
65	Chrysotile	None Detected	None Detected	35

Lab No.:	4213391	Description / Location:	Grey Transite	
Client No.:	A41		(2) Bsmt Utility Room	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
30	Chrysotile	None Detected	None Detected	70

Lab No.:	4213392	Description / Location:	Grey Insulation	
Client No.:	A42		(2) Bsmt Utility Room	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
55	Chrysotile	None Detected	None Detected	45

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4213393	Description / Location: Off-White Insulation		
Client No.: A43	(2) Bsmt Utility Room		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
80	Chrysotile	15	Cellulose
			5

Lab No.: 4213394	Description / Location: Green Vinyl Sheet Flooring		
Client No.: A44	(2) North Stairwell		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	5	Cellulose
			95

Lab No.: 4213395	Description / Location: Green Vinyl Sheet Flooring		
Client No.: A45	(2) Main Entrance		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	3	Cellulose
			97

Lab No.: 4213396	Description / Location: Green Vinyl Sheet Flooring		
Client No.: A46	(2) Main Men's Bathroom		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	3	Cellulose
			97

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4213397	Description / Location: Tan Paper			
Client No.: A47	(2) Main NW Office			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	100	Cellulose	None Detected

Lab No.: 4213398	Description / Location: Tan Paper			
Client No.: A48	(2) Main East Office			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	100	Cellulose	None Detected

Lab No.: 4213399	Description / Location: Lt. Tan Plaster			
Client No.: A49	(2) Main Reception			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.: 4213399	Description / Location: White Plaster			Layer No.: 2
Client No.: A49	(2) Main Reception			
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4213400	Description / Location: Lt. Tan Plaster		
Client No.: A50	(2) Main Girls Washroom		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	100

Lab No.: 4213400	Description / Location: White Plaster		Layer No.: 2
Client No.: A50	(2) Main Girls Washroom		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	100

Lab No.: 4213401	Description / Location: White Plaster		
Client No.: A51	(2) Main SE Office		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4213402	Description / Location: White Plaster		
Client No.: A52	(2) Main NW Office		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4213402	Description / Location: Tan Plaster		Layer No.: 2
Client No.: A52	(2) Main NW Office		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4213403	Description / Location: Tan Plaster		
Client No.: A53	(2) 2nd NW Office Ceiling		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4213403	Description / Location: White Plaster		Layer No.: 2
Client No.: A53	(2) 2nd NW Office Ceiling		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4213404	Description / Location: Tan Plaster		
Client No.: A54	(2) 2nd South Room Ceiling		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4213404	Description / Location: White Plaster		Layer No.: 2
Client No.: A54	(2) 2nd South Room Ceiling		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4213405	Description / Location: Tan Plaster		
Client No.: A55	(2) 2nd File Room		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4213405	Description / Location: White Plaster		Layer No.: 2
Client No.: A55	(2) 2nd File Room		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4213406	Description / Location:	White Non Fibrous	
Client No.:	A56		(2) 2nd File File Room	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	None Detected	None Detected	100

Lab No.:	4213407	Description / Location:	Grey Vinyl Sheet Flooring	
Client No.:	A57		(2) 2nd Fl. Hall	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	3	Cellulose	97

Lab No.:	4213408	Description / Location:	Green Vinyl Sheet Flooring	
Client No.:	A58		(2) 2nd Fl. S. Room	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	2	Cellulose	98

Lab No.:	4213409	Description / Location:	Grey Vinyl Sheet Flooring	
Client No.:	A59		(2) 2nd Fl. NE Office	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	3	Cellulose	97

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4213410	Description / Location: White Plaster		
Client No.: A60	(2) Main Entrance Exterior		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4213411	Description / Location: Off-White Caulk		
Client No.: A61	(2) Main Floor East Window		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4213412	Description / Location: Off-White Caulk		
Client No.: A62	(2) Window Inside Foyer		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4213413	Description / Location: Tan Plaster		
Client No.: A63	(2) Exterior North Wall		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4213413	Description / Location: White Plaster		Layer No.: 2
Client No.: A63	(2) Exterior North Wall		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4213414	Description / Location: Tan Mortar		
Client No.: A64	(2) Exterior Chimney		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4213415	Description / Location: White Plaster		
Client No.: A65	(2) Exterior Chimney		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4213415	Description / Location: Tan Plaster		Layer No.: 2
Client No.: A65	(2) Exterior Chimney		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4213416	Description / Location: Grey Non Fibrous		
Client No.: A66	(2) Exterior West Bottom		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4213416	Description / Location: White Non Fibrous		Layer No.: 2
Client No.: A66	(2) Exterior West Bottom		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4213417	Description / Location: Grey Non Fibrous		
Client No.: A67	(2) Exterior North Bottom		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	None Detected	None Detected
			100

Lab No.: 4213418	Description / Location: Black/Red Shingle		
Client No.: A68	Pump House Lean 2 Roof		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	35	Cellulose
			65

Lab No.: 4213419	Description / Location: Lt.Green Caulk		
Client No.: A69	Pump House South Window		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 0.25	Chrysotile	None Detected	None Detected
			PC 99.75

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4213420	Description / Location:	Tan Vermiculite Insulation	
Client No.:	A70		Pump House Lean 2 Roof	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	3	Cellulose	97

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

Lab No.:	4213421	Description / Location:	Tan Vermiculite Insulation	
Client No.:	A71		Pump House Roof	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	3	Cellulose	97

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of the vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004). Please call for more information and pricing.

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box 87073 RPO Douglas Sq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	4213422	Description / Location:	Grey Transite	
Client No.:	A72		(37) Walls	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
25	Chrysotile	None Detected	None Detected	75

Lab No.:	4213423	Description / Location:	Off-White Insulation	
Client No.:	A73		(37) North On Dryer Doors	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
70	Chrysotile	None Detected	None Detected	30

Lab No.:	4213424	Description / Location:	Black Gasket	
Client No.:	A74		(37) On Doors (North)	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	100	Cellulose	None Detected

Lab No.:	4213425	Description / Location:	Black Gasket	
Client No.:	A75		(37) On South Dryer Doors	
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>	<u>% Non-Fibrous Material</u>
None Detected	None Detected	100	Cellulose	None Detected

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011



9000 Commerce Parkway, Ste B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Project: Fort Vermillion Research Centre
Project No.: 11166F

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 4213426	Description / Location: White Insulation		
Client No.: A76	(37) Dryer (South) Doors		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
10	Amosite	None Detected	None Detected
10	Chrysotile		80

Lab No.: 4213427	Description / Location: Off-White Joint Compound		
Client No.: Dup1	Duplicate Sample		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
PC 1.2	Chrysotile	None Detected	None Detected
			PC 98.8

Lab No.: 4213428	Description / Location: Grey Insulation		
Client No.: Dup2	Duplicate Sample		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
70	Chrysotile	None Detected	None Detected
			30

Lab No.: 4213429	Description / Location: Grey Vinyl Sheet Flooring		
Client No.: Dup3	Duplicate Sample		
<u>% Asbestos</u>	<u>Type</u>	<u>% Non-Asbestos Fibrous Material</u>	<u>Type</u>
None Detected	None Detected	5	Cellulose
			95

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government
 This report shall not be reproduced except in full, without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

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

Analysis Performed By: E. Smith

Date: 2/15/2011

NOTICE OF ANALYTICAL CAPABILITIES

Client:

Notice Date: 2/21/2011

Project:

Project No.:

This notice is not intended to replace the Certificate of Analysis or other data associated with the analysis of bulk materials. Instead, IATL has observed that the samples may not fit standard methods usually prescribed for the analysis of asbestos. We hope to communicate these observations so that more appropriate means of analysis may be considered. Please call the Laboratory Director for specific alternatives or further explanation of this notice.

Discussion:

The above referenced sample(s) were submitted for asbestos analysis via the EPA Method 600/R-93.116 "Method for the Determination of Asbestos in Bulk Building Materials". This method specifies the use of Polarized Light Microscopy (PLM) as the instrumental technique of choice to differentiate the fibrous components of a bulk sample and to quantify these components into percent by volume categories. This analytical method has appendent procedures that encompass other related asbestos techniques. These include procedures for the quantitative regimen of point counting and the gravimetric reduction of certain materials for analysis by PLM and Transmission Electron Microscopy (TEM) for results in weight percentages. Though an excellent method for building materials, it may not be adequate or the results may be limited by the following factors:

- Sample submitted on matrix material (soil, dust, debris, etc.) that may interfere with the detection of suspect asbestos fibers.
- Optical techniques (PLM) have limited resolution and may miss fine or small fibers inherent in many building products or that may have been released from building products into the atmosphere and on to surfaces.
- The method is limited to bulk building materials.
- The method requires minimum sampling 15 cc of material for verifiable quantitative results.
- The method may not produce detection levels now required for certain health and safety recommendations.
- Other established matrix specific methods may be more applicable.

Recommendations:

IATL recommends the following alternative to either the sampling protocol and/or analytical methodology to improve both qualitative and quantitative results:

- ASTM D5755-02 "Standard Method for Microvacuum Sampling and Indirect Analysis of Surface Dust by TEM for Asbestos Structure Concentrations on Surfaces".
- ASTM D5756-02 "Standard Method for Microvacuum Sampling and Indirect Analysis of Surface Dust by TEM for Asbestos Mass Concentrations".
- ASTM D6480-99 "Standard Method for Wipe Sampling of Surfaces, Indirect Preparation, and Analysis for Asbestos Structure Concentrations".
- EPA Region I Proprietary Method for the Determination of Asbestos in Soils, Sludges, and Sediments by PLM.
- Modified EPA Region I Proprietary Method for the Determination of Asbestos in Soils, Sludges, and Sediments by TEM.
- CARB 435 Method Determination of Asbestos Content in Serpentine Aggregate.
- EPA 600/R-04/004 Research Method for Sampling and Analysis of Fibrous Amphibole in Vermiculite Attic Insulation. [SEE PAGE 2 OF THIS DOCUMENT FOR FURTHER INFORMATION]

Recommendations for Vermiculite Analysis:

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gänge, homogeneous exfoliated books of mica, or mixed mineral composites).

IATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004).

Further information on this method and other vermiculite and asbestos issues can be found at the following: Agency for Toxic Substances and Disease Registry (ATSDR) www.atsdr.cdc.gov, United States Geological Survey (USGS) www.minerals.usgs.gov/minerals/, US EPA www.epa.gov/asbestos. The USEPA also has an informative brochure "Current Best Practices for Vermiculite Attic Insulation" EPA 747F03001 May 2003, that may assist the health and remediation professional.

The following is a summary of the analytical process outlined in the EPA 600/R-04/004 Method:

<u>Analytical Step/Method</u>	<u>Requirements/Comments</u>	<u>Pricing/TurnAroundTimes</u>
1. Initial Screening by PLM EPA 600R-93/116	Minimum 0.1g of sample ~0.25% LOQ for most samples	\$35.00 - \$50.00 3-5 Day to Same Day*
2. Wet Separation by PLM Gravimetric Technique EPA R-04/004	Minimum 50g** of dry sample Analysis of 'Sinks' only	\$ 60.00 3-5 Day 0.25% LOQ \$120.00 3-5 Day 0.1% LOQ \$360.00 3-5 Day 0.01% LOQ
3. Wet Separation by PLM Gravimetric Technique EPA R-04/004	Minimum 50g** of dry sample Analysis of 'Floats' only	\$ 60.00 3-5 Day 0.25% LOQ \$120.00 3-5 Day 0.1% LOQ \$360.00 3-5 Day 0.01% LOQ
4. Wet Separation by TEM Gravimetric Technique EPA R-04/004	Minimum 50g** of dry sample Analysis of 'Sinks' only	\$150.00 3-5 Day ~0.25% LOQ \$200.00 3-5 Day ~0.1% LOQ \$360.00 3-5 Day ~0.01% LOQ
5. Wet Separation by TEM Gravimetric Technique EPA R-04/004	Minimum 50g** of dry sample Analysis of 'Suspension' only	\$150.00 3-5 Day 0.25% LOQ \$200.00 3-5 Day 0.1% LOQ \$360.00 3-5 Day 0.01% LOQ

1 thru 5 above represents worst case scenario for negative confirmation at <0.01% = \$1475.00

LOQ, Limit of Quantitation estimates for mass and volume analyses.

* With advance notice and confirmation by the laboratory.

** Approximately 1 Liter of sample in double-bagged container (~9x6 inch bag of sample)

International Asbestos Testing Laboratories
 9000 Commerce Parkway, Suite B
 Mt. Laurel, New Jersey 08054
 Attn: Ray Sankey

Tel. 856 231-9449
 Fax 856 231-9818

- Chain of Custody -

Client: Ballast Environmental Consulting Ltd.
PO Box 87073 RPO Douglas SQ
Calgary, AB Canada T2Z 3V7

Project Name: _____
Project No.: 11166 F

Phone: 403-452-3110
FAX: 403-452-3133

Contact: Elvie Reinson
Pager: Cell: 403-860-8524

Special Instructions: _____

Type:

Asbestos		Lead		Other	
<input type="checkbox"/>	Air	<input type="checkbox"/>	Soil	<input type="checkbox"/>	Air
<input checked="" type="checkbox"/>	Bulk	<input type="checkbox"/>	Dust	<input type="checkbox"/>	Soil
<input type="checkbox"/>	Water	<input type="checkbox"/>	Other	<input type="checkbox"/>	Paint
		<input type="checkbox"/>	Water	<input type="checkbox"/>	Other

Analysis Method:

<input type="checkbox"/>	PCM : NIOSH 7400	<input checked="" type="checkbox"/>	PLM : Bulk Asbestos EPA 600	<input type="checkbox"/>	TEM : AHERA
<input type="checkbox"/>	PCM : OSHA	<input type="checkbox"/>	PLM : Point Counting 198.1	<input type="checkbox"/>	TEM : NIOSH 7402
<input type="checkbox"/>	PCM : Other _____	<input type="checkbox"/>	PLM : NOB via 198.1 (PLM only)	<input type="checkbox"/>	TEM : EPA Level II
<input type="checkbox"/>	AAS : NIOSH 7082 (Air)	<input type="checkbox"/>	If <1% by PLM, to TEM via 198.4	<input type="checkbox"/>	TEM : Microvac / Wipe
<input type="checkbox"/>	AAS : Lead in Drinking Water		to meet NYSDOH requirements **	<input type="checkbox"/>	TEM : Asbestos in Water
<input type="checkbox"/>	AAS : Lead in Paint ASTM D3335-85a		(**call to confirm TAT!)	<input type="checkbox"/>	TEM : Bulk Analysis
<input type="checkbox"/>	AAS : Lead Dust/Wipe "			<input type="checkbox"/>	TEM : NOB 198.4
<input type="checkbox"/>	AAS : Other Metals / Soil _____			<input type="checkbox"/>	TEM : Other _____
				<input type="checkbox"/>	Total Dust : NIOSH 0500

Turnaround Time: email: elvie@ballastenvironmental.com **FAX:** _____ **Verbals:** _____

10 Day 5 Day 3 Day 2 Day 1 Day 6 hour RUSH

Preliminary FAX/Verbal Results Requested by: _____

Sample Numbers: Client #(s): A1 → A76 IATL#(s): _____ - _____ Total: _____
 (start) (end) (start) (end)

Chain of Custody: Dupl and Dupl → Dup 3
(see attached)

Relinquished:	<u>Elvie Reinson</u>	Date:	<u>Feb 3/11</u>	Time:	_____
Received:	_____	Date:	_____	Time:	_____
Sample Log-in:	<u>BR 2/14/11</u>	Date:	<u>FEB - 6 2011</u>	Time:	_____
Sample Prep:	_____	Date:	<u>2/15/2011</u>	Time:	_____
Analyzed:	_____	Date:	<u>2/18/11</u>	Time:	_____
QA/QC Review:	_____	Date:	_____	Time:	_____

Archived/Released: _____ QA/QC InterLAB Use: _____ Date: _____ Time: _____

BULK MATERIAL SAMPLING LOG

Worksite: Fort Vermillion Research Centre Date: Feb 1, 2011
 Client: POXSC Job No.: 11166F
 Date Results Required: _____ No. Samples: _____ Page 1 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A1	silver	duct insulation	(33) east room	poor	4" x 10" x 8'	109-0316
A2	white	puddy	(33) exterior windows	poor	9 windows	109-317
A3	brown	vermiculite	(33) attic walls floor	good	walls	109-0313
A4	"	"	"	"	"	"
A5	"	"	"	"	"	"
A6	grey	chimney mortar	(33) furnace room attic	good	1 chimney	109-0318
A7	green	welding blanket	(23) storage area	fair	6' x 20'	109-0341
A8	white	puddy	(23) exterior window south	poor	10 windows	109-0340
A9	black	insulation	(23) attic base wire	poor	building	109-0342
A10	black	tar paper	(23) shop north wall	good	"	109-0343
A11	green	board	(23) shop	poor	3' x 2'	109-0344
A12	silver	mortar	(23) chimney	fair	chimney	109-0347
A13	black	wire insulation	(14) wire attic	fair	entire building	109-0372
A14	white	caulking	(4) east window	poor	all windows	109-0374



BULK MATERIAL SAMPLING LOG

Worksite: Fort Vermillion Date: Feb 1/11
 Client: PWGSC Job No.: 11166F
 Date Results Required: _____ No. Samples: _____ Page 2 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A15	white 4213365	drywall mud	(60) bsmt under stairs	good	house	109-0415
A16	yellow w/ blue & brown 4213366	floor tile	(60) bsmt stair landing	poor	3' x 3'	109-0418
A17	off white w/ brown 4213367	"	(60) entryway	poor	4' x 7'	109-420
A18	drywalluddy 4213368	drywall w/ mud	(60) entryway	fair	house	109-421
A19	brown 4213369	lin	(60) stair runner	poor	2' x 20'	109-422
A20	green 4213370	drywalluddy mud	(60) conference room south closet	poor	house	109-423
A21	orange w/ blue & purple 4213371	floor tile	(60) bathroom closet	good	3' x 2'	109-0428
A22	white 4213372	drywall muddy	(60) bathroom	fair	house	109-0430
A23	white 4213373	"	(60) stairwell	fair	house	109-0431
A24	white 4213374	stucco	(60) exterior north west	good	exterior house	109-0432
A25	white 4213375	stucco	(60) exterior south west	"	exterior house	109-0433
A26	" 4213376	"	(60) exterior east	"	"	109-0434
A27	white 4213377	pipe wrap	(60) bsmt	"	~80'	109-0438
A28	black 4213378	shingle	(60) under deck dog house	"	~4' x 4'	109-0440

BULK MATERIAL SAMPLING LOG

Worksite: Fort Vermillion Date: Feb 2/11
 Client: PLGSC Job No.: 11166
 Date Results Required: _____ No. Samples: _____ Page 3 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A29	black	tar paper	(60) exterior 4213379	good	exterior	109-0444
A30	white w/ blue	floor tile	(60) south bathroom 4213380	fair	8' x 6'	109-0480
A31	black	tar paper	(57) exterior wall 4213381	good	exterior	109-0483
A32	white	caulking	(57) door 4213382	poor	1 door window	109-0483
A33	brown	floor tile	(2) bsmt vault 4213383	poor	1/4 vault	109-0518
A34	brown/y flecks	floor tile	(2) bsmt vault 4213384	poor	3/4 vault	109-0518
A35	brown w/ dark brown	floor tile	(2) bsmt under stair 4213385	poor	room	109-0517
A36	"	"	(2) bsmt SE Storage room 4213386	poor	room	109-0521
A37	"	"	" 4213387 "	"	room	109-0522
A38	white	pipe insulation	(2) bsmt NE office 4213388	fair	.	109-0520
A39	"	" airocell	" 4213389 "	"		"
A40	"	"	" 4213390 "	"		"
A41	green	transite board	(2) bsmt utility room 4213391	"	entire room	109-0523
A42	white	pipe insulation	(2) bsmt utility room 4213392	"		109-0524

Ash

BULK MATERIAL SAMPLING LOG

 Worksite: Fort Vermillion Date: Feb 2/11
 Client: PLGSC Job No.: 11166F
 Date Results Required: _____ No. Samples: _____ Page 4 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A43	white	pipe insulation arcell	② bsmt utility room	fair 4213393		109-0524
A44	green	flooring	② North stairwell	poor 4213394	mont 2nd fl	109-0536
A45	"	"	② Main entrance	" 4213395	"	109-0537
A46	"	"	② main-mens bathroom	4213396	"	109-0538
A47	brown	insulation paper	② Main-NW office	good 4213397	entire building	109-0539
A48	"	"	② main-east office	good 4213398	"	109-0540
A49	white	drywall plaster	② main-reception	poor 4213399	"	109-0541
A50	"	"	② main-girls washroom	" 4213400	"	109-0542
A51	"	"	② main-SE office	" 4213401	"	100-0003
A52	"	"	② main-NW office	" 4213402	"	100-0004
A53	"	"	② 2nd-NW office ceiling	" 4213403	"	100 100-0005
A54	"	w/ shipple	② 2nd-South room ceiling	" 4213404	"	109-0544
A55	"	w/ shipple	② 2nd-file room	" 4213405	"	109-546
A56	white	shipple	② 2nd floor-file room	" 4213406	1/2 2nd floor	"

BULK MATERIAL SAMPLING LOG

Worksite: Fort Vermillion Date: Feb 2/11
 Client: PWASC Job No.: 11166F
 Date Results Required: _____ No. Samples: _____ Page 5 of 5

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
A57	gray	floor	2nd 2nd Fl - ② Hall	poor 4213407	entire 2nd FL	100-0007
A58	gray	floor	② 2nd Fl S. Room	poor 4213408	"	100-0008
A59	"	floor	② 2nd FL NE office	poor 4213409	"	100-0009
A60	yellow	Stucco	② Main ^{exterior} entrance	good 4213410	3/4 building	100-0016
A61	white/ brown	caulk	② main floor east windows	poor 4213411	windows	100-0016
A62	"	"	② windows inside foyer	" 4213412	"	100-0015
A63	yellow	stucco	② exterior stucco ^{North} wall	good 4213413	3/4 building	100-0018
A64	gray	mortar	② exterior chimney	Poor 4213414	chimney	100-0021
A65	off white	Stucco	③ "	"	3/4 building	100-0022
A66	gray	parchment	② exterior - west bottom	" 4213415	2' bottom of building	100-0023
A67	"	"	② exterior North bottom	" 4213417	"	100-0022
A68	black	Shingle	Pump House - Lean 2 roof	poor 4213418	1/3 roof	100-0028
A69	gray	caulking	Pump House - South window	" 4213419	windows	100-0023
A70	brown	vermiculite	Pump House - lean 2 roof	" 4213420	ceiling	100-0028

Login

From: "Ray Sankey" <raysankey@iatl.com>
To: "Login" <login@iatl.com>
Sent: Wednesday, February 16, 2011 1:43 PM
Subject: FW: Additional sampling for 11166F - Fort Vermillion Research Centre

From: Elvie Reinson [mailto:elvie@ballastenvironmental.com]
Sent: Wednesday, February 16, 2011 1:38 PM
To: raysankey@iatl.com
Subject: Additional sampling for 11166F - Fort Vermillion Research Centre

Hi Ray,

Could you please perform the sink/float test for the following samples:

Lab No.'s: 4213353, 4213354, 4213355 – could you mix all the samples together for one test

AND

Lab No.'s: 4213420, 4213421 – could you mix all the samples together for one test

Thanks,

Elvie



Elvie Reinson, PBIOL, PRBio, EP
Ballast Environmental Consulting Ltd.
Tel 403.452.3110
Fax 403.452.3133
elvie@ballastenvironmental.com
www.ballastenvironmental.com

This email contains confidential information and is for the sole use of the recipient. If you have received this email in error, please notify the sender and destroy all copies of this email and any attachments. Unauthorized disclosure or distribution is prohibited.

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
PO Box 87073 RPO Douglas Sq.
Calgary AB T2Z 3V7

Report Date: 2/15/2011
Report Number: 0211003913
Project: Ft. Vermillion Research Center
Project No.: 11166F

LEAD PAINT SAMPLE ANALYSIS SUMMARY

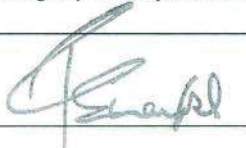
Lab No.	Client No.	Location / Description	Concentration Lead By Weight (%)
4208533	P1	White/Red Paint 33; Exterior	0.28
4208534	P2	Silver Paint 33; Interior	0.0088***
4208535	P3	White Paint 33; Interior West	0.027***
4208536	P4	White/Red Paint 23; Exterior	0.10
4208537	P5	Silver/White Paint 23; Interior	0.0085***
4208538	P6	White Paint 14; Interior East	0.011
4208539	P7	White/Red Paint 14; Exterior	0.20
4208540	P8	Lt. Green Paint 60; Bsmt. Door&Frame	0.4***
4208541	P9	Lt. Grey Paint 60; Bsmt. Stairs	0.26
4208542	P10	Yellow Paint 60; Bsmt. Stairwell	0.87

NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)
AIHA No. 100188 / NYSDOH-ELAP No. 11021

Analysis Methods: ASTM D3335-85A "Standard Method To Test For Low Concentrations Of Lead In Paint By Atomic Absorption Spectrophotometry"
EPA SW846-(7420/7421) "Standard Method To Test For Low Concentrations Of Lead In Soils, Sludges and Sediments By AAS"

Comments: Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation. All results are based on the samples as received at the lab. IATL assumes that appropriate sampling methods have been used and the data upon which these results are based have been accurately supplied by the client. Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies. LSD=0.2 ppm MDL=0.0024% by weight. RL= 0.010% by weight (based upon 100 mg sampled). * Insufficient sample provided to perform QC reanalysis (<200 mg) ** Not enough sample provided to analyze (<50 mg) *** Matrix / substrate interference possible. Sample results are not corrected for contamination by field or analytical blanks. This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any government agency. This report shall not be reproduced except in full, without written approval of the laboratory.

Date Received: 2/8/2011
Date Analyzed: 2/15/2011
Analyst: C. Shaffer

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director



9000 Commerce Parkway, Suite B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client:	Ballast Enviro. Conslt'g Ltd. PO Box87073 RPO DouglasSq. Calgary AB T2Z 3V7	Report Date:	2/15/2011
		Report Number:	0211004287
		Project:	Ft.VermillionResearchCenter
		Project No.:	11166F

LEAD PAINT SAMPLE ANALYSIS SUMMARY

<u>Lab No.</u>	<u>Client No.</u>	<u>Location / Description</u>	<u>Concentration Lead By Weight (%)</u>
4208543	P11	Pink Paint 60; Upstairs Hall Closet	0.13***
4208544	P12	Red Paint 60; Exterior Trim	0.36*
4208545	P13	White Paint 60; Exterior Trim	1.6
4208546	P14	White Paint 60A; Exterior	3.6
4208547	P15	White Paint 57; Exterior	1.6
4208548	P16	White Paint 57; Interior	0.011
4208549	P17	Lt. Green Paint 2; Interior Bsmt.	0.0053
4208550	P18	Peach/Pink Paint 2; Main Women's Bathroom	0.058
4208551	P19	Yellow/Green Paint 2; Main NW Office	0.42
4208552	P20	White/Green Paint 2; Main Floor	0.0099

NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)

AIHA No. 100188 / NYSDOH-ELAP No. 11021

Analysis Methods: ASTM D3335-85A "Standard Method To Test For Low Concentrations Of Lead In Paint By Atomic Absorption Spectrophotometry"
 EPA SW846-(7420/7421) "Standard Method To Test For Low Concentrations Of Lead In Soils, Sludges and Sediments By AAS"

Comments: Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation. All results are based on the samples as received at the lab. IATL assumes that appropriate sampling methods have been used and the data upon which these results are based have been accurately supplied by the client. Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies. LSD=0.2 ppm MDL=0.0024% by weight. RL= 0.010% by weight (based upon 100 mg sampled). * Insufficient sample provided to perform QC reanalysis (<200 mg) ** Not enough sample provided to analyze (<50 mg) *** Matrix / substrate interference possible. Sample results are not corrected for contamination by field or analytical blanks. This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any government agency. This report shall not be

Date Received: 2/8/2011
Date Analyzed: 2/15/2011
Analyst: C. Shaffer



9000 Commerce Parkway, Suite B
 Mount Laurel, NJ 08054
 Toll Free 877-428-4285
 Local: 856-231-9449
 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: Ballast Enviro. Conslt'g Ltd.
 PO Box87073 RPO DouglasSq.
 Calgary AB T2Z 3V7

Report Date: 2/15/2011
Report Number: 0211004287
Project: Ft.VermillionResearchCenter
Project No.: 11166F

LEAD PAINT SAMPLE ANALYSIS SUMMARY

<u>Lab No.</u>	<u>Client No.</u>	<u>Location / Description</u>	<u>Concentration Lead By Weight (%)</u>
4208553	P21	Brown Paint 2; Exterior Trim East	0.40
4208554	P22	Yellow Paint 2; Exterior	0.42
4208555	P23	White Paint Pump House	1.6
4208556	P24	White Paint Pump House Guest Room	0.015
4208557	P25	White Paint 59; Tin Barn Exterior	0.043
4208558	P26	White Paint 62; Exterior	1.3
4208559	PDup1	White Paint	0.012
4208560	PDup2	White Paint	1.5

NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)

AIHA No. 100188 / NYSDOH-ELAP No. 11021

Analysis Methods: ASTM D3335-85A "Standard Method To Test For Low Concentrations Of Lead In Paint By Atomic Absorption Spectrophotometry"
 EPA SW846-(7420/7421) "Standard Method To Test For Low Concentrations Of Lead In Soils, Sludges and Sediments By AAS"

Comments: Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation. All results are based on the samples as received at the lab. IATL assumes that appropriate sampling methods have been used and the data upon which these results are based have been accurately supplied by the client. Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies. LSD=0.2 ppm MDL=0.0024% by weight. RL= 0.010% by weight (based upon 100 mg sampled). * Insufficient sample provided to perform QC reanalysis (<200 mg) ** Not enough sample provided to analyze (<50 mg) *** Matrix / substrate interference possible. Sample results are not corrected for contamination by field or analytical blanks. This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any government agency. This report shall not be

Date Received: 2/8/2011
Date Analyzed: 2/15/2011
Analyst: C. Shaffer

International Asbestos Testing Laboratories
 9000 Commerce Parkway, Suite B
 Mt. Laurel, New Jersey 08054
 Attn: Ray Sankey

MAILED
 2.15.11

Tel. 856 231-9449
 Fax 856 231-9818

- Chain of Custody -

Client: Ballast Environmental Consulting Ltd.
PO Box 87073 RPO Douglas SQ
Calgary, AB Canada T2Z 3V7

Project Name: _____
Project No.: 11166F

Phone: 403-452-3110
FAX: 403-452-3133

Contact: Elvie Reinson
Pager: Cell: 403-860-8524

Special Instructions: _____

Type:

Asbestos	Lead	Other
<input type="checkbox"/> Air	<input type="checkbox"/> Air	<input type="checkbox"/> Soil
<input type="checkbox"/> Bulk	<input type="checkbox"/> Bulk	<input checked="" type="checkbox"/> Paint
<input type="checkbox"/> Water	<input type="checkbox"/> Water	<input type="checkbox"/> Other
<input type="checkbox"/> Soil		
<input type="checkbox"/> Dust		
<input type="checkbox"/> Other		

Analysis Method:

<input type="checkbox"/> PCM : NIOSH 7400	<input type="checkbox"/> PLM : Bulk Asbestos EPA 600	<input type="checkbox"/> TEM : AHERA
<input type="checkbox"/> PCM : OSHA	<input type="checkbox"/> PLM : Point Counting 198.1	<input type="checkbox"/> TEM : NIOSH 7402
<input type="checkbox"/> PCM : Other _____	<input type="checkbox"/> PLM : NOB via 198.1 (PLM only)	<input type="checkbox"/> TEM : EPA Level II
	<input type="checkbox"/> If <1% by PLM, to TEM via 198.4	<input type="checkbox"/> TEM : Microvac / Wipe
<input type="checkbox"/> AAS : NIOSH 7082 (Air)	to meet NYSDOH requirements **	<input type="checkbox"/> TEM : Asbestos in Water
<input type="checkbox"/> AAS : Lead in Drinking Water	(**call to confirm TAT!)	<input type="checkbox"/> TEM : Bulk Analysis
<input checked="" type="checkbox"/> AAS : Lead in Paint ASTM D3335-85a		<input type="checkbox"/> TEM : NOB 198.4
<input type="checkbox"/> AAS : Lead Dust/Wipe "		<input type="checkbox"/> TEM : Other _____
<input type="checkbox"/> AAS : Other Metals / Soil _____		<input type="checkbox"/> Total Dust : NIOSH 0500

Turnaround

FAX: _____ **Verbals:** _____

Time:

date / time

date / time

10 Day 5 Day 3 Day 2 Day 1 Day 6 hour RUSH

Preliminary FAX/Verbal Results Requested by: _____

Sample

Numbers:

Client #(s): P1 - P26
(start) (end)

IATL #(s): _____ - _____ Total: _____
(start) (end)

Chain of Custody:

PDup 1 - PDup 2
(see attached)

Relinquished: <u>Elvie Reinson</u>	Date: <u>Feb 3/11</u>	Time: _____
Received: _____	Date: _____	Time: _____
Sample Log-in: <u>21811</u>	Date: <u>FEB - 8 2011</u>	Time: _____
Sample Prep: <u>2/15/11</u>	Date: _____	Time: _____
Analyzed: _____	Date: _____	Time: _____
QA/QC Review: <u>2/21/11</u>	Date: <u>IATL - By</u>	Time: _____

Archived/Released: _____ QA/QC InterLAB Use: _____ Date: _____ Time: _____

BULK MATERIAL SAMPLING LOG

Worksite: Fert Vermillion Research Centre Date: Feb 1, 2011

Client: PWGC Job No.: 11166F

Date Results Required: _____ No. Samples: _____ Page 1 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
P1	white/red	peint	(33) exterior paint	poor 4208533	entire building	109-0290
P2	silver	"	(33) interior	good 4208534	interior building	109-0314
P3	white	"	(33) interior west	good 4208535	west room	109-0315
P4	white/red	"	(23) exterior paint	poor 4208536	entire building	109-0321
P5	silvery white	"	(23) interior	good 4208537	"	109-0339
P6	white	"	(14) interior east	poor 4208538	"	109-0352
P7	white/red	"	(14) exterior	poor 4208539	"	109-0370
P8	light green	"	(60) bsmt doors frame	good 4208540	closet x 2 door + frame + shelves	109-416
P9	light gray	"	(60) bsmt stairs	good 4208541	stairwell	109-0417
P10	yellow	"	(60) bsmt stairwell	good 4208542	house stairwell kitchen	109-0419
P11	pink	"	(60) upstairs hall closet	good 4208543	2 closets.	109-0424
P12	red	"	(60) exterior trim	fair-poor 4208544	all trim window	109-0437
P13	white	"	(60) exterior trim	poor 4208545	all other door & deck	109-0441
P14	white	"	(60A) exterior	poor 4208546	all	109-0481

BULK MATERIAL SAMPLING LOG

Paint

Worksite: Fert Vermillion Date: Feb 2/11

Client: PLUGSC Job No.: 11166 F

Date Results Required: _____ No. Samples: _____ Page 2 of _____

Sample #	Colour	Description	Location	Condition	Estimated Amount	Picture ID
P15	white	paint	(57) exterior	poor 4208547	building	109-0482
P16	"	"	(57) interior	poor 4208548	"	109-0492
P17	light green	"	(2) interior basement	poor 4208549	entire basement	109-0524
P18	peachy pink	"	(2) main woman bathroom	poor 4208550	bathrooms (peach)	109-0533
P19	yellow/green	"	(2) main NW office	" 4208551	7 of file	109-0534
P20	white/green	"	(2) main floor	" 4208552	all other rooms	109-0535
P21	brown	"	(2) exterior trim east	" 4208553	exterior trim	100-0002
P22	yellow	"	(2) exterior	" 4208554	some trim siding	100-0017
P23	white	"	pump house	poor 4208555	exterior	100-0024
P24	white	"	pump house west room	poor 4208556	all interior	
P25	"	"	(59) Tin Barn Exterior paint	poor 4208557	doors x 5	
P26	"	"	(62) exterior paint	" 4208558	exterior	

BATCH / SAMPLE MANAGEMENT REPORT

Customer No.:	BAL082	Batch Number:	230865
Customer:	Ballast Enviro. Conslt'g Ltd. PO Box 87073 RPO Douglas Sq. Calgary AB T2Z 3V7	Project:	
Customer Rep:	RS	Project Number:	11166F
		TAT:	5 Day
		Date/Time Rec'd:	2/8/2011
# of Samples:	28	Analysis:	Lead Paint
		Time/Date Due:	2/15/2011

Initials Signaling Acknowledgement RTP: _____ To PLM NOB _____ To TEM NOB _____

Special Instructions:

Admin Notes: Portal

Shipping Error:

- _____ Samples were not received in a sealed container. Bulk samples not double bagged.
- _____ Air Cassettes received open in bag... sample integrity compromised, possible contamination.
- _____ Samples received wet.
- _____ Samples received covered with dust... possible cross contamination.
- _____ Sample containers damaged, contents spilled... possible cross contamination.
- _____ Paperwork received in the same bag as samples possible contamination.
- _____ No / Incomplete Chain of Custody Received.
- _____ No / Incomplete Sample Log Received.
- _____ Sample container IDs do not match the client's sample log.
- _____ No Turnaround Time indicated.
- _____ PCM Re-prep for TEM NIOSH 7402. Cassettes previously opened and portion of filter removed.
- _____ Blank(s) not submitted as required by the requested analytical method.
- _____ Minimum shipping requirements not attained. See attached Carrier Air Bill.
- _____ Other: _____

Batch Error:

- _____ Wrong Client ID Listed:
- _____ Wrong Client Location Listed:
- _____ Wrong Project ID Listed:
- _____ Wrong TurnAround Time Listed:
- _____ Wrong Due Date Listed:
- _____ Wrong Date/Time Received Listed:
- _____ Wrong Analysis Method Listed:
- _____ Wrong Number of Samples Listed:

Login Error:

- _____ Sample Log Stamped Incorrectly:
- _____ Sample Containers Mislabeled:
- _____ Duplicate / Extra Samples Not Stamped:
- _____ Analyst Bench Sheet Error:

DAILY QUALITY CONTROL DATA

LEAD SAMPLE ANALYSIS

(DATE: 02 / 15 / 11)

Standard	Total Lead (mg)	Percent Recovery **
Reagent Blank	0.000	< LOQ
Blank Spike	0.500	99
Lab control Std # 401	0.501	106
Matrix Spike - LBP *	1.12	106
Matrix Spike - Wipe *	1.07	102
Matrix Spike - Soil *	0.500	105
Matrix spike - Air *	0.050	98
2.5 ppm Standard	0.25	96
10.0 ppm Standard	1.0	100
40.0 ppm Standard	4.0	101

ELPAT No. 100188 NIOSH PAT No. 100188 NYS-DOH No. 11021Analysis Method: ASTM D3335-85A
NIOSH 7082
EPA SW846 3050 7420Comments: IATL assumes that all sampling complies with accepted methods.
All client supplied sampling data is assumed to be correct when calculating results.
Detection limit based upon 0.2 mg/L reporting limit and sample size.
* NIST Traceable.
** 80-120% acceptable limits.Analyzed By: Chad Shaffer
R. Chad ShafferDate: 2/15/11Approved By: Frank E. Ehrenfeld, III
Frank E. Ehrenfeld, III
Laboratory Director

Advances in Environmental Measurement Methods for Asbestos. Micheal E. Beard and Harry L. Rook, Editors. January 2002. ASTM Stock Number: STP1342.

Alberta Asbestos Abatement Manual. Government of Alberta, Employment, Immigration and Industry. July 2009.

Alberta User Guide for Waste Managers. Alberta Environmental Protection Environmental Service. January 2008.

Asbestos Containing Materials in Buildings to be Demolished. Workplace Health and Safety Bulletin. Alberta Human Resources and Employment. Revised July 2009.

Asbestos Sampling. United States Environmental Protection Agency. November 1994.

Canada-wide Standard for Mercury-containing Lamps. CCME Council of Ministers. April 30-May 1, 2001. Winnipeg.

Do I have a Workplace Mould Problem? Workplace Health and Safety Bulletin. Alberta Human Resources and Employment. Revised October 2006.

Environment Protection and Enhancement Act. Government of Alberta. E12-RSA2000. ISBN# 9780779735495

Guidelines for the Disposal of Asbestos Waste. Environmental Protection Services Alberta Environment. August 1989.

Handbook on PCB's In Electrical Equipment. Environment Canada. February 2010. <http://www.ec.gc.ca/drgd-wrmd/default.asp?lang=En&n=BCA7C003-1&offset=3&to=show&printer...>

Hazardous Material Abatement Consultant Services TERMS OF REFERENCE Reasearch Centre Buildings Hazardous Materials Investigation For: Agriculture and Agri-Food Canada, Research Centers Lacombe, Beaverlodge, Fort Vermillion, Alberta. Public Works and Government Services Canada, Real Property Services, Western Region, Engineering Services, November 22, 2010.

Hazardous Products Act. (R.S., 1985, c. H-3) Current to January 1st, 2010. Department of Justice Canada. <http://laws.justice.gc.ca/en/H-3/FullText.html>.

Health and Safety Issues Associated with the Refrigerant HCFC-123 (R123). Workplace Health and Safety Bulletin. Alberta Human Resources and Employment. Revised November 2006.

Identification of Lamp Ballasts Containing PCBs. Environmental Protection Series. Environment Canada. August 1991. Report EPS 2/CC/2

Lead and Health. Her Majesty the Queen in Right of Canada, represented by the Minister of Health Canada. 2007. ISBN: 978-0-662-44815-0.

Lead at the Work Site. Workplace Health and Safety Bulletin. Alberta Human Resources and Employment. Revised July 2005.

Measure for Measure. May 2006. T. Glover & R. Young. Sequoia Publishing Inc. ISBN: 1-889796-00-X.

Mercury and the Environment. Environment Canada. Crown Copyright. 1992.

Mercury at the Work Site. Workplace Health and Safety Bulletin. Alberta Employment, Immigration and Industry. Revised April 2007.

Mould Guidelines for the Canadian Construction Industry. Canadian Construction Association. CCA 82. 2004.

Occupational Health and Safety Act. May 24, 2006. Office Consolidation. Alberta Queen's Printer.

Occupational Health and Safety Code 2009. Government of Alberta. 2009. Office Consolidation. Alberta Queen's Printer.

Occupational Health and Safety Regulation. Alberta Regulation 62/2003.

Ozone-Depleting Substances Regulation (AR 125/93). Government of Alberta. February 2002.

Radiation Protection Act. R-2 RSA2000. Alberta Government. ISBN# 9780779724376.

Residential Indoor Air Quality Guidelines. Her Majesty the Queen in Right of Canada, represented by the Minister of Health Canada. 2007. ISBN: 978-0-662-45739-8.

Standard Guide for Limited Asbestos Screens of Buildings. ASTM International. August 2005. 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States.

Standard Guide for Readily Observable Mould and Conditions Conducive to Mould in Commercial Buildings: Baseline Survey Process. ASTM International. March 2006. 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States.

Waste Control Regulation. Government of Alberta. 192/1996.

Superfund Method for the Determination of Releasable Asbestos in Soils and Bulk Materials. United States Environmental Protection Agency.

QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES

The purpose of Quality Assurance and Quality Control (QA/QC) procedures is to ensure that data used to evaluate site conditions are accurate and reliable. Quality Assurance is a complete program designed to produce results which are valid, scientifically defensible, and of known precision, bias, and accuracy and includes planning, documentation and quality control activities. Quality Control is a system of activities to ensure a quality product, including measurements made to ensure and monitor data quality and includes calibrations, duplicate, blank, and spiked measurements, inter-laboratory comparisons and audits.

DUPLICATES

Duplicate samples are analyzed to check the reproducibility of sampling and analytical results. A duplicate is any additional sample collected at the same time as another in a manner that minimizes differences. One duplicate should be collected and analyzed for approximately every twenty samples collected.

Reproducibility of duplicate samples is calculated by calculating the relative percent difference.

Relative percent difference (RPD): A measure of precision, calculated by:

$$Rd\% = [X_1 - X_2] / X_{ave} \times 100$$

where:

X_1 = concentration observed with the first detector or equipment;

X_2 = concentration observed with the second detector, equipment, or absolute value;

and

$$X_{ave} = \text{average concentration} = ((X_1 + X_2) / 2)$$

The acceptable limits of RPD vary for different constituents ranging from 40% to 50%. An RPD value within the acceptable limit indicates that the laboratory data are consistent and reliable. The following table summarizes acceptable RPD limits:

Constituents	Acceptable RPD
Asbestos	<50%
Lead	<40%

It is common for the paint samples to have interference from the substrate. This arises from the difficulty of sampling paint firmly attached to surfaces.



QA/QC Duplicate Sample Summary for Asbestos

Sample ID	Result (%)	Duplicate ID	Duplicate Result (%)	RPD (%)	Pass/Fail
Lacombe					
A1	None detected	Dup 1	None detected	0	PASS
A22	None detected	Dup 2	None detected	0	PASS
A25	30	Dup 3	25	18	PASS
A40	2.9	Dup 4	2.6	11	PASS
A49	None detected	Dup 5	None detected	0	PASS
A72	3.1	Dup 6	1.8	53	FAIL
A74	1.9	Dup 7	1.7	11	PASS
A84	None detected	Dup 8	None detected	0	PASS
A86	None detected	Dup 9	None detected	0	PASS
Fort Vermillion					
A20	2.0	Dup 1	1.2	50	PASS
A42	55	Dup 2	70	24	PASS
A57	None detected	Dup 3	None detected	0	PASS
Beaverlodge					
A7a	1.8	Dup 4a	1.2	40	PASS
A7b	None detected	Dup 4b	None detected	0	PASS
A14	None detected	Dup 1	None detected	0	PASS
A32	None detected	Dup 5	None detected	0	PASS
A39	None detected	Dup 2	None detected	0	PASS
A72	1.3	Dup 3	1.2	8	PASS
A120	50	Dup 6	85	52	FAIL
A145a	None detected	Dup 7a	None detected	0	PASS
A145b	None detected	Dup 7b	None detected	0	PASS
A177	25	Dup 8	25	0	PASS
A190	2.7	Dup 9	1.9	35	PASS
A200	25	Dup 12	25	0	PASS
A201a	0.25	Dup 11a	1.1	126	FAIL
Retest A201a	0.25	Retest Dup 11a	1.2	131	FAIL
A224	2	Dup 10	1.2	50	PASS

A total of twenty six duplicate samples were taken for asbestos. Three of the samples failed and two of the samples which failed QA/QC did not change the outcome of the results.

Sample 201 and the associated Dup 11 had results which changed from asbestos containing to non-asbestos containing. These samples were re-tested to confirm the original findings, and the original findings were supported. This shows the variability of asbestos in certain products. The conclusion was drawn these floor tiles were asbestos containing.

QA/QC Duplicate Sample Summary for Lead

Sample ID	Result	Duplicate ID	Duplicate Result	RPD	Pass/Fail
Lacombe					
P9	<0.0085	Dup 1	<0.0067	0	PASS
P16	0.35	Dup 3	0.54	43	FAIL
P24	0.87	Dup 5	1.2	32	PASS
Fort Vermillion					
P6	0.011	Dup 1	0.012	9	PASS
P23	1.6	Dup 2	1.5	6	PASS
Beaverlodge					
P17	0.39	Dup 1	0.58	39	PASS
P27	0.0098	Dup 2	0.16	177	FAIL
P31	4.7	Dup 3	4.5	4	PASS
P34	0.077	Dup 4	0.099	25	PASS

Nine duplicated samples were taken for analyzing lead in paint and two failed the QA/QC. Sample P27 results did not change the conclusion that this sample is not lead containing paint. The duplicated results of sample P16 did change the conclusion from not lead containing to lead containing paint. This sample was of white exterior paint, similar to all other white exterior paint located on the facility. The majority of the 'white exterior paint' samples were lead containing and therefor it is assumed the higher result is more likely and it is concluded this paint is lead containing.

QA/QC Duplicate Sample Summary for Laboratory

Sample ID	Result	Duplicate ID	Duplicate Result	RPD	Pass/Fail
Beaverlodge					
A121	65	Z1	50-75	0	PASS
A177	25	Z2	25-50	0	PASS
A175	None detected	Z3	None detected	0	PASS
A202	None detected	Z4	None detected	0	PASS
A200	25	Z5	25-50	0	PASS

Five samples were sent to two different laboratories to compare the results. All passed the QA/QC.

