DISTRICT OF MACKENZIE

REQUEST FOR PROPOSAL

Modular Pool Slide

Issue Date: November 12, 2024
Closing Date: 11:00am February 15, 2025

District of Mackenzie
Bag 340
400 Skeena Drive
Mackenzie, BC, V0J 2C0
Attn: Terry Gilmer

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Introduction

The District of Mackenzie (the "District") is seeking proposals from qualified and interested firms to provide professional services for the **MODULAR POOL SLIDE PROJECT**, as detailed in the Proposal Deliverables section. The total budget for this project is from $125,000 to $350,000.

The District aims to select the Proponent that submits and can complete a proposal that most effectively meets the District's objectives and best satisfies the evaluation criteria outlined in this Request for Proposal (RFP). The District is not necessarily interested in obtaining the lowest price for this work. The quality of the service, relevant experience, schedule, methodology, equipment and resources to be used, safety, use of local resources, and other factors will be taken into consideration in the evaluation of proposals received. Award of this contract is subject to funding approval.

There is no mandatory site viewing but Proponents are strongly encouraged to conduct their own site visit to familiarize themselves with the site conditions and access.

Definitions

1.1. "Contract" means the written agreement resulting from this Request for Proposal, if any, in accordance with this Request for Proposal.

1.2. "Proponent" means the person submitting a proposal.

1.3. "Proposal" means a submission in response to this request for proposals;

1.4. "RFP" means this request for proposals

1.5. "the District" means the District of Mackenzie

1.6. "must," "shall" or "mandatory" means a requirement that must be met in order for the proposal to receive consideration;

1.7. "should" or "desirable" means a requirement having a significant degree of importance to the objective of the request for proposals, but which the District would strongly prefer to be fulfilled, and which the District may in its sole discretion elect to treat the failure to fulfill as a grounds for rejection of a Proposal;

Timeline

The following timeline is an estimate and may be adjusted at the District of Mackenzie' s discretion any time during this procurement process.

Distribution of RFP	November 12, 2024
Deadline for questions submitted by email	11:00am, January 15, 2025
Upload of final Q&A Document (if required)	11:00am, January 25, 2025
RFP Submission Deadline	11:00am, February 15, 2025
Target Notification to successful proponent	March 30, 2025
Target slide installation	July 2025 (Pool Shutdown)

Proposals

a. The Proponent shall complete and submit the following documents with the Proposal submission:

- ☐ Background information on Proponent including experience and qualifications in the equipment industry
- ☐ Appendix A – Proponent Information and Agreement Form
- ☐ Appendix B – Proposal Price(s), Service & Value-Added Information, & References
- ☐ Specification Sheets, Proposed Design(s), Literature

b. Prices should be quoted:

- In Canadian dollars;
- Inclusive of duty, where applicable;
- Inclusive of PST if applicable;
- FOB destination, delivery charges included where applicable;
- Goods and Services Tax (GST) should be shown as a separate line item.

Sub-Contracting

a. All Vendors should fully disclose any proposed subcontracting of any of the required services.

b. Using a sub-contractor (who must be clearly identified in the Proposal) is acceptable. This includes a joint submission by two Proponents having no formal corporate links. However, in this case, one of these Proponents should be prepared to take overall responsibility for successful interconnection of the two product or service lines and this must be defined in the Proposal.

c. Sub-contracting to any firm or individual whose current or past corporate or other interests may, in the District's opinion give rise to a conflict of interest in connection with this project will not be permitted, and a Proposal may be rejected on this basis in the District's absolute and unfettered discretion. This includes, but is not limited to, any firm or individual involved in the preparation of this Request for Proposal.

Proposal Deliverables

The Proponent shall provide all of the engineering, drawings, materials, equipment and labor necessary to perform the work described by the requirements and provisions of the contract, and demonstrate all required certifications for the project entitled:

MODULAR POOL SLIDE PROJECT

Action Item 1: Conduct Foundation Assessment

- The Proponent must provide the District with a written foundation assessment specific to the slide location, including recommendations for placement.

Action Item 2: Provide Modular Pool Slide Options

- The Proponent shall present the District with up to two (2) options for Modular Pool Slides, including costs, shipping details, custom brokerage, duties, etc. to a landed price at site. One option with a run outside/flume on the deck and one smaller option with a plunge slide into pool. Our total budget is from $125,000 to $350,000 - ideally one option is on the higher end of the scale and the other submission is on the lower end of the budget scale.
- Modular Pool Slides should be manufactured using RTM (Resin Transfer Molding) technology for consistent color and consistent surface finish. No painted fiberglass surfaces will be accepted.
- A rubber gasket shall be used between the slide flume flanges with the final seal of Poly Urethan Silicon.
- All Metal components shall be Painted, or epoxy Coated.
- All Horizontal surfaces used for foot traffic must have an Antislip rating of C2 or higher.
- All steps shall be free draining and not have water ponding within/on them.

Action Item 3: Installation of Modular Pool Slide

- The Proponent is responsible for supplying all labor, materials, and equipment necessary to install the Modular Slide, including the procurement of parts, engineering, stamped drawings and permits.

Addenda & Questions

a. Proponents are advised that all subsequent information regarding this RFP, including any addendum, will be distributed on the District's webpage. Notification will not automatically be sent to all Proponents. It is the responsibility of all Proponents to check for addenda, which may be posted at any time up to closing time, prior to submitting their Proposal. All addenda should be acknowledged in a Proponent's Proponent Information and Agreement Form.

b. To clarify any issues in this RFP, the District of Mackenzie will respond only to questions that are presented through e-mail. Questions should be submitted to **Terry Gilmer** at **terry@districtofmackenzie.ca.** Telephone questions will not be accepted.

c. All questions must be received by **11:00am on January 15, 2025**

d. All questions and answers will be consolidated into a single Q&A document which will be posted on the District of Mackenzie website at www.districtofmackenzie.ca, with the RFP documents on or before **January 25, 2025 at 11:00am**. The Q&A document will be continually updated and reposted once weekly (excluding weekends & holidays) as questions are received.

e. The District reserves the right to seek clarification regarding the Proposal with the Proponent to assist in making evaluations. The Proponent should submit a name and telephone number of a person the District may contact regarding any questions or clarifications relating to the Proponent's submission to the Request for Proposals.

Submitting Your Proposal

a. Proposal submissions should be titled "**MODULAR POOL SLIDE PROJECT**" in the subject line.

b. Completed Proposals must be received by courier, mail, hand delivery, or email to:

Terry Gilmer
Director of Recreation Services
PO Bag 340
400 Skeena Drive
Mackenzie, BC, V0J 2C0

Email: terry@districtofmackenzie.ca

c. The deadline for receipt of complete Proposals is **11:00 am Pacific Standard Time**, on **February 15, 2025**. Late Proposals will not be accepted and will be returned to the Proponent.

Proponent & District Responsibilities

a. It is the responsibility of Proponents to ensure compliance with all requirements and deadlines. It is the responsibility of Proponents to ensure delivery of all required response material. Proposals which are not in compliance with the RFP requirements may be rejected.

b. The District of Mackenzie assumes no responsibility for technological or logistical issues in delivering Proponent responses.

c. All costs of preparation and presentation associated with a response to this RFP will be the responsibility of the Proponent.

d. Proponents may be asked to make a presentation before the District if selected as a finalist.

e. The District reserves the right to enter into a contract with a Proponent for all, part, or none of the service or products that are the subject of this Request for Proposals.

f. Submission of a Proposal in response to this RFP indicates the Proponent's acceptance of the terms and conditions contained within the RFP.

g. Proponents who have obtained the Request for Proposal electronically must not alter any portion of the document, with the exception of adding the information requested. To do so will invalidate the Proposal.

Alternate Proposals & Changes to Proposal Wording

a. If an alternate solution is offered, the information should be submitted in the format requested as a separate Proposal.

b. The Proponent will not change the wording of their Proposal after closing and no words or comments will be added to the Proposal unless requested by The District of Mackenzie for purposes of clarification.

Conflict of Interest and Disclosure of Business Relationships

Any potential conflict of interest must be disclosed to the District. Proposals will not be evaluated if the Proponent's current or past corporate or other interests are, in the reasonable opinion of the District deemed or perceived to be a conflict of interest in connection with this RFP or the activities or mandate of the District.

a. All Proponents must make full disclosure of any of the following existing business relationships with any members of the District of Mackenzie Mayor and Council, District employees or immediate relatives of any members of the District's employees:

- If a private company, details of ownership of shares by any of the above;
- If a public company, details of ownership of shares, in excess of one percent (1%) to total shares by any of the above;
- If a partnership, details of any partnership arrangement of any of the above;
- Details of any direct or indirect pecuniary interest of any of the above in the supply of such goods and services.

b. Disclosure, if any, shall be made in writing at the time of submitting Proposals.

c. If the Proponent fails to disclose an interest and/or the interest is falsely or insufficiently reported, the District reserves the right to reject the Proposal in its absolute discretion.

Confidentiality

a. All Proponents and any other person who through this RFP process gains access to confidential financial information of the District are required to keep strictly confidential all information which in any way reveals confidential business, financial or investment details, programs, strategies, or plans, learned through this RFP process. Information pertaining to the District obtained by the Proponent as a result of participation in this process is confidential and must not be disclosed without written authorization from the District.

b. The Proposal should clearly identify any information that is considered to be confidential or proprietary information (the "Confidential Information"). However, the District of Mackenzie is subject to the Freedom of Information and Protection of Privacy Act. As a result, while the Act offers some protection for third party business interests, the District of Mackenzie cannot guarantee that any Confidential Information provided to the District of Mackenzie can be held in confidence if a request for access is made under the Freedom of Information and Protection of Privacy Act.

Evaluating Proposals

a. Evaluation of Proposals will be by a committee formed from The District of Mackenzie's Public Works Department and may include members of the District's Finance and Corporate Departments and District contractors.

b. Awards will be based on the best value offered, and the best value will be determined by the District in its sole discretion. Evaluation criteria will be:

Section	Description	Points
1	Current British Columbia Construction Safety Association Certificate of Recognition (COR) or (**BCCSA**)	Pass / Fail
2	Corporate profile, relevant corporate experience	10
3	Project team qualification and experience	20

4	A detailed cost estimate and timeline	20
5	References, from three (3) recent clients for services provided similar to those requested in this RFP in the last five (5) years.	15
6	Project understanding and proposed methodology for managing the Scope of Work: Provide a detailed plan that outlines an understanding of the project and the Scope of Work of this RFP, and identification of scope items that may not be identified in the RFP but are essential for the successful completion of the project.	25
7	Health, Safety and Environment Framework: (a) Provide a corporate approach to safety and the last five (5) years of safety statistics on projects managed. (b) Identified potential environmental impacts and corporate mitigation measures to address them; and Identified potential project safety and health risks and mitigation measures to address them.	10

SCORING CRITERIA	**SCORE**	**PERCENTAGE OF POINTS**
Exceeds the requirements of the criterion in superlative beneficial ways / very desirable.	**Excellent**	**100**
Exceeds the requirements of the criterion in ways which are beneficial to the District's needs.	**Very Good**	**80**
Exceeds the requirements of the criterion but in a manner which is not completely beneficial to the District's needs. Fully meets all requirements.	**Good**	**65**
Adequately meets most of the requirements of the criterion. May be lacking in some areas which are not critical. Addresses most, but not all, of the requirements to a minimal acceptable level. May be lacking in some areas which are not critical.	**Average**	**50**
Barely meets most of the requirements of the criterion to the minimum acceptable level. May be lacking in some areas which are not critical. Minimally addresses some, but not all, of the requirements of the criterion. Lacking in critical areas.	**Poor**	**30**
Very poor to unsatisfactory.	**Very Poor**	**15**
Does not satisfy the requirements of the criterion in any manner.	**Unsatisfactory**	**0**

c. While previous experience with the District is not required and does not in any way confer an advantage, the District's previous experience with the Proponent may also be taken into consideration in its evaluation of Proposals. The District reserves the right to rely upon its records, references, and recollection in this regard. The District may also obtain references other than those provided by the Proponent and may use these references in determining the best value.

d. By responding to this RFP, Proponents will be deemed to have agreed that the decision of the District will be final.

Communication with the District of Mackenzie

a. Only the Director of Recreation Services for the District of Mackenzie (or designate) is the District's representative authorized to communicate and otherwise deal with Proponents and all Proponents should communicate and otherwise deal with that person only. Contact with any other District representative, including Members of Council, officers or employees of the District regarding this RFP or a Proponent's submission may result in that Proposal being removed from consideration for this RFP. As stated above, all communication should be presented via email to the address stated above.

b. All Proponents who have submitted a Proposal will be notified of the Board's decision after the final selection has been made. This notice of final selection may be the only communication between the District of Mackenzie and Proponents. Telephone or other inquiries concerning this Proposal after the Proposal deadline are discouraged.

Rejection & Acceptance of Proposals

No Obligation to Proceed

The District reserves the right to cancel this Request for Proposals at any time and for any reason, and will not be responsible for any loss, damage, cost, or expense incurred or suffered by any Proponent as a result of that cancellation. The receipt by the District of any information (including any submissions, ideas, plans, drawings, models, or other materials communicated or exhibited by any intended Proponent, or on its behalf) shall not impose any obligations on the District.

Acceptance and Rejection of Proposals

a. This Request for Proposal should not be construed as an agreement to purchase goods or services. The District is not bound to accept the lowest priced or any Proposal of those submitted. The District will be under no obligation to receive further information, whether written or oral, from any Proponent.

b. No act of the District, other than a notice in writing signed by the Chief Administrative Officer or the Director of Recreation, shall constitute an acceptance of a Proposal. Note that any acceptance may be subject to Council approval.

c. Neither acceptance of a Proposal nor execution of a Contract will constitute approval of any activity or development contemplated in any Proposal that requires any approval, permit or license pursuant to any federal, provincial, regional district or municipal statute, regulation, or bylaw.

d. The District's intent is to enter into a Contract with the Proponent who has submitted the best offer. The District reserves the right to accept any or none of the proposals submitted and will evaluate proposals based on the best value offered to the District and not necessarily the lowest price, using the criteria specified in this RFP. The District reserves the right in its sole unrestricted discretion to:
    a. accept any Proposal which the District deems most advantageous to itself;
    b. reject any and/or all irregularities in a Proposal submitted;
    c. waive any defect or deficiency in a Proposal whether or not that defect or deficiency materially affects the Proposal and accept that Proposal;
    d. reject any and/or all Proposals for any reason, without discussion with the Proponent(s);
    e. accept a Proposal which is not the lowest Proposal; and
    f. cancel or reissue the RFP without any changes;

e. The District reserves the right to enter into negotiations with one or more Proponents concerning the terms and conditions of the services to be provided, and expressly reserves the right through such negotiations to request changes, alterations, additions, or deletions from the terms of any Proposal received.

f. If the District chooses to enter into a contract with a Proponent as a result of this RFP, the successful Proponent may be required to enter into a written agreement with the District. Such agreement will be prepared by the Director of Recreation and will embody the terms of the Proposal and any subsequent written amendments.

Limitation of Damages

The Proponent is responsible for ensuring that they have obtained and considered all information necessary to understand the requirements of the RFP and to prepare and submit their Proposal.

Proponents are solely responsible for their own expenses in preparing a Proposal and for subsequent negotiations with the District, if any.

Proponents acknowledge that the District, in the preparation of the Request for Proposals, supply of oral or written information to Proponents, review of Proposals or the carrying out the District's

responsibilities under this Request for Proposals, does not owe a duty of care to the Proponents.

Except as expressly and specifically permitted in this RFP, no Proponent shall have any claim for any compensation of any kind whatsoever as a result of participating in this RFP, and each Proponent, by submitting a Proposal, waives for itself, its successors and assigns, the right to sue the District for any loss, including economic loss, damage, cost or expense arising from or connected with any error, omission or misrepresentation occurring in the preparation of the Request for Proposals, the supply of oral or written information to Proponents, the review of Proposals, or the carrying out the District's responsibilities under this Request for Proposals, with the exception of fraud on the District's part.

Not A Tender

This Request for Proposal is not a tender call, and neither it nor the submission of any response to this RFP creates a tender process or a "Contract A".

Modification of Terms

The District reserves the right to modify the terms of the Request for Proposal at any time at its sole discretion.

Use of Request for Proposal

This document, or any portion thereof, may not be used for any purpose other than the submission of Proposals.

Accuracy of Information

The District of Mackenzie makes no representation or warranty, either express or implied, with respect to the accuracy or completeness of any information contained or referred to in this RFP.

While the District has used considerable efforts to ensure an accurate representation of information in this Request for Proposal, the information contained in this Request for Proposal is supplied solely as a guideline for Proponents. The information is not guaranteed or warranted to be accurate by the District, nor is it necessarily comprehensive or exhaustive. Nothing in this Request for Proposal is intended to relieve Proponents from forming their own opinions and conclusions with respect to the matters addressed in this Request for Proposal.

APPENDIX A

PROPONENT INFORMATION AND AGREEMENT FORM

(should be completed and returned)

PROPONENT INFORMATION

Legal Business Name: _____

Address: _____

Contact Person: _____

Contact Information: _____
(phone / cell / fax / email)

PROPONENT AGREEMENT

The e*nclosed proposal is submitted in response to the above-referenced Request for Proposals, including any addenda. Through submission of this proposal, we agree to all of the terms and conditions of the Request for Proposals and agree that any inconsistent provisions in our proposal will be as if not written and do not exist. We have carefully read and examined the Request for Proposals, including the Instructions to Proponents, and have conducted such other investigations as were prudent and reasonable in preparing the proposal. We agree to be bound by statements and representations made in our proposal.*

Signature of Authorized Representative: _____

Printed Name of Authorized Representative: _____

Title of Authorized Representative: _____

Date: _____

To acknowledge receipt of each addendum, each addendum number issued should be noted below with a signature of an authorized representative of the organization, as being received.

Addendum No. 1 Signature _____ Date _____

Addendum No. 2 Signature _____ Date _____

Addendum No. 3 Signature _____ Date _____

APPENDIX B

PROPOSAL PRICE(S), SERVICE & VALUE-ADDED INFORMATION AND REFERENCES

Option 1

Specifications/Model:_____

Cost: _____ GST: _____Total Cost:_____

Value Added:_____

Option 2

Specifications/Model:_____

Cost: _____ GST: _____Total Cost:_____

Value Added:_____

Note: Fixed prices are inclusive of all costs associated with completing the entire project.

Each Proponent is requested to provide three (3) references from clients who have obtained similar goods or services to those requested in the RFP from the Proponent in the last five (5) years. The references should be from municipal government or public sector clients.

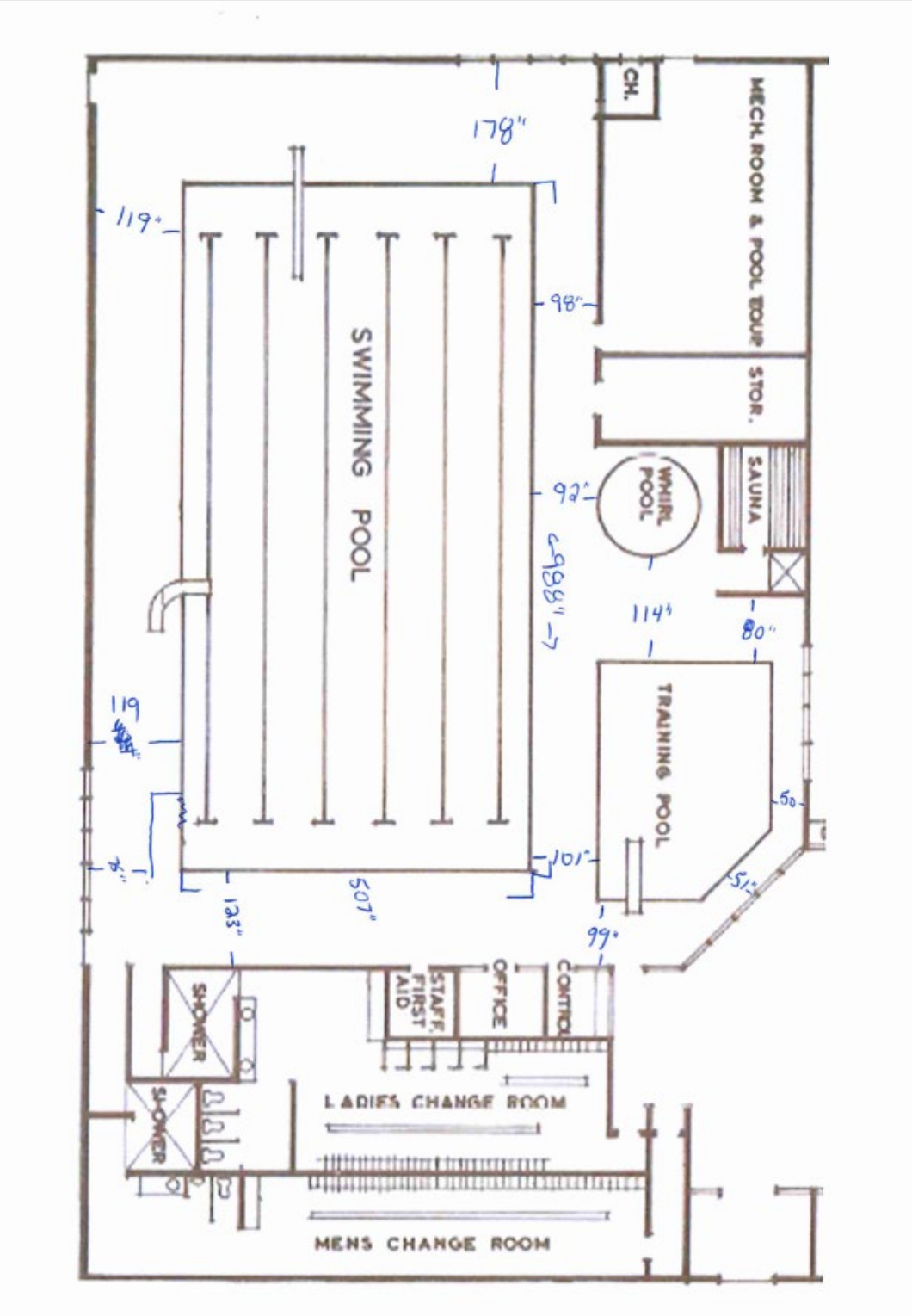
Reference #1 Company Name:	
Company Address:	
Contact Name:	
Contact Telephone Number:	
Date Work Undertaken:	
Nature of Assignment:	

Reference #2 Company Name:	
Company Address:	
Contact Name:	
Contact Telephone Number:	
Date Work Undertaken:	
Nature of Assignment:	

Reference #3 Company Name:	
Company Address:	
Contact Name:	
Contact Telephone Number:	
Date Work Undertaken:	
Nature of Assignment:	

APPENDIX C

SITE MAP



APPENDIX D

HAZARDOUS MATERIAL ASSESSMENT

PEAK ENVIRONMENTAL LTD.

951 Pinewood Place
West Kelowna, BC V1Z 3G7
e-mail: info@peakenvironmental.ca
Toll Free 1-877-518-7325 (PEAK)
Office: 250-862-0971
WSBC AAL #01012

HAZARDOUS AND REGULATED MATERIALS ASSESSMENT AND INVENTORY

MACKENZIE AND DISTRICT ARENA

400 Skeena Drive
Mackenzie, BC

Prepared for:

District of Mackenzie

P.O. Bag, 1 Mackenzie Blvd #340
Mackenzie, BC, V0J 2C0

Initial Report Date: 2024-09-06

Revision Date:

All observations and conditions herein are respective to dates and scope listed in the Revision History.
***File**: Rec Centre Hazardous Materials Inventory Report*

EXECUTIVE SUMMARY

Peak Environmental Ltd. was retained by the District of Mackenzie to perform an assessment and review of the Mackenzie and District Arena for hazardous and regulated materials. The following hazardous materials are included in the survey:

Asbestos-containing materials (ACM)	Toxic, flammable or explosive materials
Polychlorinated biphenyls (PCBs) (electrical equipment)	Biological contaminants (mould, fecal matter, drug paraphernalia)
Lead-based paint	Radioactive materials
Potential lead containing products	Fuel/Oil storage tanks (where visible)
Mercury (electrical equipment & thermostats)	Crystaline Silica containing applications
Ozone depleting substances (ODS)	

The purpose of the ACM survey is to collect samples of building materials to determine their asbestos content, identify and record locations, calculate potential for future damage and provide quantities, remediation cost estimates and a prioritized abatement schedule based on building occupant risk of exposure to asbestos containing fibres. The assessment was conducted using non-destructive sampling methods in compliance with the requirements outlined in the WorkSafeBC Occupational Health and Safety Regulation 6.4 – Inventory, and forms part of this District's Asbestos Management Program. The Asbestos Inventory is intended to protect staff and building occupants from exposure to harmful substances during day to day building occupancy and regular maintenance work. It does not satisfy the requirements for renovation or demolition activities as defined in WorkSafeBC Occupational Health and Safety Regulation Section 20.112.

A visual inspection was performed for other hazardous and regulated materials.

ASBESTOS-CONTAINING APPLICATIONS

Confirmed Asbestos-Containing Applications:

CODE	CONFIRMED ACM DESCRIPTION
C1	Cementitious insulation on mechanical pipe fittings
M2	Cream mastic adhering arena metal cladding
Md1	Red duct joint sealant
Mw1	Black sealant between window frame and pane
P1	White drywall tape compound (1968 construction era)
V1	Vermiculite infill insulation (concrete block walls)
W2	White fibrous vibration dampener

Applications with Immediate or Priority 1 Abatement Code:

Applications in poor condition in high risk areas that should be removed as soon as possible.

CODE	APPLICATIONS FOR IMMEDIATE OR PRIORITY 1 REMOVAL
V1	Vermiculite debris on floors, contents and/or in ceiling spaces
W2	Woven vibration dampener

Suspect Asbestos-Containing Applications:

Applications that are present but have not been analyzed to confirm asbestos content. All *Suspect* applications must be sampled prior to disturbance.

CODE	SUSPECT ACM DESCRIPTION
Kp1	Pipe flange gasket on mechanical piping
Qs2	Burgundy torch down asphalt shingle
Y1	Arc chutes within transformer

Potential Asbestos-Containing Applications

Concealed asbestos-containing building applications that may be present based on building age, but were not observed or identified through this assessment due to inaccessibility, live electrical or mechanical systems, building occupancy or requirement for breaching building membrane.

Flooring layers	Pipe flange gaskets
Floor leveling compound	Pipe roving in sanitary pipe bells and spigots
Tar and gravel roofing, roof felts, tar patching compounds and membranes	
Vermiculite insulation which may be within concrete block walls concealed beneath covering or enclosing materials, interstitial spaces between courses of brick/block walls or within inaccessible wall cavities or attic space areas	

Areas of Restricted Entry

AREA #	HAZARD / RISK
108C	Exposed vermiculite debris within the ceiling space must not be disturbed prior to remediation by a qualified contractor. See Appendix B: Drawings for approximate location.
108J	Exposed vermiculite debris within the ceiling space must not be disturbed prior to remediation by a qualified contractor. See Appendix B: Drawings for approximate location.
113	Exposed vermiculite debris within the ceiling space must not be disturbed prior to remediation by a qualified contractor. See Appendix B: Drawings for approximate location.
124A	Exposed vermiculite debris must not be disturbed prior to remediation by a qualified contractor. See Appendix B: Drawings for approximate location.

Areas Inaccessible at Time of Assessment

AREA #	AREA DESCRIPTION
119	Elevator
119A	Elevator Machine Room

LEAD IN PAINT:

Lead in Paint (Total Concentration >Reporting Limit)

SAMPLE	PAINT DESCRIPTION AND SAMPLE LOCATION
6362-ICP-01	Grey on blue on white on wood
6362-ICP-02	White on wood
6362-ICP-03	Grey on red on concrete
6391B-ICP-01	Grey on arena metal cladding - Maintenance Room 100Q

OTHER HAZARDOUS AND REGULATED MATERIALS:

HAZARDOUS MATERIAL CATEGORY	TYPE
Potential Lead Products	• Lead roof jacks/flashing • Lead solder on copper pipe
Equipment Suspected of Containing PCBs	• Electrical equipment
Mercury Containing Equipment*	• Fluorescent light tubes/high voltage lighting • Thermostats
Toxic Flammable Explosive Materials*	• Sored paint/chemicals/cleaners
Ozone Depleting Substances (ODS)*	• Refrigerators and or freezers • Roof or wall mounted air conditioning units
Biological Hazards*	• None observed
Radioactive Materials*	• Smoke detectors
Fuel Storage Tanks (AST / UST)	• None observed
Crystalline Silica Containing Materials	• Present; see Appendix A – Regulated Materials

* Materials with an asterisk may be brought into the building at any time. Presence or absence is applicable to conditions at the time of survey.

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APPENDICES

Report Revision History

VERSION[1]	DATE		CHANGE DESCRIPTION	SUBMITTED BY
	ISSUE	SURVEY		
1	2024-09-06	2024-08-18	INITIAL REPORT	PEAK ENVIRONMENTAL LTD.

[1] Updates in subsequent versions apply only to the project scope as stated in the corresponding *Change Description*. Unless noted as a complete reassessment, there is no change to information outside of the version project scope.

1 PROJECT SCOPE

Peak Environmental Ltd. was retained by the District of Mackenzie to perform a facility assessment for asbestos-containing building materials (ACM) and prepare an Asbestos Inventory. The purpose of this survey is to collect samples of building materials to determine their asbestos content, identify and record locations, calculate potential for future damage and provide quantities, remediation cost estimates and a prioritized abatement schedule based on building occupant risk of exposure to asbestos containing fibres. The assessment was conducted using non-destructive sampling methods in compliance with the requirements outlined in the WorkSafeBC Occupational Health and Safety Regulation 6.4 – Inventory, and forms part of this District's Asbestos Management Program. The Asbestos Inventory is intended to protect staff and building occupants from exposure to harmful substances during day to day building occupancy and regular maintenance work. It does not satisfy the requirements for renovation or demolition activities as defined in WorkSafeBC Occupational Health and Safety Regulation Section 20.112.

The following list defines the Inventory project scope and exclusions:

1.1 SCOPE OF WORK

1.1.1 Asbestos

A. Inspect all accessible spaces including ceiling, crawl spaces, pipe chases and mechanical areas for asbestos-containing materials. Refer to Appendix A for a list of inaccessible spaces in this building.

B. Collect and analyze bulk samples of all building materials suspected of containing asbestos as required in Section 6.4 of the WorkSafeBC Occupational Health and Safety Regulation.

C. Provide a complete and comprehensive Materials Inventory (Appendix D) for all building materials confirmed or suspected of containing asbestos.

D. Provide a detailed list of building materials (floors, walls, mechanical, etc.) on a room by room basis in Appendix C.

E. Drill Concrete Masonry Unit (CMU) walls to determine presence of vermiculite insulation where exposed exterior / interior block or brick walls are visible.

F. Provide approximate abatement costs on a per application basis. Where the extent of the application cannot be determined without the use of destructive sampling methods, the application is listed, but without estimated abatement costs.

G. Provide a recommended removal schedule, and an Operations and Maintenance (O&M) Program categorized by application type.

H. Submit an Asbestos Inventory Report detailing the results and recommendations of the survey.

1.1.2 Other Hazardous and Regulated Materials

A. Provide total lead in paint concentrations for painted substrates where samples could be collected without undo damage to the finish.

B. Visually inspect for and estimate quantity of the following hazardous and regulated materials:
   a. Polychlorinated biphenyls (PCBs) - in light ballasts.
   b. Mercury - in high voltage lighting, fluorescent light tubes and thermostats.
   c. Lead products (such as lead sheeting).

d. Ozone depleting substances (ODS) – equipment containing Freon or chlorofluorocarbons including refrigerators, freezers, wall-mounted air conditioners and roof top HVAC units.

e. Toxic, flammable or explosive materials - includes pesticides, herbicides, waste oil, fuel, paints, solvents and other hydrocarbon based fluids.

f. Biological contaminants – mould, fecal matter or sharps /drug paraphernalia.

g. Crystalline silica – in glass, gypsum, plaster, stone, ceramic, sand, brick, concrete, etc.

h. Radioactive materials – smoke detectors.

i. Storage tanks – above ground, and below if evident; signs of soil contamination.

1.2 Exclusions to Project Scope

1.2.1 Asbestos

A. The survey is limited to fixed buildings or to buildings included in the proposed project scope of work. Underground systems on the grounds are not part of this survey. Portables or outbuildings are only included where listed in Appendix C.

B. Roofing materials are typically excluded and only assessed where listed in Appendix C and if specifically requested by the client.

C. Ceiling spaces and crawlspaces are only included to the extent that the space is accessible without the need for cutting access openings.

D. Areas classified as confined spaces as defined by WorkSafeBC are not within the scope of the survey unless listed in Appendix C.

E. Areas / applications inaccessible without the use of destructive sampling, including, but not limited to:

a. Possible concealed flooring (beneath newer flooring or carpet applications). Carpets are only lifted to inspect for concealed flooring where it can be done without damaging the carpet.

b. Packing and gasketing materials in heating boiler, HVAC ventilation and air-conditioning systems, domestic hot and cold water and hot water heat piping systems.

c. Mastic and mastic glues associated with weatherproofing.

d. Fire doors.

e. Inaccessible pipes and pipe fittings.

f. Vermiculite within inaccessible concrete block walls or concealed beneath concealing building finishes.

1.2.2 Other Hazardous and Regulated Materials

A. Light ballasts were not removed to confirm presence or absence of PCBs. Identification of potential PCB ballasts is based on the presence of T-12 light fixtures.

1.3 Statement of Understanding

This is an occupied building non-destructive hazardous materials assessment.

- This report does not provide a pre-demolition or pre-renovation Hazardous Materials Report as per OHS Regulation Section 20.112, a Risk Assessment as per Part 6.6(2) or an Exposure Control Plan as per Part 6.3 as outlined in the WorkSafeBC Occupational Health and Safety Regulation. A destructive pre-renovation/demolition hazardous materials assessment is required prior to renovation or demolition activities.

- Materials and their condition are applicable to time of survey; some hazardous materials can be introduced at any time.
- This Inventory is to be updated as required as part of the Asbestos Management Program.

2 NAVIGATING THE INVENTORY REPORT

2.1 REPORT SECTIONS

The various sections in this report provide the information required to comply with an Asbestos Inventory Assessment as defined by WorkSafeBC. Specifically:

- **Report body**:
  - Summary of asbestos-containing materials identified in the building (Executive Summary).
  - Project scope and how to navigate information in the Inventory report.
  - Recommendations for abatement and in-place management of asbestos-containing materials.
- **Appendix A**:
  - Summary of asbestos-containing materials identified in the building.
  - Areas with restricted areas due to asbestos contamination or materials in poor condition.
  - Areas that could not be accessed during the assessment.
- **Appendix B**:
  - Drawing showing most asbestos application and asbestos and lead sample locations. **Note**: Not all asbestos-containing applications can be shown on the drawing.
- **Appendix C**:
  - Room by room Materials Inventory showing locations of all asbestos-containing materials (where extent has been ascertained).
  - Building construction information.
- **Appendix D**:
  - Inventory and description of all building materials identified.
  - Removal priority / risk classification of asbestos-containing materials.
- **Appendix E**:
  - Photos of assessed materials.
- **Appendix F**:
  - Laboratory asbestos analysis results.
- **Appendix G**:
  - Assessment, sampling and analysis methodologies.
- **Appendix H**:
  - Hazardous Waste Regulations and Guidelines.
- **Inventory Budget** - A separate estimated abatement budget is provided to management.

2.2 TARGET AUDIENCE

2.2.1 Asbestos Program Manager

- Develop and maintain an Asbestos Management Program which includes safe work practices as they relate to asbestos containing materials located at the site.

- Create and maintain site specific work procedures (as part of an Exposure Control Plan) with respect to the asbestos containing materials located at the site, including the use of appropriate protective equipment.
- Ensure proper worker training and supervision is maintained as they relate to asbestos containing materials located at the site.
- Ensure a Hazardous and Regulated Materials Assessment is created before work begins on the demolition or salvage of machinery, equipment, buildings or structures as per Part 20.112 Hazardous Materials of the WorkSafeBC Occupational Health and Safety Regulation.

2.2.2 Facilities Manager / Operations Staff

- Maintain an awareness of the location, risk level and management requirements of all asbestos-containing materials in the facility.
- Ensure that the Asbestos Inventory is updated following the removal of any asbestos-containing material.
- Ensure that custodial and other staff are aware of the location and condition of any asbestos-containing material.
- Execute all activities for asbestos applications which are recommended for in-place management, including monitoring of the application's condition for any changes.
- Effect and coordinate all recommended removal activities.
- Ensure that all internal staff and external contractors who may impact asbestos-containing materials in the course of their work carefully review the asbestos Inventory, demonstrate knowledge of ACM in the area to be impacted, and that any *Suspect* (including *Under-sampled*) materials are sampled prior to any disturbance.
- Arrange for the removal or other recommended abatement method of any asbestos-containing material that could be damaged by the work activities carried out by internal staff or external contractors.

2.2.3 Custodial and Administrative Staff

- Maintain an awareness of asbestos-containing applications within the facility, and of any special care or procedure required to handle (or avoid) these applications.
- Immediately report any visible changes or damage to asbestos-containing materials to Operations.

2.2.4 Contractors

- Review this report and be aware of any asbestos-containing materials located in areas where work activities are to be carried out. This awareness extends to all ACM including *Suspect* (including *Under-sampled*), and *Potential* ACM.

2.3 RECOMMENDED WORKFLOWS

2.3.1 *Prior to Maintenance Activities*

Step	Location in Report
1. Locate area(s) to be impacted on the drawings and review for asbestos applications. Identify area/room number from drawing (or door jamb label if present*)	Appendix B (Drawings)
2. Review applications not shown on drawing	Appendix B (Drawings)
3. Verify applications in affected rooms & any applications listed as occurring 'throughout' the facility	Appendix C (Room by Room Materials Inventory)
4. Refer to list of *Suspect* Applications – sample prior to disturbing; collect site specific samples for any materials listed as *Under-sampled*	Appendix A or D (Inventory)
5. Refer to list of *Potential* Applications to determine which additional unconfirmed applications may be present	Appendix A (Materials Summary)
6. Refer to photo of application for precise appearance if necessary	Appendix E (Photos)
7. Update Report after all abatement initiatives	

* Room numbers on drawings DO NOT correspond to actual room numbers.

2.3.2 *Immediate and Priority 1 Removal*

Step	Location in Report
1. Review list of materials recommended for *Immediate* or *Priority 1* removal	Appendix A (Immediate & Priority 1)
2. Identify areas / rooms that contain materials designated for *Immediate* or *Priority 1* removal	Appendix D (Inventory)
3. Locate the affected areas on the drawing	Appendix B (Drawings)
4. Ascertain exact location of application within the area(s)	Appendix C (Room by Room Materials Inventory)
5. Determine the approximate cost for removal/reapplication	(Separate) Budget
6. Update Inventory after all abatement initiatives	

2.3.3 *In-Place Management*

Step	Location in Report
1. Review list of all asbestos-containing materials in the facility	Appendix A (Materials Summary)
2. Identify the removal priority for each material by location	Appendix D (Inventory)
3. Manage removal priority 2 and 3 materials in-place until removal as part of a renovation or demolition project. Identify in-place management recommendations as well as any concerns specific to the application	In Place Management
4. Determine locations and extents of each application to be managed in-place	Appendix B (Drawings), Appendix C (Room by Room Materials Inventory) and Appendix D (Inventory)

2.4 DEFINITIONS

Asbestos-containing building materials (ACM) are listed in this report in one of three categories:

- **Asbestos-containing application**
  - The application has been confirmed as asbestos-containing either by visual inspection or by sample analysis.
- **Suspect asbestos application**
  - The application is confirmed to be present but was not sampled due to either inaccessibility or to prevent damage of building membranes or risk of occupant exposure.
  - Materials that were under-sampled or not representatively sampled (per WorkSafeBC requirements) are listed as *Suspect* applications. All applications listed as *Suspect* must be sampled prior to disturbance.
- **Potential asbestos application**
  - Concealed asbestos-containing building applications that may be present based on the age of the building, but were not observed or identified through this assessment due to inaccessibility, live electrical or mechanical systems, building occupancy or requirement for breaching building membranes.

Friable ACM

- All reference to 'friable' materials in this report includes applications designated as having High or Moderate friability. 'Low' friability is synonymous with 'non-friable'.

2.5 BUILDING MATERIALS CODES

An alphanumeric coding system is used to all identified asbestos, *Suspect* asbestos and non-asbestos containing building materials.

Materials are grouped by type, and each application type is assigned an alpha character (*e.g.* floor tile = H; drywall taping compound = P; ceiling tiles = G, *etc.*).

Application types are then further divided into visually differentiated subcategories or classes where each class is assigned a numeric value. Continuing with the above example, classes of floor tile might include: H1, H2, H3; drywall taping compound: P1, P2, P3; and ceiling tile: G1, G2, G3, *etc.*). Each application subcategory (*e.g.* H1) is given a visual description and is classified as *Asbestos*, *Suspect Asbestos* or *Non-Asbestos*.

This coding system permits the visual differentiation of materials within a type group. Using the flooring example, H1 might represent a 9x9" asbestos-containing red vinyl floor tile, and H2 a 12x12" non-asbestos green vinyl floor tile.

BUILDING MATERIAL IDENTIFICATION CODES				
A - Texture Coating	D - Cement Parging Wall	Fw - Insulated Duct Wrap	J - Cement Board	Kp - Pipe Gasketing
Ac - Acoustic Insulation	Dt - Equipment Parging	G - Ceiling Panel	Jf - Asbestos Furnishings	L - Incandescent Light Pad
Af - Spray-Applied Fireproofing	E - Duct Insulation	H -Vinyl Floor Tile	Jp - Cement Pipe	M - Mastic Glue / Sealant
B - Pipe Insulation	F - Insulating Paper	I - Vinyl Sheet Flooring	Jw - Cement Board Window Panel	Md - Mastic Duct Joint
C - Cement Pipe Fitting	Fb - Insulated Duct Boot	Ip - Paper Backed Flooring	K - Equipment Gasketing	Ms - Mastic Sink Coating
Cp - Pipe Penetration Firestop	Fj - Insulating Paper Joint			

Mw - Window Putty	Qs - Roofing Shingle	V - Vermiculite Wall
N - Pipe Roving/Packing	R - Refractory Cement	Va - Vermiculite Attic
O - Floor Levelling Cement	S - Exterior Wall Stucco	W - Woven Textile
P - Drywall Tape Comp.	Ss - Exterior Soffit Stucco	X - Fire Doors
Pl - Plaster	T - Bldg Thermal Insulation	
Qf - Roofing Felt	U - Friction Materials	

The coding system used for material type groups is provided on each sheet of the Room by Room Materials Inventory (Appendix C), and the codes are defined and described in detail in the Inventory (Appendix D).

Figure 1: Material Codes (Appendix C)

2.6 ASBESTOS CONTAINING MATERIAL IDENTIFICATION SYSTEM (ACMIS)

The ACMIS system was developed by Peak Environmental to ensure the safety of all individuals who may be at risk when working with, or around asbestos containing materials. The system is designed to protect workers from potential exposure to asbestos containing materials as well as to facilitate the management and control of these materials within the facility.

QR code ACMIS stickers are adhered to the top of the door frame of each room/area. The code can be scanned using a smart device and directs the user to one of two Asbestos or Hazardous Materials Inventory reports. There are two separate QR code stickers in the main office (or other area specified by Facilities). One directs the user to the most recent version of this full facility report. The second directs the user to an abbreviated version of this report which has been designed to simplify navigation to information required for day to day maintenance activities. The code stickers in all other areas of the facility open the abbreviated report. This coding system provides user access to the most up-to-date version of the facility report. A password is required to access the reports.

Once the report is open on the smart device, the user can navigate to the individual room/area to find the required information.

It is imperative that prior to carrying out any work within a facility, all maintenance, contractor or trades personnel inspect the Asbestos or Hazardous Materials Inventory Report to determine if ACMs are present within the work area.

Figure 2: ACMIS Door Frame Label

3 RECOMMENDATIONS - ASBESTOS

Removal Priority is determined using an Asbestos Management Index (AMI) score based on a matrix of multiple criteria including: application friability, visibility, condition, accessibility, condition altering factors (*i.e.* vibration), potential for future damage and friability of the asbestos-containing material. The following classification is used in Appendix D:

Priority	AMI Score	Definition
Immediate	49 or greater	Application should be removed immediately (as soon as possible) because there is a distinct possibility of fibre release. The application should be abated or the area restricted (as specified for the particular application) till the time of abatement
1	40 to 48	Remove within one year due to the application's condition, location or the surrounding area's use; damage to the application is probable. The application should be abated or the area restricted (as specified for the particular application) until the time of abatement
2	36 to 39	Remove in conjunction with proposed building renovations or maintenance
3	< 35	Removal is only required prior to renovation or demolition activities

Removal phases are indicated in the "Removal Priority" column in the Inventory (Appendix D).

3.1 REMEDIAL WORK

Moderate and highly friable asbestos applications located in un-controlled areas such as corridors or washrooms, or adjacent to air movement equipment, or found to be in poor or damaged condition, have been prioritized for abatement. Any such applications located in areas where control of access is limited are scheduled for phased removal (Appendix D).

3.1.1 Areas of Restricted Entry

Entry into a restricted area requires appropriate PPE. The ACM designated for Immediate Priority removal must be removed by a certified abatement contractor prior to re-occupancy of the area by unprotected persons.

3.1.2 Immediate and Priority 1 Removal Work

- Poor condition and damaged asbestos containing materials are identified for immediate removal. Due to the deteriorated condition of these asbestos applications there is a potential of exposure to asbestos fibres.
- Concealed asbestos applications in fair or poor condition or in areas with a high potential for future damage are identified as Priority 1 removal applications. These materials should be scheduled for abatement within one year. Priority 1 applications should be managed in place until removed.
- Immediate and Priority 1 applications are listed in Appendices A and D.

3.1.3 Priority 2 and 3 Removal Work

- Non friable asbestos-containing applications in poor condition and friable applications located in un-controlled areas (*e.g.* corridors and washroom areas) are assigned Removal Priority 2 and should be scheduled for abatement within 3-5 years.

- Non friable applications in good condition or applications in fair condition but located in access controlled areas are assigned Removal Priority 3 and can be managed in place until removal in conjunction with planned building maintenance, abatement or renovation activities.
- Applications can become damaged at any time and therefore should be routinely inspected for damage and delamination. Any damaged, delaminating or exposed asbestos materials should be removed, repaired or enclosed to prevent the possible release of asbestos fibres.
- All asbestos-containing materials should be removed prior to any abatement or renovation activities.

3.2 In-Place Management

3.2.1 All Asbestos-Containing Applications

- All applications identified as requiring Immediate or Priority 1 Abatement (as listed in Appendix D) should be scheduled for abatement and in the interim, protected from further damage or degradation which could result in the release of asbestos fibres.
- All asbestos-containing applications remaining within this building should be managed in-place until they are removed. Inspect materials that have a *Removal Risk Class* of 1 at least biannually, and materials with a *Removal Risk Class* of 2 or 3 at least annually, to ensure that their condition has not deteriorated, resulting in the possible release of asbestos fibres. Asbestos applications that are located in areas where space utilization has changed, may have an increased risk for potential future damage, necessitating an increased priority for removal. Any materials showing signs of damage, delamination or exposed asbestos should be abated immediately.
- Maintenance and custodial staff must be made aware of all identified asbestos-containing materials listed in this report, and should be trained in the safe handling of asbestos in accordance with WorkSafeBC regulations and the Exposure Control Plan created for this site, where such plan exists.
- Teachers / administrative staff should be aware of any potential asbestos contact during classroom activities such as presence of vermiculite insulation debris on ceiling tiles or disturbing drywall compound.
- All contractors working in the facility must be aware of any asbestos applications in their area of work.

3.2.2 Specific Asbestos-Containing Applications

All asbestos-containing applications listed below are subject to the management techniques outlined in In-Place Management, in addition to any details provided for the specific application.

3.2.2.1 Friable Applications

Cementitious Pipe Fitting Insulation (pipe elbows, end caps, T junctions, unions etc.)

- Insulated fittings are frequently located in exposed areas where they are prone to damage by storage of adjacent materials, movement of equipment or general building use. Monitor monthly and remove (using a qualified abatement contractor) if damaged or in poor condition.

Drywall Taping Compound

- For facilities where drywall taping compound samples have been confirmed to contain asbestos, all drywall taping compound used should be considered asbestos-containing until confirmed otherwise.

VERMICULITE INSULATION (EXPOSED)

- Do not vacuum or sweep vermiculite particles. Cleaning should be done by a qualified abatement contractor equipped with protective clothing, using a vacuum fitted with a HEPA filtration system.

VERMICULITE INSULATION (IN CONCRETE BLOCK WALLS)

- Refer to Concrete Block Walls for concerns and procedures prior to renovation/demolition.

3.2.2.2 Non-Friable Applications

MASTIC GLUES, SEALANTS AND CAULKING

- Mastics, sealants and caulking can be managed in place until removal for renovation or maintenance purposes unless the application is damaged. Glues may be present under flooring and cannot be sampled until the flooring is removed. Ensure glues are sampled prior to any flooring removal projects.
- Mastic on sink underside should be protected from abrasion by items stored under sink.

3.3 POTENTIAL FOR ASBESTOS FIBRE RELEASE AND WORKER EXPOSURE

Any work that may disturb or potentially disturb asbestos containing or contaminated materials must be performed following the requirements outlined in the District of Mackenzie Exposure Control Plan created for this site. Where such a plan does not exist, site specific work procedures as outlined in Part 6.8 of the OHS Regulation must be created for each instance where there is a potential of disturbing asbestos containing applications.

Highly friable asbestos-containing materials, such as insulating cements, ceiling textures, mechanical insulation, vermiculite insulation and asbestos paper products pose the greatest risk of exposure to building occupants as they are easily crumbled by hand, releasing airborne asbestos fibres when disturbed. Non-friable materials, such as mastics, vinyl flooring and cement asbestos board pose a lower risk as they are not easily crumbled by hand and must be broken or mechanically abraded to release asbestos fibres. An application with low friability can become highly friable when damaged and the condition deteriorates, thereby increasing the risk of exposure to asbestos fibres.

4 RECOMMENDATIONS - OTHER HAZARDOUS AND REGULATED MATERIALS

Lead Based Paint Applications

- Prior to any work involving the disturbance of lead contaminated materials, an Exposure Control Plan with safe work procedures is required to control worker exposure to lead dust and contaminated material.
- Where the total concentration of lead in paint exceeds 100 ppm (mg/kg) on a substrate that is to be removed, further testing for leachable lead concentration (TCLP analysis) is required to determine disposal criteria.

PCB

- Where removal is required, inspect all fluorescent light ballast for manufacturer name and serial number and determine if PCBs are present. Refer to Environment Canada's booklet on *Identification of Lamp Ballasts Containing PCBs* for identification of ballasts containing a PCB capacitor. Collect and containerize confirmed PCB ballasts for disposal at the Swan Hills Treatment Center in Alberta.

Mercury

- Where removal is required to facilitate renovation or demolition activities, collect mercury vapour lighting (high voltage lights and fluorescent light tubes) for vapour recycling. Recycling information is provided on the BC Lamp & Lighting Equipment Recycling website and wall mounted thermostat activation switches should be collected and returned for inclusion in the HRAI Thermostat Recovery Program. Use caution to not break the glass thereby releasing mercury.

Lead Products

- Removed lead products should be recycled at a metal recycling plant.

Ozone Depleting Substances

- Where removal is required, collect all refrigerant devices for refrigerants collection and disposal by a qualified mechanical contractor in accordance with Provincial and Federal regulations. Any refrigerants within HVAC units are to be identified and removed by a qualified mechanical contractor prior to building demolition.

Toxic, Flammable or Explosive Materials

- Where removal is required, collect and containerize labeled and unlabeled material for classification, disposal and or recycling by Tervita or Sumas Environmental Services or other qualified hazardous wastes handler.

Radioactive Materials

- Remove battery from smoke detector for recycling; smoke detector can be disposed of as regular waste. Use caution while handling unit so as not to release radioactive material.

Crystalline Silica-containing Materials

- An Exposure Control Plan for Silica with safe work procedures is required prior to disturbing materials containing silica.

5 REPORT LIMITATIONS

This report is for the purpose of identifying asbestos containing and other hazardous materials located within this building, and assigning specific removal priority associated with building occupant risk of exposure to asbestos materials. While this assessment was conducted with the utmost detail and diligence, there may exist instances where asbestos containing applications are present in the building but not identified through this report. Pursuant to Section 20.112 Hazardous Materials in the OHS Regulation, a project specific detailed pre-renovation assessment for asbestos and other hazardous or regulated materials should be conducted prior to any work of salvage, cutting, damaging or demolishing, in part or in whole, building finishes, components, machinery, equipment, buildings or structures.

Site conditions and building construction may have not permitted the complete inspection of some void spaces. These spaces may contain asbestos applications not identified in this report. Any suspect materials located within void spaces should be inspected and/or tested to determine if they are asbestos-containing.

There was limited inspection of sub-flooring applications located beneath carpeting and vinyl flooring materials, occurring only where lifting the covering flooring / carpet would not result in damage. Furthermore, such sub-flooring inspections were only triggered by anecdotal information from staff regarding the presence of a sub-floor, or where there was a visible difference in flooring levels that prompted further investigation. Where a second layer of vinyl flooring material was discovered, samples were collected to determine their asbestos content. No inspection of sub-flooring applications was performed once a structural member was discovered (i.e. wood or concrete). There is a possibility that subsequent asbestos flooring applications, not identified in this report, may be located beneath carpeting, false floors or a covering layer of vinyl flooring. Any suspect materials sandwiched between multiple flooring layers should be inspected or tested to determine if they are asbestos-containing.

This report forms the *Inventory* portion of the Asbestos Management Program, and is not an asbestos abatement risk assessment nor can it be used as an asbestos abatement Exposure Control Plan. The report is specifically limited to the identification of asbestos containing materials and to the creation of a recommended abatement schedule. A site or project specific risk assessment and asbestos exposure control plan must be prepared prior to the removal or disturbance of asbestos containing materials identified in this report.

Any quantities listed in these documents are estimates only. Peak Environmental Ltd. accepts no liability for inaccurate or misleading quantities listed in these documents.

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File: Rec Centre Hazardous Materials Inventory Report

APPENDIX A
HAZARDOUS AND REGULATED MATERIALS SUMMARY

ASBESTOS-CONTAINING APPLICATIONS

The following asbestos applications have been identified within the Mackenzie and District Arena. The attached asbestos location drawings and spreadsheets should be reviewed for the ACM locations within this facility (to the extent possible).

APPLICATIONS CONTAINING ASBESTOS:

CODE	CONFIRMED ACM DESCRIPTION
C1	Cementitious insulation on mechanical pipe fittings
M2	Cream mastic adhering arena metal cladding
Md1	Red duct joint sealant
Mw1	Black sealant between window frame and pane
P1	White drywall tape compound (1968 construction era)
V1	Vermiculite infill insulation (concrete block walls)
W2	White fibrous vibration dampener

APPLICATIONS WITH IMMEDIATE OR PRIORITY 1 ABATEMENT CODE:

Applications in poor condition in high risk areas that should be removed as soon as possible.

CODE	APPLICATIONS FOR IMMEDIATE OR PRIORITY 1 REMOVAL
V1	Vermiculite debris on floors, contents and/or in ceiling spaces
W2	Woven vibration dampener

SUSPECT APPLICATIONS:

Applications that are present but have not been analyzed to confirm asbestos content. All *Suspect* applications must be sampled prior to disturbance.

CODE	SUSPECT ACM DESCRIPTION
Kp1	Pipe flange gasket on mechanical piping
Qs2	Burgundy torch down asphalt shingle
Y1	Arc chutes within transformer

POTENTIAL ASBESTOS APPLICATIONS:

Concealed asbestos-containing building materials may be present but could not be identified due to inaccessibility, live electrical or mechanical systems, building occupancy, or the requirement for breaching building membranes. Based on the building era, the following materials may be present and if encountered, should be sampled and analyzed for asbestos content prior to disturbance**:**

Glues and adhesives (eg. under flooring, glue up ceiling tile)	
Flooring layers	Pipe flange gaskets
Floor leveling compound	Pipe roving in sanitary pipe bells and spigots
Tar and gravel roofing, roof felts, tar patching compounds and membranes	
Vermiculite insulation which may be within concrete block walls concealed beneath covering or enclosing materials or within inaccessible wall cavities or attic space areas	

AREAS OF RESTRICTED ENTRY:

AREA #	HAZARD / RISK
108C	Exposed vermiculite debris within the ceiling space must not be disturbed prior to remediation by a qualified contractor. See Appendix B: Drawings for approximate location.
108J	Exposed vermiculite debris within the ceiling space must not be disturbed prior to remediation by a qualified contractor. See Appendix B: Drawings for approximate location.
113	Exposed vermiculite debris within the ceiling space must not be disturbed prior to remediation by a qualified contractor. See Appendix B: Drawings for approximate location.
124A	Exposed vermiculite debris must not be disturbed prior to remediation by a qualified contractor. See Appendix B: Drawings for approximate location.

LEAD-BASED PAINT SAMPLING AND RESULTS

LEAD IN PAINT Description and Sample Location	Application Location(s)	Quantity	Sample No.	Lead Concentration
Method: ASTM E1645* / EPA 6020B - Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS) (RL: 80 mg/kg)				Units mg/kg
Grey on blue on white on wood	Painted wood - score booth		6362-ICP-01	939
White on wood	Painted wood - score booth		6362-ICP-02	1260
Grey on red on concrete	Painted concrete		6362-ICP-03	898
Grey on arena metal cladding - Maintenance Room 100Q	Representative of all grey painted arena metal cladding throughout	5000-10000Ft2	6391B-ICP-01	727
White on wood - Zamboni Room 100P	Representative of all white painted wood throughout 1968	5000-10000Ft2	6391B-ICP-02	<80
Grey with blue and burgundy on concrete - Laundry 125	Representative of all grey painted concrete throughout 1982	500-1000Ft2	6391B-ICP-03	<80
White on drywall (P3) 1982 - Mechanical Room 124	Representative of all painted drywall throughout 1982	5000-10000Ft2	6391B-ICP-04	<80
2"2" brown ceramic tile - Pool Area 121	Representative of all 2" ceramic tiles throughout Pool Area 121	4000-5000 Ft2	6391B-ICP-05	<80
White on drywall (P4) 1992 - Men's Change Room 132	Representative of all painted drywall throughout 1992	4000-5000 Ft2	6391B-ICP-06	<80
Method: EPA 200.2* / EPA 6020B TCLP Leachable Metals in Solid (RL: 0.002 mg/L)				Units mg/L
Waste Stream - Various Paints	Representative of all painted applications throughout the scope of work area		6362-TCLP-01	0.42 mg/L

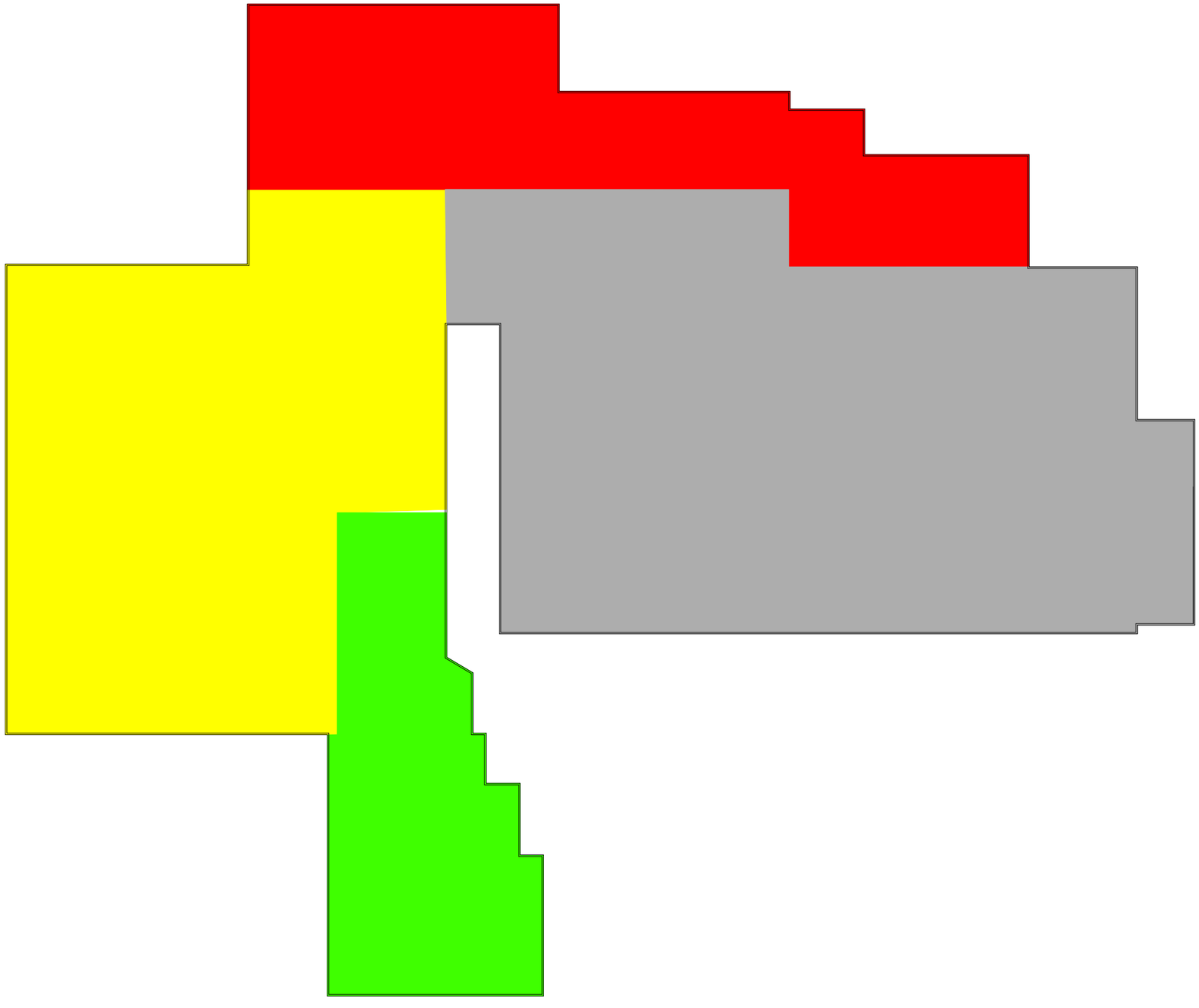
OTHER HAZARDOUS AND REGULATED MATERIALS

LEAD CONTAINING MATERIALS	QUANTITY
Roof jacks / flashing	5
Solder on copper piping	Not Present
PCB	**QUANTITY**
Potential PCB containing fluorescent light ballasts	Present
Potential PCB containing transformers	2
MERCURY	**QUANTITY**
Mercury containing wall mounted thermostats	1
Mercury containing fluorescent lighting (tubes, CFC, high voltage)	Present
TOXIC FLAMMABLE EXPLOSIVE MATERIALS	**QUANTITY**
Paints (stored)	Present
Oils/solvents/fuel	Not Present
Chemicals / Cleaners	Present
BIOLOGICAL CONTAMINANTS	**QUANTITY**
Mould contamination	Not Present
Rodent Contamination	Not Present
Bird/Bat Contamination	Not Present
Biological Hazards	Not Present
FUEL/OIL STORAGE TANKS	**QUANTITY**
Above Ground Storage Tank(s)	Not Present
Evidence of Contamination	Not Present
ODS (Ozone Depleting Substances)	**QUANTITY**
Wall mounted air conditioners	Not Present
Refrigerators/Deep Freezers	Present and in use
Roof top HVAC	Present
RADIOACTIVE MATERIALS	**QUANTITY**
Smoke Detectors	Present

COMMON SILICA CONTAINING APPLICATIONS	Present /Not Present	COMMON SILICA CONTAINING APPLICATIONS	Present /Not Present
Asphalt (driveway or walkway)	Not Present	Glass	Present
Brick and associated mortar	Not Present	Gypsum board	Present
Ceiling tiles	Present	Plaster	Not Present
Concrete (slabs, footings, retaining walls)	Present	Stone (exterior, decorative, counter-top)	Not Present
Concrete Block (CMU) & associated mortar	Present	Tile (ceramic, slate, porcelain & grout/mortar)	Present
Drywall taping compound	Present	Topsoil and bedding sand	Not Present
Total Estimated Quantity of Crystalline Silica Containing Materials:			<10000

APPENDIX B
ASBESTOS LOCATION DRAWINGS

DRAWING NORTH



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Project No.: 6391B

Drawing:

MACKENZIE AND DISTRICT ARENA

400 Skeena Drive
Mackenzie, BC

Title:

BUILDING CONSTRUCTION ERAS

Owner:

MACKENZIE
BRITISH COLUMBIA

Legend:

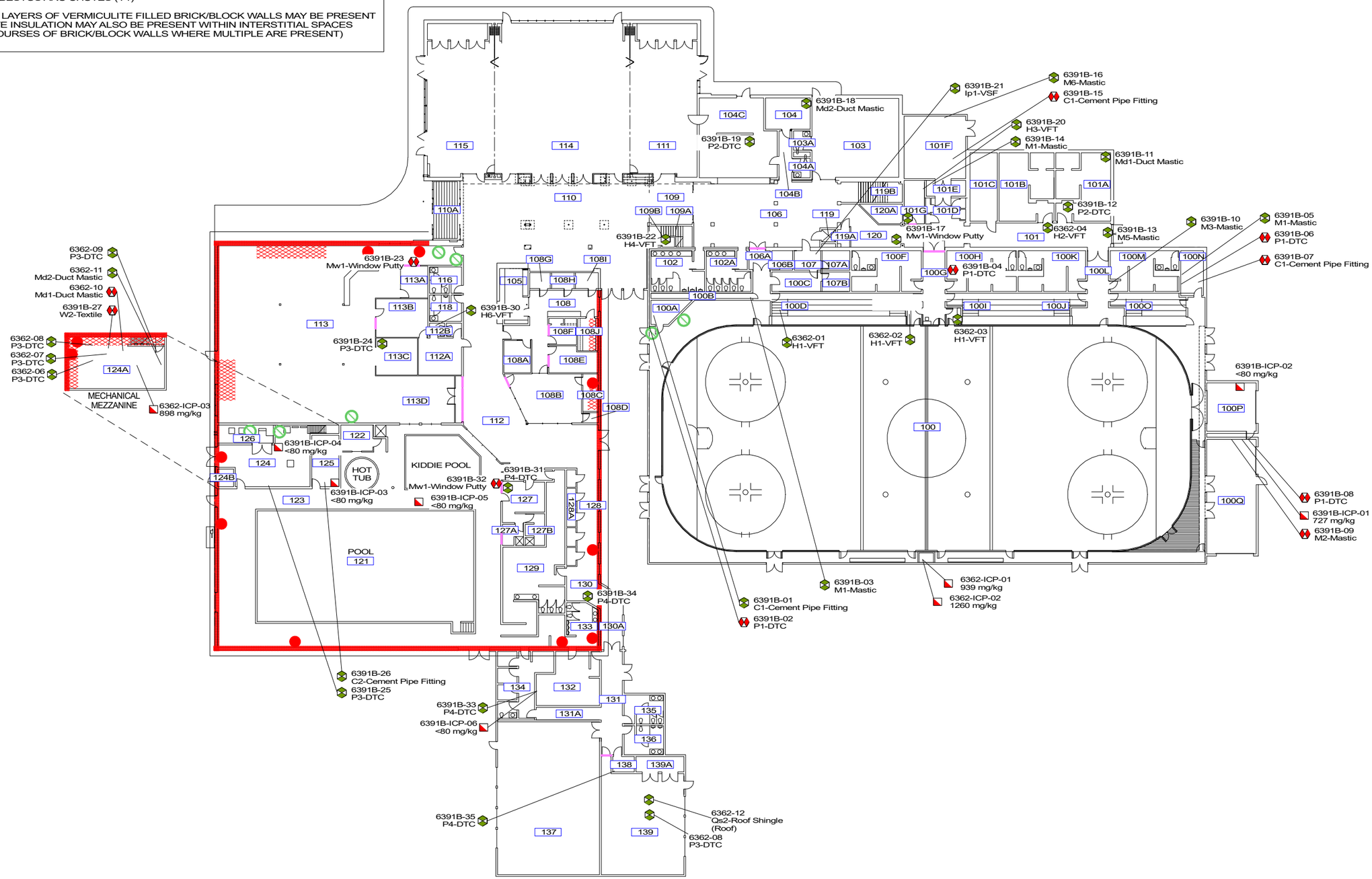
- 1968 CONSTRUCTION
- 1982 CONSTRUCTION
- 1992 CONSTRUCTION
- 2012 CONSTRUCTION

Date: 09.06.2024
Revision:
Scale: NTS
Drawn by: N. Nuszdorfer

DRAWING NUMBER
6391B ASB 1-3

ASBESTOS APPLICATIONS NOT SHOWN ON DRAWING:
CEMENTITIOUS PIPE FITTING INSULATION (C1)
DRYWALL TAPING COMPOUND (P1)
MASTIC (M2)
DUCT MASTIC (Md1)
WOVEN TEXTILE (W2)
SUSPECT ASBESTOS PIPE FLANGE GASKET (Kp1)
SUSPECT ASBESTOS ROOFING MATERIALS (Qs2)
SUSPECT ASBESTOS ARC CHUTES (Y1)
CONCEALED LAYERS OF VERMICULITE FILLED BRICK/BLOCK WALLS MAY BE PRESENT (VERMICULITE INSULATION MAY ALSO BE PRESENT WITHIN INTERSTITIAL SPACES BETWEEN COURSES OF BRICK/BLOCK WALLS WHERE MULTIPLE ARE PRESENT)

DRAWING NORTH



0 5 10 15 20m
DRAWING SCALE

PEAK ENVIRONMENTAL LTD.
951 Pinewood Place
Kelowna, BC V1Z 3G7
1-877-518-PEAK (7325)
info@peakenvironmental.ca

Project No.: 6391B

Drawing:

MACKENZIE AND DISTRICT ARENA
MAIN AND MEZZANINE LEVELS
400 Skeena Drive
Mackenzie, BC

Title:

ASBESTOS CONTAINING BUILDING MATERIAL and LEAD BASED PAINT SAMPLE LOCATIONS

Owner:

MACKENZIE BRITISH COLUMBIA

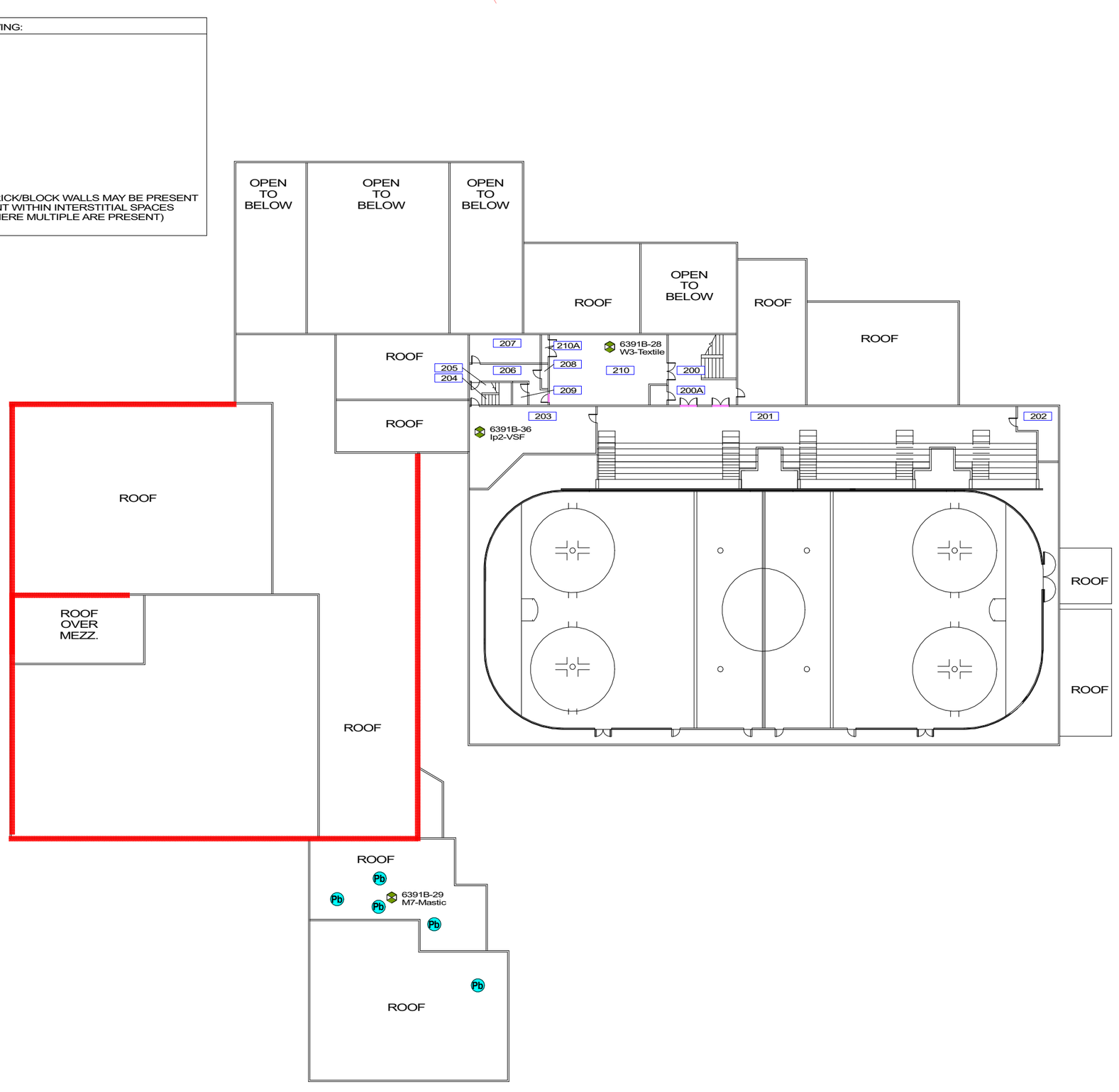
Legend:

- ASBESTOS WINDOW PUTTY
- VERMICULITE WALL INSULATION
- EXPOSED VERMICULITE DEBRIS
- CORE HOLE LOCATION WITH VERMICULITE
- CORE HOLE LOCATION WITH NO VERMICULITE
- ASBESTOS BULK SAMPLE NUMBER AND MATERIAL
- NON-ASBESTOS BULK SAMPLE NUMBER AND MATERIAL
- LEAD BASED PAINT SAMPLE NUMBER AND CONCENTRATION

Date: 09.06.2024
Revision:
Scale: 1:450
Drawn by: K. LANE

DRAWING NUMBER
6391B ASB 2-3

ASBESTOS APPLICATIONS NOT SHOWN ON DRAWING:
CEMENT PIPE FITTING (C1)
DRYWALL TAPING COMPOUND (P1)
MASTIC (M2)
DUCT MASTIC (Md1)
WOVEN TEXTILE (W2)
SUSPECT ASBESTOS PIPE FLANGE GASKET (Kp1)
SUSPECT ASBESTOS ROOFING MATERIALS (Qs2)
SUSPECT ASBESTOS ARC CHUTES (Y1)
CONCEALED LAYERS OF VERMICULITE FILLED BRICK/BLOCK WALLS MAY BE PRESENT (VERMICULITE INSULATION MAY ALSO BE PRESENT WITHIN INTERSTITIAL SPACES BETWEEN COURSES OF BRICK/BLOCK WALLS WHERE MULTIPLE ARE PRESENT)



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Project No.: 6391B

Drawing:

MACKENZIE AND DISTRICT ARENA

UPPER LEVEL

400 Skeena Drive
Mackenzie, BC

Title:

ASBESTOS CONTAINING BUILDING MATERIAL and LEAD BASED PAINT SAMPLE LOCATIONS

Owner:

MACKENZIE BRITISH COLUMBIA

Legend:

- VERMICULITE WALL INSULATION
- ASBESTOS WINDOW PUTTY
- NON-ASBESTOS BULK SAMPLE NUMBER AND MATERIAL
- Pb LEAD ROOF JACK

Date: 09.06.2024
Revision:
Scale: 1:450
Drawn by: K. LANE

DRAWING NUMBER

6391B ASB 3-3

0 5 10 15 20m
DRAWING SCALE

APPENDIX C
ROOM BY ROOM MATERIALS INVENTORY
AND
BUILDING CONSTRUCTION INFORMATION

Building Type: Commercial Building Name: Mackenzie and District Arena Date: 08-18-2024 (mm-dd-yyyy) ANCILLARY INFORMATION

Abbrev: TB-Tack Board / GWB-Gypsum Wall Board / BW-Brick Wall / CBW-Concrete Block Wall / Car-Carpet / Conc-Concrete / Str-Structure / Wd-Wood / FRP-Fibreglass Reinforced Plastic

Descriptors: (at)-concealed above T-bar ceiling / (af)-concealed above fixed ceiling / (uw)-concealed behind wall paper / (*) - presumed present; area or application not accessible

Height: (H) high - application above 8'; (L) low or blank - application below 8' **Condition**: (p) poor / (f) fair (default good condition) **Quantities** are shown in parentheses

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Yellow highlighting indicates asbestos applications

BLUE highlighting indicates *Suspect* asbestos application

BUILDING MATERIAL IDENTIFICATION CODES

A - Texture Coating	D - Cement Parging Wall	Fw - Insulated Duct Wrap	J - Cement Board	Kp - Pipe Gasketing	Mw - Window Putty	Qs - Roofing Shingle	V - Vermiculite Wall
Ac - Acoustic Insulation	Dt - Equipment Parging	G - Ceiling Panel	Jf - Asbestos Furnishings	L - Incandescent Light Pad	N - Pipe Roving/Packing	R - Refractory Cement	Va - Vermiculite Attic
Af - Spray-Applied Fireproofing	E - Duct Insulation	H -Vinyl Floor Tile	Jp - Cement Pipe	M - Mastic Glue / Sealant	O - Floor Levelling Cement	S - Exterior Wall Stucco	W - Woven Textile
B - Pipe Insulation	F - Insulating Paper	I - Vinyl Sheet Flooring	Jw - Cement Board Window Panel	Md - Mastic Duct Joint	P - Drywall Tape Comp.	Ss - Exterior Soffit Stucco	X - Fire Doors
C - Cement Pipe Fitting	Fb - Insulated Duct Boot	Ip - Paper Backed Flooring	K - Equipment Gasketing	Ms - Mastic Sink Coating	Pl - Plaster	T - Bldg Thermal Insulation	
Cp - Pipe Penetration Firestop	Fj - Insulating Paper Joint				Qf - Roofing Felt	U - Friction Materials	

Area No.	Room Name	Top Visible Floor Layer	Second Floor Layer	Third Floor Layer	North Wall	East Wall	South Wall	West Wall	First Ceiling or Roof	Second Ceiling	Third Ceiling	Mech. Pipe	Pipe Fitting	Mech. Duct	Other	Quantity
	Exterior				Metal/ Conc/ Brick/ Wd	Metal/ Conc/ Brick	Metal/ Metal on CBW-**V1**/ Conc	Metal/ Metal on CBW-**V1**/ Conc	Qs1/ **Qs2**						W1/ W3(2)/ M7(4)	
	MAIN LEVEL															
	Throughout Applications											B1/ M1		E1	T1	
100	Arena	Conc/ Sand			CBW/ Wd Bleachers	Wd/ Af1 on Metal	Wd/ Af1 on Metal	Wd/ Af1 on Metal	Metal	Af1 on Q-deck			C1(2,h)	W1		
100A	Skate Shop	H2	Conc		CBW	CBW	CBW	CBW/ **P1**	P1							
100B	Pipe Chase	Conc			CBW	CBW	CBW	CBW	GWB			M1				
100C	Refs Change Room	H1	Conc		CBW/ Wd/ **P1**	P1	CBW	CBW	P1							
100D	Under Bleacher Storage	Conc			CBW	GWB	GWB	CBW	GWB							
100E	Under Bleacher Storage	Conc			CBW	CBW	CBW/ GWB	GWB	GWB							
100F	Changing Room 1	H1	Conc		CBW	CBW	CBW	CBW	P1							
100G	Arena Vestibule	Conc			CBW	CBW	-	CBW	**P1**/ Wd						Mw1	
100H	Changing Room 2	H1	Conc		CBW	CBW	CBW	CBW	P1							

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B - Pipe Insulation	F - Insulating Paper	I - Vinyl Sheet Flooring	Jw - Cement Board Window Panel	Md - Mastic Duct Joint	P - Drywall Tape Comp.	Ss - Exterior Soffit Stucco	X - Fire Doors
C - Cement Pipe Fitting	Fb - Insulated Duct Boot	Ip - Paper Backed Flooring	K - Equipment Gasketing	Ms - Mastic Sink Coating	Pl - Plaster	T - Bldg Thermal Insulation	
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Area No.	Room Name	Top Visible Floor Layer	Second Floor Layer	Third Floor Layer	North Wall	East Wall	South Wall	West Wall	First Ceiling or Roof	Second Ceiling	Third Ceiling	Mech. Pipe	Pipe Fitting	Mech. Duct	Other	Quantity
	MAIN LEVEL															
100I	Under Bleacher Storage	Conc			CBW	GWB	CBW/ GWB	GWB	GWB							
100J	Under Bleacher Storage	Conc			CBW	CBW	CBW/ GWB	GWB	GWB							
100K	Changing Room 3	H1	Conc		CBW	CBW	CBW	CBW	P1							
100L	Arena Vestibule	H1	Conc		CBW	CBW	-	CBW	**P1**/ Wd							
100M	Changing Room 4	H1	Conc		CBW	CBW	CBW	CBW	P1							
100N	Mechanical Room	Conc			CBW	CBW	CBW	CBW	P1				C1(6,h)		K1	
100O	Under Bleacher Storage	Conc			CBW	CBW	CBW/ GWB	GWB	GWB							
100P	Zamboni Room	Conc			Wd	Wd	Wd	Wd	Wd							
100Q	Maintenance Room	Conc			Metal	P1	P1	Metal	P1						M2	
101	Corridor	H2	Conc		CBW	CBW	Metal Cladding	CBW	Q-deck						M5/ **Mw1**	
101A	Change Room 6	H2	Conc		CBW	CBW	CBW	CBW/ P2	P2/ Q-deck						Md3	
101B	Change Room 5	H2	Conc		CBW	CBW/ P2	CBW	CBW	P2/ Q-deck						Md3	
101C	Storage	Conc			CBW	CBW	CBW	CBW	Q-deck						Md3/ M4	

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Af - Spray-Applied Fireproofing	E - Duct Insulation	H -Vinyl Floor Tile	Jp - Cement Pipe	M - Mastic Glue / Sealant	O - Floor Levelling Cement	S - Exterior Wall Stucco	W - Woven Textile
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Area No.	Room Name	Top Visible Floor Layer	Second Floor Layer	Third Floor Layer	North Wall	East Wall	South Wall	West Wall	First Ceiling or Roof	Second Ceiling	Third Ceiling	Mech. Pipe	Pipe Fitting	Mech. Duct	Other	Quantity
	MAIN LEVEL															
101D	Vestibule	H2	Conc		P2	P2	P2	Wd	G1						Mw1	
101E	Refrigeration Vestibule	H2	Conc		CBW	CBW	P2	P2	Af1 on Q-deck			M1				
101F	Refrigeration Plant	Conc			CBW	CBW	CBW	CBW	Af1 on Q-deck			B2	**Kp 1**/ Kp2		**C1**(4,h)/ M6(3)/ **Y1**	
101G	Minor Hockey	Conc/ H3	Conc		CBW	GWB	GWB	CBW	G1	Q-deck		M1,at			Mw1	
102	Washroom	H2	Conc		CBW	CBW	Ceramic on CBW	CBW	**P1**(80)/P2							
102A	Washroom	H2	Conc		CBW	CBW	Ceramic on CBW	CBW	P1							
103	Squash Court Room	I1/ Hardwood			CBW	Wd	Wd/ Wd on CBW	CBW	Q-deck							
103A	Storage	H2			CBW	CBW/ Glass	P2	CBW	P2							
104	Custodial	Conc			CBW	CBW	CBW	CBW	P2/ Q-deck					Md2	W1	
104A	Storage	H2			P2	CBW	P2	CBW	P2							
104B	Corridor	H2			CBW	CBW/ P2	-	CBW/ P2	G1	Q-deck						

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	MAIN LEVEL															
104C	Kitchen	I2			CBW/ P2	CBW/ Ceramic on CBW	CBW/ P2/ Wd	CBW	G2	Q-deck						
105	Reception	Carpet	Conc		P3	P3	P3	P3	G1	Q-deck		B1(at)		E1/ **Md1*** (at)		
106	Foyer	H2	Conc		P2	CBW	P1	P1	G1	Q-deck					Mw1	
106A	Arena Vestibule	H1	Conc		CBW	CBW	P1	CBW	P1						Mw1	
106B	Fan Room	Conc			CBW	CBW	CBW	CBW	P1				C1(2,h)		W1/ K2	
107	Staff Office	Ip 1	Conc		CBW	P1	**P1**/ Wd	CBW/ Wd on CBW	P1							
107A	Custodial	Ip 1	Conc		CBW	CBW	CBW	P1	P1							
107B	Refs Washroom	H1	Conc		CBW	CBW	CBW	P1	P1							
108	Corridor	Carpet	Conc		P3	P3 on CBW-**V1**	P3	P3	G1	Q-deck		B1(at)		E1/ **Md1*** (at)	Mw1	
108A	Office	Carpet	Conc		P3	P3	P3	P3	G1	Q-deck		B1(at)		E1/ **Md1*** (at)		

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	MAIN LEVEL															
108B	Boardroom	Carpet	Conc		P3	P3	P3	P3	G1	Q-deck		B1(at)		E1/ **Md1*** (at)	Mw1	
108C	Office	Carpet	Conc		P3	P2 on CBW-**V1**	P3	P3	G1	Q-deck		B1(at)		E1/ **Md1*** (at)	V1 debris (at)	
108D	Storage	Carpet	Conc		P3	P3 on CBW-**V1**	CBW	P3	G1	Q-deck		B1(at)		E1/ **Md1*** (at)		
108E	Office	Carpet	Conc		P3	P3 on CBW-**V1**	P3	P3	G1	Q-deck		B1(at)		E1/ **Md1*** (at)	Mw1	
108F	Office	Carpet	Conc		P3	P3	P3	P3	G1	Q-deck		B1(at)		E1/ **Md1*** (at)	Mw1	
108G	Office	Carpet	Conc		P3	P3	P3	P3	G1	Q-deck		B1(at)		E1/ **Md1*** (at)		
108H	Office	Carpet	Conc		P3	P3	P3	P3	G1	Q-deck		B1(at)		E1/ **Md1*** (at)		

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	MAIN LEVEL															
108I	Office	Carpet	Conc		P3	P3	P3	P3	G1	Q-deck		B1(at)		E1/ **Md1*** (at)		
108J	Copy Room	Carpet	Conc		P3	P2 on CBW-**V1**	P3	P3	G1	Q-deck		B1(at)		E1/ **Md1*** (at)	V1 debris (at)	
109	Corridor	I1	Conc		P3	P3	P1	-	Wd	Q-deck						
109A	Stairwell	Conc			P1	P1	P1	P1	G1	Q-deck						
109B	Under Stair Storage	H3	Conc		Wd	P1	P1	Wd	P1							
110	Lobby	I1	Conc		P3	P3	P3	P3	Wd	Q-deck						
110A	Entry Vestibule	I1/ Grill			Brick	Metal/ Glass	Wd	Metal/ Glass	P3							
110B	Corridor	I1	Conc		P3	P3	-	CBW	P3/ G1	Q-deck						
111	Multi-Purpose 3	I3			CBW	P2/ CBW	P2/ CBW	P2/ Sound Partition	Q-deck							
112	Corridor	I1	Conc		P3	P3 on CBW-**V1**	CBW/ P3	CBW/ P3	G1/ Wd	Q-deck				E1/ **Md1*** (at)	Mw1	
112A	Staff Room	Ceramic	*Conc		CBW	CBW	P3	P3	G1	Q-deck				E1/ **Md1*** (at)		

Building Type: Commercial Building Name: Mackenzie and District Arena Date: 08-18-2024 (mm-dd-yyyy) ANCILLARY INFORMATION

Abbrev: TB-Tack Board / GWB-Gypsum Wall Board / BW-Brick Wall / CBW-Concrete Block Wall / Car-Carpet / Conc-Concrete / Str-Structure / Wd-Wood / FRP-Fibreglass Reinforced Plastic
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BUILDING MATERIAL IDENTIFICATION CODES

A - Texture Coating	D - Cement Parging Wall	Fw - Insulated Duct Wrap	J - Cement Board	Kp - Pipe Gasketing	Mw - Window Putty	Qs - Roofing Shingle	V - Vermiculite Wall
Ac - Acoustic Insulation	Dt - Equipment Parging	G - Ceiling Panel	Jf - Asbestos Furnishings	L - Incandescent Light Pad	N - Pipe Roving/Packing	R - Refractory Cement	Va - Vermiculite Attic
Af - Spray-Applied Fireproofing	E - Duct Insulation	H -Vinyl Floor Tile	Jp - Cement Pipe	M - Mastic Glue / Sealant	O - Floor Levelling Cement	S - Exterior Wall Stucco	W - Woven Textile
B - Pipe Insulation	F - Insulating Paper	I - Vinyl Sheet Flooring	Jw - Cement Board Window Panel	Md - Mastic Duct Joint	P - Drywall Tape Comp.	Ss - Exterior Soffit Stucco	X - Fire Doors
C - Cement Pipe Fitting	Fb - Insulated Duct Boot	Ip - Paper Backed Flooring	K - Equipment Gasketing	Ms - Mastic Sink Coating	Pl - Plaster	T - Bldg Thermal Insulation	
Cp - Pipe Penetration Firestop	Fj - Insulating Paper Joint				Qf - Roofing Felt	U - Friction Materials	

Area No.	Room Name	Top Visible Floor Layer	Second Floor Layer	Third Floor Layer	North Wall	East Wall	South Wall	West Wall	First Ceiling or Roof	Second Ceiling	Third Ceiling	Mech. Pipe	Pipe Fitting	Mech. Duct	Other	Quantity
	MAIN LEVEL															
112B	Staff Mud Room	H6	*Conc		CBW	CBW	CBW	CBW	G1	Q-deck				E1/ **Md1*** (at)		
113	Library	Carpet/ H5	Conc		CBW-V1	P3	CBW	CBW-V1	G1	Q-deck		B1(at)		E1/ **Md1*** (at)	Mw1/V1 debris (at)	
113A	Office	H5	Conc		P3	CBW	P3	P3	G1	Q-deck		B1(at)		E1/ **Md1*** (at)	Mw1	
113B	Staff Room	H5	Conc		P3	CBW	P3	P3	G1	Q-deck		B1(at)		E1/ **Md1*** (at)	Mw1	
113C	Internet Lounge	Carpet	Conc		P3	P3	P3	P3	G1	Q-deck		B1(at)		E1/ **Md1*** (at)		
113D	Workspace	Carpet	Conc		P3	P3	CBW	-	G1	Q-deck		B1(at)		E1/ **Md1*** (at)	Mw1	
114	Multi-Purpose 2	I3			CBW/ Wd/ Glass	P2/ Sound Partition	P2	P2/ Sound Partition	Q-deck							
115	Multi-Purpose 1	I3			P2	P2/ Sound Partition	P2/ CBW	P2/ CBW	Q-deck							
116	Washroom	Ceramic	Conc		CBW	CBW	CBW	CBW	G1	Q-deck		B1(at)		E1/ **Md1***		

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	MAIN LEVEL															
117	Stairwell				P1	P1	P1	P1	G1	Q-deck						
118	Washroom	Ceramic	Conc		CBW	CBW	CBW	CBW	G1	Q-deck		B1(at)		E1/ **Md1***		
119*	Elevator	Metal			Metal	Metal	Metal	Metal	Metal							
119A*	Elevator Machine Room	Conc			P2	P2	P1	CBW	Q-deck							
119B	Stairwell	H2			P1	P1	P1	P1	G1	Q-deck						
120	Corridor	H2			P1	-	P1	P1	G1	Q-deck						
120A	Under Stair Storage	Conc			P1	CBW	P1	**P1**/ Metal	P1							
121	Pool Area	Ceramic	Conc		CBW/ GWB	CBW/ GWB/ Ceramic on CBW	CBW-V1	CBW-V1	Q-deck			B1			Mw1	
122	Sauna	Ceramic	Conc		CBW/ Ceramic on CBW/ Wd	CBW/ Ceramic on CBW	CBW	CBW	Wd							
123	NOT USED															
124	Mechanical Room	Conc			CBW	CBW	CBW	CBW-V1	P3			B1	C2(3,h)/ Kp2/ Kp3	Md2		

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	MAIN LEVEL															
124A	Mech. Rm. Mezz	Conc			CBW-V1	CBW	CBW	CBW-V1	P3			B1		E1/ **Md1**/ Md2	**V1** debris/ W1/ **W2**(1)	
124B	Hydrochloric Acid Room	Conc			CBW	CBW	CBW	CBW-V1	P3							
125	Laundry	Conc			CBW	CBW	CBW	CBW	P3							
126	Boiler Room	Conc			CBW	P3	P3	CBW-V1	P3			B1	Kp2/ Kp3	E1	K3(2)	
127	Staff Office	Ceramic	Conc		CBW/ P4	CBW	CBW	CBW/ P4	P4						Mw1	
127A	Shower	Ceramic	Conc		CBW	CBW	CBW	CBW	P4							
127B	Shower	Ceramic	Conc		CBW	CBW	CBW	CBW	P4							
128	Corridor	I1	*Conc		-	CBW-V1	-	P4	P4							
128A	Storage	Ceramic	Conc		P4	P4	P4	CBW	P4							
129	Women's Change Room	Ceramic	Conc		CBW	CBW	CBW-V1	CBW	P4							
130	Corridor	I4	*Conc		P4	CBW-V1	CBW	CBW	P4							
130A	Corridor	I1	*Conc		CBW	CBW	P4/ CBW	CBW-V1	G1	P4		B1		E1		
131	Corridor	Ceramic	Conc		CBW	P4	P4	P4/ CBW	G1	P4		B1		E1	Mw1	
131A	Corridor	Ceramic	Conc		CBW	-	CBW	CBW	G1	P4		B1		E1		

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	MAIN LEVEL															
132	Men's Change Room	Ceramic	Conc		CBW-V1	CBW	CBW	CBW	P4							
133	Men's Washroom/ Shower	Ceramic	Conc		CBW	CBW-V1	CBW-V1	CBW	P4							
134	Family Change Room	Ceramic	Conc		CBW-V1	CBW	CBW	CBW	P4							
135	Women's Washroom	I5	Conc		P4/ Ceramic on P4	P4/ Ceramic on P4	P4/ Ceramic on P4	P4/ Ceramic on P4	G1	P4		B1		E1		
136	Men's Washroom	I5	Conc		P4/ Ceramic on P4	P4/ Ceramic on P4	P4/ Ceramic on P4	P4/ Ceramic on P4	G1	P4		B1		E1		
137	Fitness	H7	Conc		CBW	P4/ Wd on P4	P4/ Wd on P4	P4/ Wd on P4	G1	P4		B1		E1		
138	Custodial	Conc			P4	P4	P4	P4	P4							
139	Gym	H8	Conc		P4	P4	P4	P4	G1	P4					Mw1	
139A	Gym Storage	I1	Conc		P4	P4	P4	P4	P4					Md2		

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	UPPER LEVEL															
	Throughout Applications											B1/ M1		E1/ **Md1**/ Md2	T1	
200	Foyer	Conc			P1	P1	P1	P1	G1	Q-deck					Mw1	
200A	Elevator	Metal			Metal	Metal	Metal	Metal	Metal							
201	Upper Viewing Area	Wd			Wd	Wd	Metal Railing	Wd	Metal	Af1 on Q-deck					Mw1	
202	Storage	Wd			Wd	Wd	Str	Str	Metal	Af1 on Q-deck						
203	Multi-Purpose Room	Ip2	Wd		P1	P1	Wd/ **P1**	P1	G1	Metal	Af1 on Q-deck					
204	Stairwell Corridor	Carpet	*Wd		P1	P1	P1	P1	G1	Q-deck						
205	Stairwell	Wd			P1	P1	P1	P1	G1	Q-deck						
206	Corridor	H9	Conc		P1	P1	P1	P1	G1	Q-deck					Mw1	
207	Office/ Storage	H9	Conc		P1	P1	P1	P1	G1	Q-deck						
208	Storage	H9	Conc		P1	P1	P1	P1	G1	Q-deck						
209	Washroom	Ip2	Conc		P1	P1	P1	P1	G1	Q-deck						

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	UPPER LEVEL															
210	Multi-Purpose Room	Ip2	Conc		GWB	GWB/ CBW	GWB	GWB	G1	Q-deck					Mw1	
210A	Closet	H9	Conc		P1	P1	P1	P1	G1	Q-deck						

PEAK ENVIRONMENTAL LTD.

BUILDING CONSTRUCTION
SURVEY INFORMATION SHEET

SURVEY INFORMATION

Surveyor: DV Date: 08-18-2024 Building: Mackenzie and District Arena

Survey Type:		Full Hazmat		Limited Scope		Pre-Demo		Pre-Reno		Pre-Purchase	X Inventory Only
Details:		Floors Cored		Walls Cored		Carpet Lifted	X	Drawings		Bldg Vacant	X Bldg Occupied

BUILDING INFORMATION

Construction:	1968	Date	120,000	Ft^2	X	Wood Frame	X	Brick / Block		Steel Stud	CIP Concrete
	2	Stories		Crawlspace Full		C/sp Partial		Basement Full		Bsmt Partial	Attic Space
Additions(s)		Observed	X	Reported		Date	X	Renovated (yes)		Renovated (No)	Reno Date
Roofing:		Shingle		Tar and Gravel	X	Torch-on		Metal		Concrete	Not in Scope
Exterior:		Wood	X	Metal/Vinyl		Concrete		Stucco	X	Masonry	Not in Scope
Exterior Panels	X	Wood	X	Metal/Vinyl		Concrete		Stucco			Not in Scope
Window Frames	X	Putty		Glazing	X	Rubber		Caulking	X	Foam	None
Interior:	X	Wood		Plaster	X	Drywall		Covered D/W	X	Concrete	Other Non-Asb
Interior Ceilings:		Wood	X	Metal	X	Drywall	X	T-Bar	X	Q-deck	Exposed Str
Heating:	X	Hot Water		Wood	X	Furnace	X	Roof Top		Electric	Other Non-Asb
Heat Distribution:	X	Radiant	X	Ducted	X	Baseboard					Other Non-Asb
Thermal Insulation:	X	Vermiculite	X	Fiberglass		Rock Wool		Cellulose		Wood Chip	Other Non-Asb

MECHANICAL SYSTEMS

Ducting:		None		Cork	X	Fiberglass		Rock Wool		Asb Paper	Other Non-Asb
Duct Joints:		None		Asbestos Tape		Vinyl Tape	X	Joint Sealant	X	Foil Tape	Other Non-Asb
Water Piping:		None	X	Fiberglass		Asb Lagging		Cork		Foam	Other Non-Asb
Pipe Fittings:		None	X	Cement (exposed)		Cement (con)	X	Fiberglass	X	PVC	Other Non-Asb
Rain Water Leader:		None	X	Cast Iron	X	Copper		Asbestos Pipe	X	Plastic	Other Non-Asb
Roof Drain Bowls:	X	None		Cement (exposed)		Cement (con)	X	Fiberglass			Other Non-Asb
Sanitary:	X	Plastic	X	Copper	X	Cast Iron		Asbestos Pipe			Not in Scope
Chimney Liner:		Plastic		Cast Iron / Metal		Ceramic		Asbestos Pipe		Masonry	X Not in Scope

APPENDIX D
ASBESTOS-CONTAINING MATERIALS INVENTORY AND PRIORITIZED ABATEMENT SCHEDULE

ASBESTOS CONTAINING BUILDING MATERIALS
INVENTORY AND ABATEMENT BUDGET ESTIMATES

BUILDING AND FUNCTIONAL AREA		MATERIAL		ASSESSMENT										ABATEMENT				
ROOM #	ROOM DESCRIPTION	CODE	DESCRIPTION	VIS	CONDITION	HEIGHT	AIR or VIBRATION	ENCLOSED SPACE	ACCESSIBLE TO PUBLIC	FRIABILITY	FUTURE DAMAGE POTENTIAL	QUANTITY	UNIT	RATE	COST	REMOVAL PRIORITY	AMI SCORE	FOOT NOTE
MACKENZIE AND DISTRICT ARENA - 400 SKEENA DRIVE MACKENZIE, BC																		
KNOWN ASBESTOS CONTAINING BUILDING MATERIALS																		
EXTERIOR:																		
	Concrete Block Walls	V1	Vermiculite Wall	Encl	Good	L	N	Y	Low	High	Low	15000	SF	$ -	$ -	3	32	*1
MAIN LEVEL:																		
	Throughout Application	Md1	Duct Mastic	Con	Good	H	Y	Y	Low	Low	Low	1250	LF	$ -	$ -	3	15	
	Throughout Application	Mw1	Window Mastic	Vis	Good	L	N	N	High	Low	Low	19	Unit	$ -	$ -	3	26	*1
	Throughout Application	P1	Drywall Tape Comp.	Vis	Good	L	N	N	High	Mod	Mod	5500	SF	$ -	$ -	3	35	*2
	Concrete Block Walls	V1	Vermiculite Wall	Encl	Good	L	N	Y	Low	High	Low	-	SF	$ -	$ -	3	32	*1 *3
100	Arena	C1	Cement Pipe Fitting	Vis	Good	H	Y	N	Mod	High	Mod	2	Units	$ -	$ -	1	40	
100N	Mechanical Room	C1	Cement Pipe Fitting	Vis	Good	H	Y	N	Mod	High	Mod	6	Units	$ -	$ -	1	40	
100Q	Maintenance Room	M2	Mastic Glue / Sealant	Encl	Good	L	N	Y	Low	Low	Low	120	SF	$ -	$ -	3	12	
101F	Refrigeration Plant	C1	Cement Pipe Fitting	Vis	Good	H	Y	N	Mod	High	Mod	4	Units	$ -	$ -	1	40	
106B	Fan Room	C1	Cement Pipe Fitting	Vis	Good	H	Y	N	Mod	High	Mod	2	FTG	$ -	$ -	1	40	
108C	Office	V1	Vermiculite Wall	Con	Poor	L	N	N	High	High	High	20	SF	$ -	$ -	IMM	73	
108J	Copy Room	V1	Vermiculite Wall	Con	Poor	L	N	N	High	High	High	20	SF	$ -	$ -	IMM	73	
113	Library	V1	Vermiculite Wall	Con	Poor	L	N	N	High	High	High	50	SF	$ -	$ -	IMM	73	
124A	Mech. Rm. Mezz	V1	Vermiculite Wall	Vis	Poor	L	N	N	High	High	High	20	SF	$ -	$ -	IMM	75	
124A	Mech. Rm. Mezz	W2	Woven Textile	Vis	Good	L	Y	N	High	High	High	1	Unit	$ -	$ -	IMM	65	
UPPER LEVEL:																		
	Throughout Application	Md1	Duct Mastic	Con	Good	H	Y	Y	Low	Low	Low	400	LF	$ -	$ -	3	15	
	Throughout Application	Mw1	Window Mastic	Vis	Good	L	N	N	High	Low	Low	4	Unit	$ -	$ -	3	26	*1
	Throughout Application	P1	Drywall Tape Comp.	Vis	Good	L	N	N	High	Mod	Mod	11000	SF	$ -	$ -	3	35	*2
	Concrete Block Walls	V1	Vermiculite Wall	Encl	Good	L	N	Y	Low	High	Low	-	SF	$ -	$ -	3	32	*1 *3
SUSPECT ASBESTOS CONTAINING BUILDING MATERIALS																		
	Exterior	Qs2	Roofing Shingle	Vis	Good	H	Y	N	Low	Low	Low		SF	$ -	$ -	3	12	*4
101F	Refrigeration Plant	Kp1	Pipe Gasketing	Encl	Good	L	N	Y	Low	Mod	Low		Unit	$ -	$ -	3	17	*4
101F	Refrigeration Plant	Y1	Arc Chutes	Con	Good	L	N	Y	Low	Low	Low		Unit	$ -	$ -	3	15	*4

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ASBESTOS CONTAINING BUILDING MATERIALS
INVENTORY AND ABATEMENT BUDGET ESTIMATES

BUILDING AND FUNCTIONAL AREA		MATERIAL		ASSESSMENT										ABATEMENT				
ROOM #	ROOM DESCRIPTION	CODE	DESCRIPTION	VIS	CONDITION	HEIGHT	AIR or VIBRATION	ENCLOSED SPACE	ACCESSIBLE TO PUBLIC	FRIABILITY	FUTURE DAMAGE POTENTIAL	QUANTITY	UNIT	RATE	COST	REMOVAL PRIORITY	AMI SCORE	FOOT NOTE

MACKENZIE AND DISTRICT ARENA - 400 SKEENA DRIVE MACKENZIE, BC

IMMEDIATE ABATEMENT AND RE-APPLICATION COSTS $	-
PRIORITY 1 RECOMMENDED ABATEMENT AND RE-APPLICATION COSTS $	-
PRIORITY 2 RECOMMENDED ABATEMENT AND RE-APPLICATION COSTS $	-
PRIORITY 3 RECOMMENDED ABATEMENT AND RE-APPLICATION COSTS $	-
CONTINGENCY % 15 $	-
TOTAL ASBESTOS ABATEMENT COSTS FOR THIS FACILITY (Excluding suspect asbestos applications) $	**-**

PCB CONTAINING ELECTRICAL EQUIPMENT

Suspect PCB light ballasts

Potential PCB containing transformers

COSTS FOR REMOVAL AND DISPOSAL OF PCB CONTAINING ELECTRICAL EQUIPMENT $	-

MERCURY CONTAINING ELECTRICAL EQUIPMENT

Wall mounted thermostats	1	UNIT	$ -	$	-
Mercury fluorescent light tubes	300	UNIT	$ -	$	-

COSTS FOR REMOVAL AND DISPOSAL OF MERCURY CONTAINING ELECTRICAL EQUIPMENT $	-

LEAD BASED PAINT

Lead paint applications were identified in this facility. TCLP testing of applications with lead content over 100 PPM will be required to determine disposal criteria

COSTS FOR REMOVAL AND DISPOSAL OF LEAD BASED PAINT $	-

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ASBESTOS CONTAINING BUILDING MATERIALS
INVENTORY AND ABATEMENT BUDGET ESTIMATES

BUILDING AND FUNCTIONAL AREA		MATERIAL		ASSESSMENT										ABATEMENT				
ROOM #	ROOM DESCRIPTION	CODE	DESCRIPTION	VIS	CONDITION	HEIGHT	AIR or VIBRATION	ENCLOSED SPACE	ACCESSIBLE TO PUBLIC	FRIABILITY	FUTURE DAMAGE POTENTIAL	QUANTITY	UNIT	RATE	COST	REMOVAL PRIORITY	AMI SCORE	FOOT NOTE

MACKENZIE AND DISTRICT ARENA - 400 SKEENA DRIVE MACKENZIE, BC

OTHER LEAD APPLICATIONS

Lead roof jacks and flashing materials may be present — 5 UNITS

COSTS FOR REMOVAL AND DISPOSAL OF OTHER LEAD APPLICATIONS	$	-

OZONE DEPLETING SUBSTANCES

Various refrigerators, coolers and air conditioning units

COSTS FOR REMOVAL AND DISPOSAL OF OZONE DEPLETING SUBSTANCES	$	-

TOXIC, FLAMMABLE OR EXPLOSIVE MATERIALS

Various stored paints, oils, solvents, pesticides

COSTS FOR REMOVAL AND DISPOSAL OF TOXIC, FLAMMABLE OR EXPLOSIVE MATERIALS	$	-

BIOLOGICAL CONTAMINANTS

No biological contaminants were identified

COSTS FOR REMOVAL AND DISPOSAL OF BIOLOGICAL CONTAMINANTS	$	-

CONTINGENCY %	10	$	-

TOTAL ESTIMATED REGULATED MATERIALS ABATEMENT BUDGET ESTIMATE FOR THIS BUILDING ***(Excluding Suspect PCB Light Ballasts, Mercury Light Tubes, Roof Jacks, ODS, Toxic, Flammable or Explosive Materials)***	***$***	***-***

FOOT NOTES

*1 *See Appendix B: Drawings for locations.*

*2 *See Appendix E: Room by Room Inventory for known locations.*

*3 *Estimated quantity and associated cost included in the "Exterior" entry for this application.*

*4 *Suspect asbestos applications must be sampled prior to disturbance.*

*L1 *An exposure control plan is required prior to any work which may impact lead painted applications. A risk assessment may be required for projects were significant dust may be created.*

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ASBESTOS CONTAINING BUILDING MATERIALS
INVENTORY AND ABATEMENT BUDGET ESTIMATES

BUILDING AND FUNCTIONAL AREA		MATERIAL		ASSESSMENT										ABATEMENT				
ROOM #	ROOM DESCRIPTION	CODE	DESCRIPTION	VIS	CONDITION	HEIGHT	AIR or VIBRATION	ENCLOSED SPACE	ACCESSIBLE TO PUBLIC	FRIABILITY	FUTURE DAMAGE POTENTIAL	QUANTITY	UNIT	RATE	COST	REMOVAL PRIORITY	AMI SCORE	FOOT NOTE

MACKENZIE AND DISTRICT ARENA - 400 SKEENA DRIVE MACKENZIE, BC

GENERAL NOTES:

1 Abatement, re-application and consulting costs are based on individual applications. Prices will vary depending upon timing and scope of work. It is recommended that revised budget numbers be prepared once an abatement scope of work is ascertained. ***All quantities provided are estimates only. Contractors are responsible to collect their own quantities/measurements prior to***

2 Functional area numbers are representative of the survey drawings provided with this report and may not indicate actual room numbers.

3 Only known and visible asbestos materials are listed. There is a distinct possibility that asbestos materials may be present in wall, ceiling and floor void spaces not identified in this report. Any materials located in void spaces should be sampled for asbestos content prior to disturbance.

4 This is an occupied building assessment for asbestos containing materials. No sampling of building membrane materials was conducted where such sampling could breach the water tightness of the building. Additionally, applications routinely sampled prior to building demolition were not assessed during this inspection; concealed flooring applications beneath flooring or sub-flooring covering materials where coring would be required to identify these concealed materials, were not sampled. A pre-demolition assessment should be performed prior to building demolition.

FRIABILITY
HIGH (easily crumbled by hand)
MOD (not easily crumbled by hand)
LOW (tool or implement required to disturb)

CONDITION
GOOD (no visible signs of disturbance)
FAIR (visible signs of disturbance, no debris noted on ground)
POOR (delamination/deterioration evident/imminent, may have debris on ground)

HEIGHT
L - Low application height less than 10' from floor
H - Low application height greater than 10' from floor

ACCESSIBILITY TO PUBLIC
LOW (controlled, infrequent access; out of hand reach)
MOD (controlled access or out of hand reach)
HIGH (uncontrolled access and within hand reach)

VIS (VISIBILITY)
Vis - Application is exposed and visible
Con - Application is concealed but accessible beneath covering materials
Encl - Application is enclosed and inaccessible (such as asbestos paper backing on vinyl floor sheeting is enclosed beneath a covering layer of vinyl)

UNITS
SF - Square Foot
Unit - Per unit
FTG - Fitting or Pipe Elbow
LF - Linear Foot

REMOVAL PRIORITY
IMM AMI SCORE 49 OR GREATER - Immediate removal recommended. There is a distinct possibility of asbestos fibre release
1 AMI SCORE 40 TO 48 - Remove within one year due to this application's condition, location or surrounding area's use; damage is probable
2 AMI SCORE 36 TO 39 - Manage in place or removal in conjunction with proposed building renovations or maintenance is recommended
3 AMI SCORE LESS THAN 36 - Manage in place or removal prior to renovation or demolition activities is recommended

ENCLOSED SPACE
An area of limited or restricted access due to height, restrictions of movement or areas where created dusts could be retained within the space for an extended period of time due to limited air movement

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ASBESTOS CONTAINING BUILDING MATERIALS
INVENTORY AND ABATEMENT BUDGET ESTIMATES

BUILDING AND FUNCTIONAL AREA		MATERIAL		ASSESSMENT										ABATEMENT				
ROOM #	ROOM DESCRIPTION	CODE	DESCRIPTION	VIS	CONDITION	HEIGHT	AIR or VIBRATION	ENCLOSED SPACE	ACCESSIBLE TO PUBLIC	FRIABILITY	FUTURE DAMAGE POTENTIAL	QUANTITY	UNIT	RATE	COST	REMOVAL PRIORITY	AMI SCORE	FOOT NOTE

MACKENZIE AND DISTRICT ARENA - 400 SKEENA DRIVE MACKENZIE, BC

SURVEYED MATERIALS DESCRIPTIONS AND SAMPLE NUMBERS

	MATERIAL	*VISUAL DESCRIPTION - ASSESSED LOCATION*	*SAMPLE No.*	*SAMPLE RESULT*
ASSESSED AND SUSPECT ASBESTOS CONTAINING APPLICATIONS				
Af1	Spray Applied Fireproofing	Cafco AAD Mineral fiber Thermal acoustic insulation with no substrate glue - Arena 100	Not Sampled	Known Non-Asbestos Application
B1	Pipe Insulation	Canvas or paper wrapped straight run fiberglass insulation w/ mesh, PVC and fiberglass insulated fittings on mechanical piping - Mechanical room 123	Not Sampled	Known Non-Asbestos Application
B2	Pipe Insulation	Metal cladding on blue foam or fiberglass insulation on mechanical piping - Refrigeration Plant 101F	Not Sampled	Known Non-Asbestos Application
C1	Cement Pipe Fitting	Cement pipe fitting on mechanical piping - Mechanical Room 100N	6391B-07	**10-20% Chrysotile Asbestos**
C1	Cement Pipe Fitting	Cement pipe fitting on mechanical piping - Refrigeration Plant 101F	6391B-15	**Stop Positive**
C1	Cement Pipe Fitting	Cement pipe fitting on mechanical piping - Arena 100	6391B-01	No Asbestos Detected
C2	Cement Pipe Fitting	Cementitious fitting on 12" mechanical piping - Mechanical Room 124	6391B-26	No Asbestos Detected
E1	Exhaust Breeching	Foil faced fiberglass insulation on mechanical ducting - Throughout Application	Not Sampled	Known Non-Asbestos Application
G1	Ceiling Panel	2x4' various patterned compressed cellulose tile - Vestibule 101D	Not Sampled	Known Non-Asbestos Application
G2	Ceiling Panel	2'x4' smooth faced, gypsum panel - Kitchen 104C	Not Sampled	Known Non-Asbestos Application
H1	Vinyl Floor Tile	Black with small white fleck skate flooring - Bleachers	6362-01	No Asbestos Detected
H1	Vinyl Floor Tile	Black with small white fleck skate flooring - Bleachers	6362-02	No Asbestos Detected
H1	Vinyl Floor Tile	Black with small white fleck skate flooring - Bleachers	6362-03	No Asbestos Detected
H2	Vinyl Floor Tile	2017 Grey/green skate flooring - Corridor 101	6362-04	No Asbestos Detected
H3	Vinyl Floor Tile	Black asphalt skate mat - Minor Hockey 101G	6391B-20	No Asbestos Detected
H4	Vinyl Floor Tile	Brown rubber mat with embossed lines - Understair Storage 109B	6391B-22	No Asbestos Detected
H5	Vinyl Floor Tile	9"x36" dark brown wood grain, vinyl plank, stick down VFT - Library 113	Not Sampled	Known Non-Asbestos Application
H6	Vinyl Floor Tile	12"x12" Cream with brown and white streaks, VFT, with black mastic - Staff Mud Room 112B	6391B-30	No Asbestos Detected
H7	Vinyl Floor Tile	Blue with dark and light blue rubber mat - Fitness 137	Not Sampled	Known Non-Asbestos Application
H8	Vinyl Floor Tile	Grey rubber mat - Gym 139	Not Sampled	Known Non-Asbestos Application
H9	Vinyl Floor Tile	Grey or red with black speckles, skate mat - Corridor 206	Not Sampled	Known Non-Asbestos Application
I1	Vinyl Sheet Flooring	Grey with light and dark Getty splotch Ute backed Marmoleum - Lobby 116	Not Sampled	Known Non-Asbestos Application
I2	Vinyl Sheet Flooring	Grey non-slip, with welded seams VSF - Kitchen 104C	Not Sampled	Known Non-Asbestos Application
I3	Vinyl Sheet Flooring	Wood grain VSF - Multi-Purpose Room 111	Not Sampled	Known Non-Asbestos Application
I4	Vinyl Sheet Flooring	Grey with white splotch Ute backed Marmoleum - Corridor 128	Not Sampled	Known Non-Asbestos Application
I5	Vinyl Sheet Flooring	Grey with white and black mottled pattern, with welded seams VSF - Women's Washroom 135	Not Sampled	Known Non-Asbestos Application
Ip1	Paper Backed Flooring	Beige, grey and blue tile pattern, paper back VSF - Staff Room 107	6391B-21	No Asbestos Detected

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ASBESTOS CONTAINING BUILDING MATERIALS
INVENTORY AND ABATEMENT BUDGET ESTIMATES

BUILDING AND FUNCTIONAL AREA		MATERIAL		ASSESSMENT										ABATEMENT				
ROOM #	ROOM DESCRIPTION	CODE	DESCRIPTION	VIS	CONDITION	HEIGHT	AIR or VIBRATION	ENCLOSED SPACE	ACCESSIBLE TO PUBLIC	FRIABILITY	FUTURE DAMAGE POTENTIAL	QUANTITY	UNIT	RATE	COST	REMOVAL PRIORITY	AMI SCORE	FOOT NOTE

MACKENZIE AND DISTRICT ARENA - 400 SKEENA DRIVE MACKENZIE, BC

SURVEYED MATERIALS DESCRIPTIONS AND SAMPLE NUMBERS

MATERIAL		VISUAL DESCRIPTION - ASSESSED LOCATION	SAMPLE No.	SAMPLE RESULT
ASSESSED AND SUSPECT ASBESTOS CONTAINING APPLICATIONS				
Ip2	Paper Backed Flooring	Cream with black speckles, VSF - Multi Purpose Room 203	6391B-36	No Asbestos Detected
K1	Equipment Gasketing	Equipment gasketing on furnace unit - Mechanical Room 100N	Not Sampled	Known Non-Asbestos Application
K2	Equipment Gasketing	Equipment gasketing on furnace unit "Napoleon" - Fan Room 106B	Not Sampled	Known Non-Asbestos Application
K3	Equipment Gasketing	Equipment gasketing on boiler "Lochinvar" - Boiler Room 126	Not Sampled	Known Non-Asbestos Application
Kp1	Pipe Gasketing	Pipe flange gasket on mechanical piping - Refrigeration Plant 101F	Not Sampled	**Suspect Asbestos Application**
Kp2	Pipe Gasketing	Red rubber pipe flange gasket on mechanical piping - Refrigeration Plant 101F	Not Sampled	Known Non-Asbestos Application
Kp3	Pipe Gasketing	Green "Garlock" pipe flange gasket on mechanical piping - Mechanical Room 124	Not Sampled	Known Non-Asbestos Application
M1	Mastic Glue / Sealant	Black mastic adhering paper jacketing to fiberglass straight run - Pipe Chase 100B	6391B-03	No Asbestos Detected
M1	Mastic Glue / Sealant	Black mastic adhering paper jacketing to fiberglass straight run - Mechanical Room 100N	6391B-05	No Asbestos Detected
M1	Mastic Glue / Sealant	Black mastic adhering paper jacketing to fiberglass straight run - Refrigeration Vestibule 101E	6391B-14	No Asbestos Detected
M2	Mastic Glue / Sealant	Cream mastic adhering arena metal cladding - Maintenance Room 100Q	6391B-09	**5-10% Chrysotile Asbestos**
M3	Mastic Glue / Sealant	Mastic adhering metal door frames to concrete block walls (1968) - Arena Vestibule 100L	6391B-10	No Asbestos Detected
M4	Mastic Glue / Sealant	Red fibre gum on wall penetration (2017) - Storage 101C	Not Sampled	Known Non-Asbestos Application
M5	Mastic Glue / Sealant	Grey fibre gum on wall penetration - Corridor 101	6391B-13	No Asbestos Detected
M6	Mastic Glue / Sealant	Cementitious grey mastic on wall penetration - Refrigeration Plant 101F	6391B-16	No Asbestos Detected
M7	Mastic Glue / Sealant	Beige fibre gum on RTU roof jack - Roof (1992)	6391B-29	No Asbestos Detected
Md1	Duct Mastic	Red duct joint sealant - Mechanical room mezzanine 124A	6362-10	**10-20% Chrysotile Asbestos**
Md2	Duct Mastic	Grey duct joint sealant - Mechanical room mezzanine 124A	6362-11	No Asbestos Detected
Md2	Duct Mastic	Grey duct joint sealant - Custodial 104	6391B-18	No Asbestos Detected
Md3	Duct Mastic	Thick grey sealant on mechanical ducting - Change Room 6 101A	6391B-11	No Asbestos Detected
Mw1	Window Mastic	Black sealant between window frame and pane - Minor Hockey 101G	6391B-17	No Asbestos Detected
Mw1	Window Mastic	Black sealant between window frame and pane - Library 113	6391B-23	**1-5% Chrysotile Asbestos**
Mw1	Window Mastic	Black sealant between window frame and pane - Staff Room 127	6391B-32	**Stop Positive**
P1	Drywall Tape Comp.	White drywall tape compound (1968) - Skate Shop 100C	6391B-02	**1-5% Chrysotile Asbestos**
P1	Drywall Tape Comp.	White drywall tape compound (1968) - Change Room 2 100H	6391B-04	**Stop Positive**
P1	Drywall Tape Comp.	White drywall tape compound (1968) - Mechanical Room 100N	6391B-06	**Stop Positive**
P1	Drywall Tape Comp.	White drywall tape compound (1968) - Maintenance Room 100Q	6391B-08	**Stop Positive**
P1	Drywall Tape Comp.	Drywall tape compound (1968) - Corridor 120	6362-05	No Asbestos Detected
P2	Drywall Tape Comp.	2017 drywall tape compound (to confirm non ACM) - Change Room 6 101A	6391B-12	No Asbestos Detected

ASBESTOS CONTAINING BUILDING MATERIALS
INVENTORY AND ABATEMENT BUDGET ESTIMATES

BUILDING AND FUNCTIONAL AREA		MATERIAL		ASSESSMENT										ABATEMENT				
ROOM #	ROOM DESCRIPTION	CODE	DESCRIPTION	VIS	CONDITION	HEIGHT	AIR or VIBRATION	ENCLOSED SPACE	ACCESSIBLE TO PUBLIC	FRIABILITY	FUTURE DAMAGE POTENTIAL	QUANTITY	UNIT	RATE	COST	REMOVAL PRIORITY	AMI SCORE	FOOT NOTE

MACKENZIE AND DISTRICT ARENA - 400 SKEENA DRIVE MACKENZIE, BC

SURVEYED MATERIALS DESCRIPTIONS AND SAMPLE NUMBERS

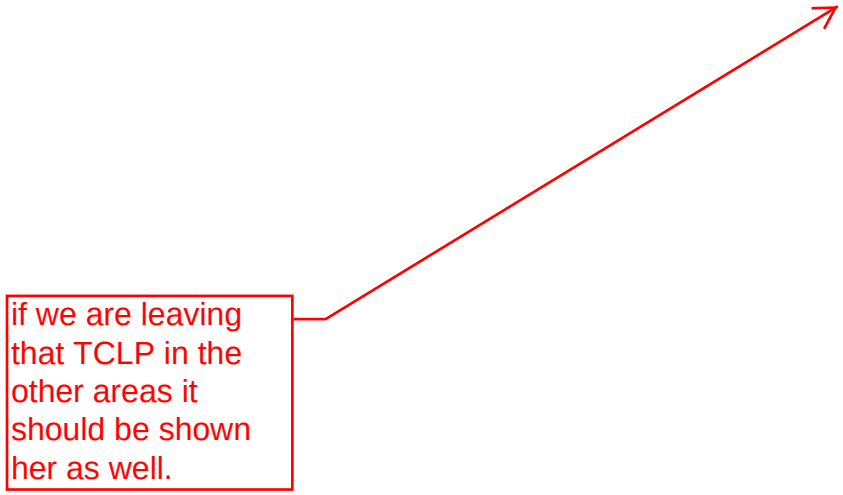
MATERIAL		VISUAL DESCRIPTION - ASSESSED LOCATION	SAMPLE No.	SAMPLE RESULT
ASSESSED AND SUSPECT ASBESTOS CONTAINING APPLICATIONS				
P2	Drywall Tape Comp.	2017 drywall tape compound (to confirm non ACM) - Kitchen 104C	6391B-19	No Asbestos Detected
P2	Drywall Tape Comp.	2017 drywall tape compound (to confirm non ACM) - Vestibule 122	Not Sampled	Known Non-Asbestos Application
P3	Drywall Tape Comp.	White drywall tape compound (1982) - Mechanical room 124	6362-06	No Asbestos Detected
P3	Drywall Tape Comp.	White drywall tape compound (1982) - Mechanical room 124	6362-07	No Asbestos Detected
P3	Drywall Tape Comp.	White drywall tape compound (1982) - Boiler room 126	6362-08	No Asbestos Detected
P3	Drywall Tape Comp.	White drywall tape compound (1982) - Mechanical room mezzanine 124A	6362-09	No Asbestos Detected
P3	Drywall Tape Comp.	White drywall tape compound (1982) - Internet Lounge 113C	6391B-24	No Asbestos Detected
P3	Drywall Tape Comp.	White drywall tape compound (1982) - Laundry 125	6391B-25	No Asbestos Detected
P4	Drywall Tape Comp.	White drywall tape compound (1992) - Staff Room 127	6391B-31	No Asbestos Detected
P4	Drywall Tape Comp.	White drywall tape compound (1992) - Men's Change Room 132	6391B-33	No Asbestos Detected
P4	Drywall Tape Comp.	White drywall tape compound (1992) - Corridor 130A	6391B-34	No Asbestos Detected
P4	Drywall Tape Comp.	White drywall tape compound (1992) - Custodial 138	6391B-35	No Asbestos Detected
Qs1	Roofing Shingle	Grey 2017 torch on rolled roofing on foam - Roof	Not Sampled	Known Non-Asbestos Application
Qs2	Roofing Shingle	Burgundy torch down asphalt shingle - Roof	Under Sampled	**Suspect Asbestos Application**
Qs2	Roofing Shingle	Brown torch on rolled roofing - SW roof	6362-12	No Asbestos Detected
T1	Bldg Thermal Insulation	Fiberglass batt insulation - Throughout Application	Not Sampled	Known Non-Asbestos Application
V1	Vermiculite Wall	Vermiculite infill insulation - Library 113	Not Sampled	**Known Asbestos Application**
W1	Woven Textile	Vibration dampener - Arena 100	Not Sampled	Known Non-Asbestos Application
W2	Woven Textile	White fibrous vibration dampener - Mech. Rm. Mezz 124A	6391B-27	**95-99% Chrysotile Asbestos**
W3	Woven Textile	White fibrous gasketing on kitchen exhaust fan - Roof (1968)	6391B-28	No Asbestos Detected
Y1	Arc Chutes	Arc chutes within transformer - Refrigeration Plant 101F	Not Sampled	**Suspect Asbestos Application**

ASBESTOS CONTAINING BUILDING MATERIALS
INVENTORY AND ABATEMENT BUDGET ESTIMATES

BUILDING AND FUNCTIONAL AREA		MATERIAL		ASSESSMENT										ABATEMENT				
ROOM #	ROOM DESCRIPTION	CODE	DESCRIPTION	VIS	CONDITION	HEIGHT	AIR or VIBRATION	ENCLOSED SPACE	ACCESSIBLE TO PUBLIC	FRIABILITY	FUTURE DAMAGE POTENTIAL	QUANTITY	UNIT	RATE	COST	REMOVAL PRIORITY	AMI SCORE	FOOT NOTE

MACKENZIE AND DISTRICT ARENA - 400 SKEENA DRIVE MACKENZIE, BC

ASSESSED AND SAMPLED LEAD BASED PAINT APPLICATION MATERIAL DESCRIPTION	SAMPLE NUMBER	SAMPLE RESULT	
Grey on blue on white on wood	6362-ICP-01	939	mg/kg
White on wood	6362-ICP-02	1260	mg/kg
Grey on red on concrete	6362-ICP-03	898	mg/kg
Grey on arena metal cladding - Maintenance Room 100Q	6391B-ICP-01	727	mg/kg
White on wood - Zamboni Room 100P	6391B-ICP-02	<80	mg/kg
Grey with blue and burgundy on concrete - Laundry 125	6391B-ICP-03	<80	mg/kg
White on drywall (P3) 1982 - Mechanical Room 124	6391B-ICP-04	<80	mg/kg
2"2" brown ceramic tile - Pool Area 121	6391B-ICP-05	<80	mg/kg
White on drywall (P4) 1992 - Men's Change Room 132	6391B-ICP-06	<80	mg/kg



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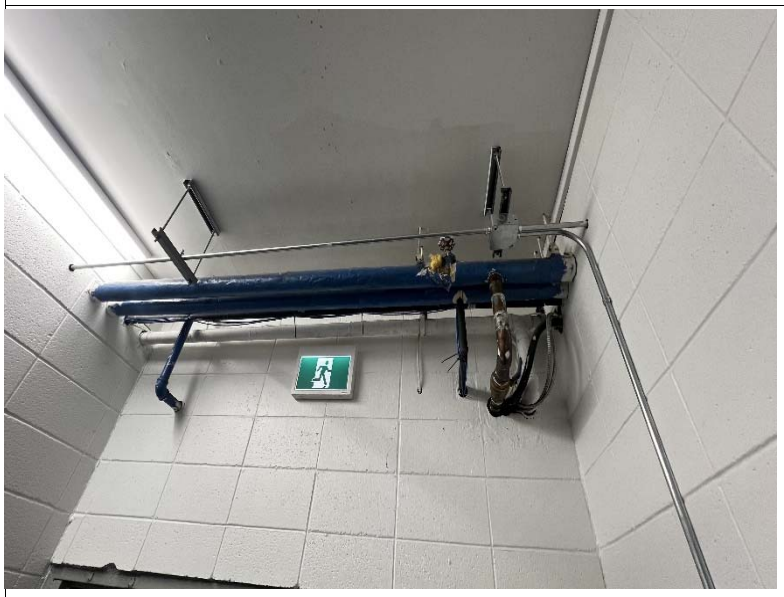
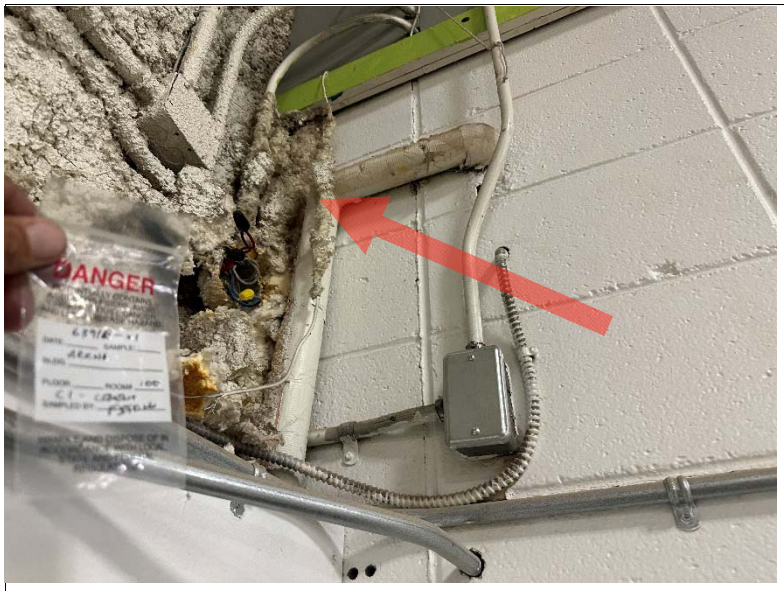
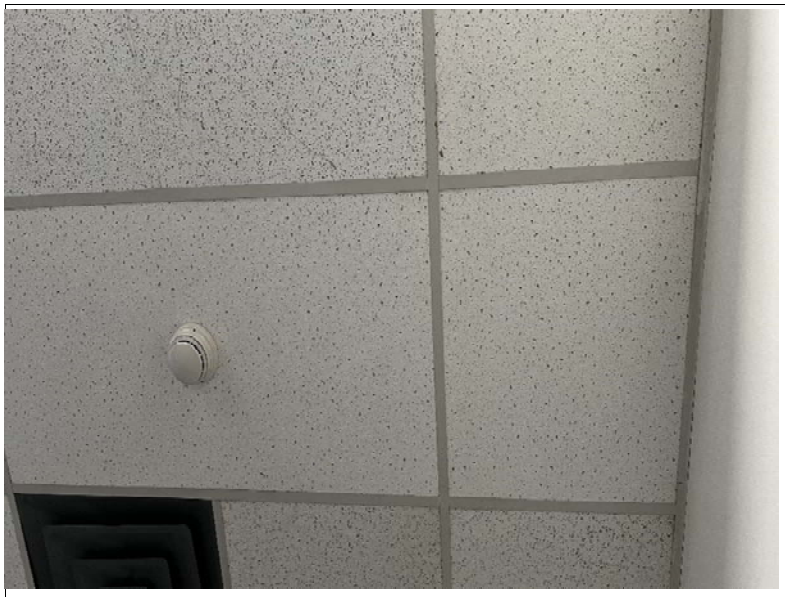
APPENDIX E
SITE PHOTOGRAPHS

MATERIALS ASSESSED FOR ASBESTOS-CONTENT

Peak Environmental Ltd.
Hazardous and Regulated Materials Assessment Report
Photograph Log - Potential ACM
#REF!

	Code	Modifier	Material Description	Sample Number / Information	Lab Results
	Af	1	Cafco AAD Mineral fibre Thermal acoustic insulation with no substrate glue	Not Sampled	Known Non-Asbestos Application
	B	1	Fiberglass and foam mechanical pipe insulation	Not Sampled	Known Non-Asbestos Application
	B	2	Metal cladding on blue foam or fiberglass insulation on mechanical piping	Not Sampled	Known Non-Asbestos Application

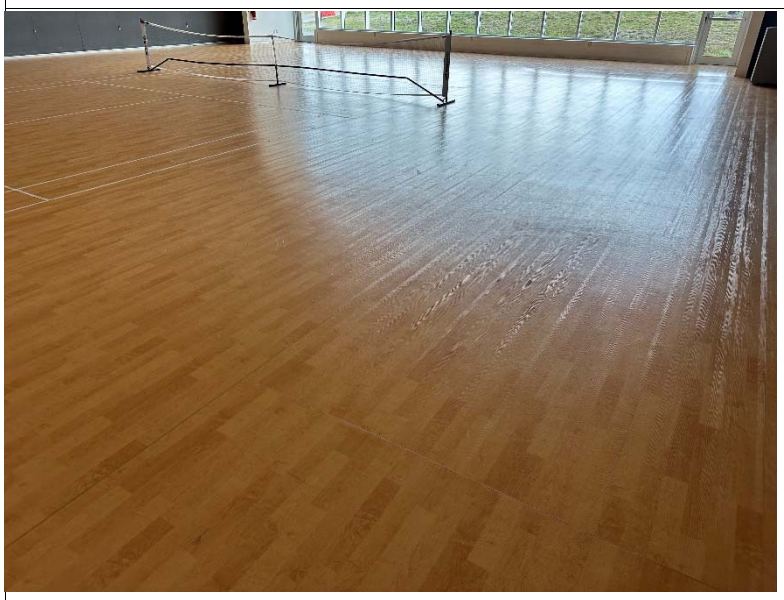
	Code	Modifier	Material Description	Sample Number / Information	Lab Results
	C	1	Cement pipe fitting on mechanical piping	6391B-07	10-20% Chrysotile Asbestos
	C	2	Cementitious fitting on 12" mechanical piping	6391B-26	No Asbestos Detected
	E	1	Foil faced fiberglass insulation on mechanical ducting (stock photo for reference)	Not Sampled	Known Non-Asbestos Application

	Code	Modifier	Material Description	Sample Number / Information	Lab Results
	G	1	2x4' various patterned compressed cellulose tile	Not Sampled	Known Non-Asbestos Application
	G	2	2'x4' smooth faced, gypsum panel	Not Sampled	Known Non-Asbestos Application
	H	1	Black with small white fleck skate flooring	6362-01	No Asbestos Detected

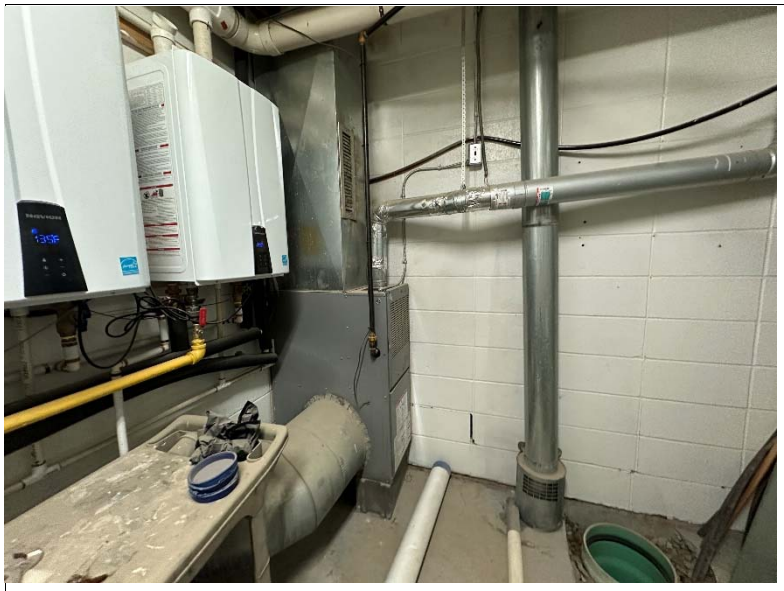
	Code Modifier	Material Description	Sample Number / Information	Lab Results
	H 2	2017 Grey/green skate flooring	6362-04	No Asbestos Detected
	H 3	Black asphalt skate mat	6391B-20	No Asbestos Detected
	H 4	Brown rubber mat with embossed lines	6391B-22	No Asbestos Detected

	Code Modifier	Material Description	Sample Number / Information	Lab Results
No Photograph Available	H 5	9"x36" dark brown wood grain, vinyl plank, stick down vinyl floor tile	Not Sampled	Known Non-Asbestos Application
	H 6	12"x12" Cream with brown and white streaks, vinyl floor tile, with black mastic	6391B-30	No Asbestos Detected
	H 7	Blue with dark and light blue rubber mat	Not Sampled	Known Non-Asbestos Application

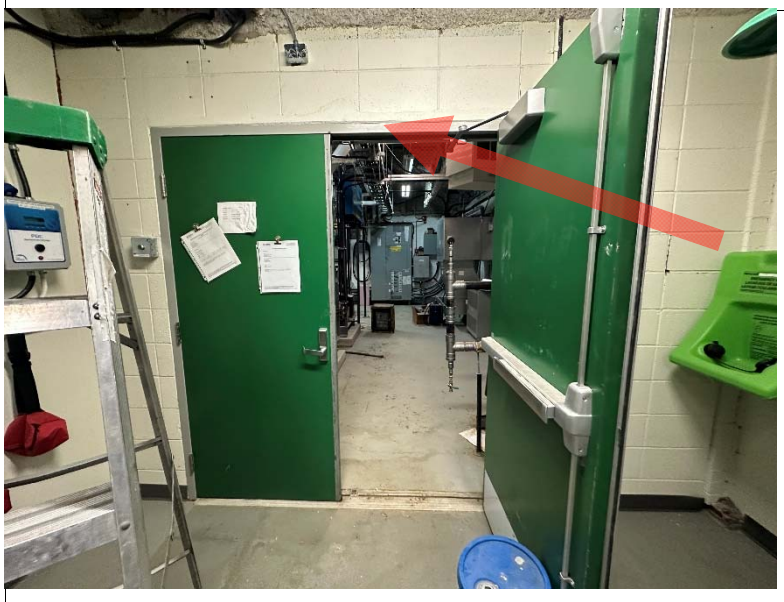
	Code	Modifier	Material Description	Sample Number / Information	Lab Results
	H	8	Grey rubber mat	Not Sampled	Known Non-Asbestos Application
	H	9	Grey or red with black speckles, skate mat	Not Sampled	Known Non-Asbestos Application
	I	1	Grey with light and dark Getty splotch Ute backed Marmoleum	Not Sampled	Known Non-Asbestos Application

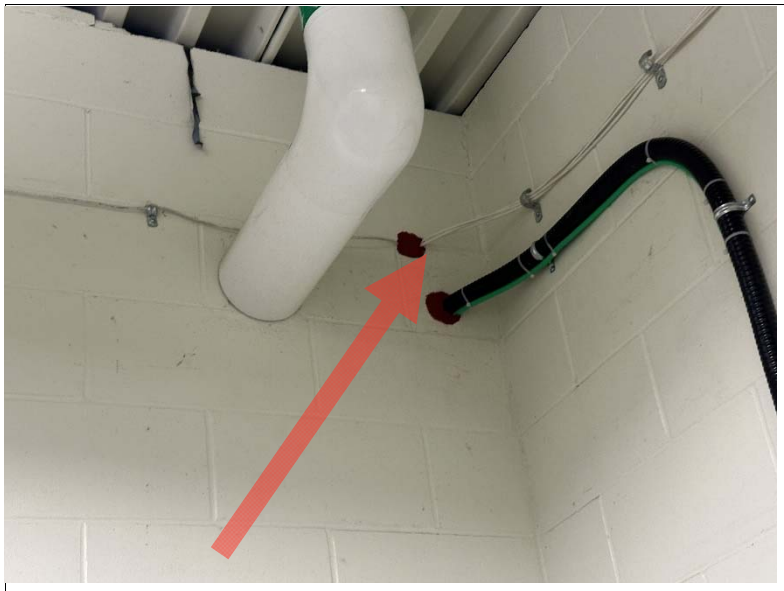
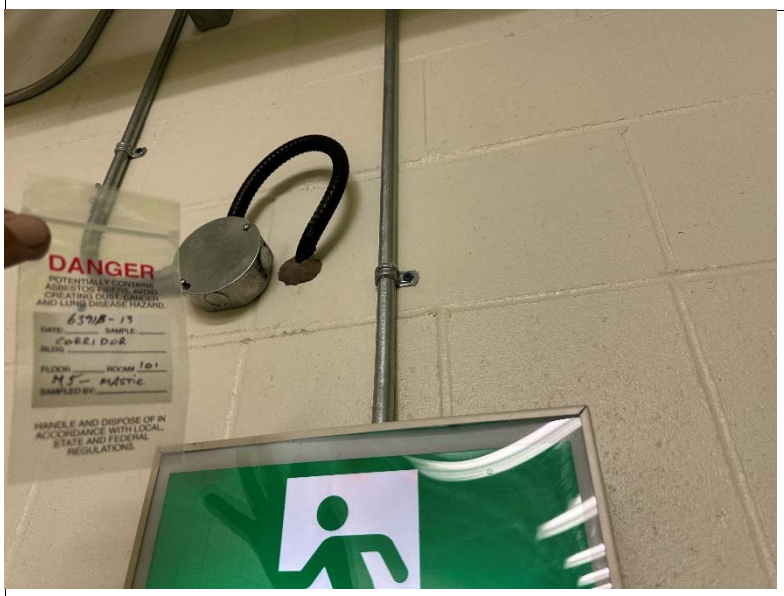
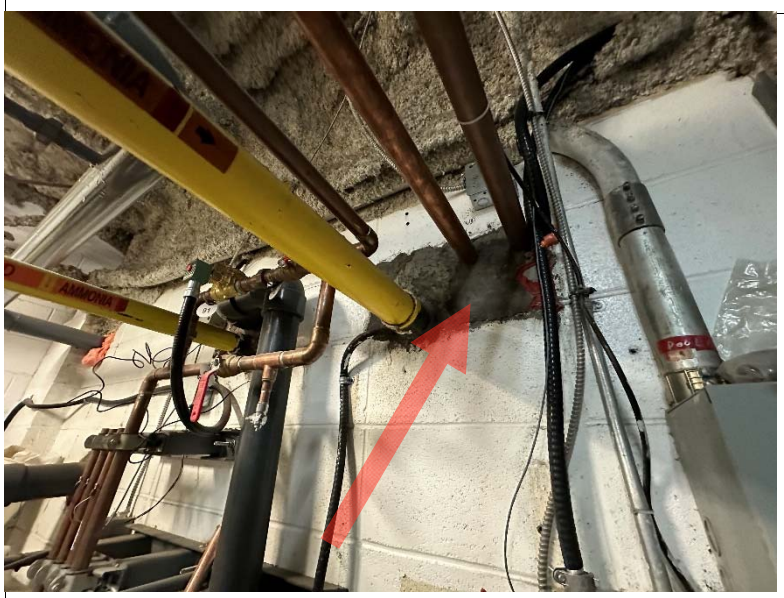
	Code Modifier	Material Description	Sample Number / Information	Lab Results
	I 2	Grey non-slip, with welded seams vinyl sheet flooring	Not Sampled	Known Non-Asbestos Application
	I 3	Wood grain vinyl sheet flooring	Not Sampled	Known Non-Asbestos Application
No Photograph Available	I 4	Grey with white splotch Ute backed Marmoleum	Not Sampled	Known Non-Asbestos Application

	Code Modifier	Material Description	Sample Number / Information	Lab Results
	I 5	Grey with white and black mottled pattern, with welded seams vinyl sheet flooring	Not Sampled	Known Non-Asbestos Application
	Ip 1	Beige, grey and blue tile pattern, paper back vinyl sheet flooring	6391B-21	No Asbestos Detected
	Ip 2	Cream with black speckles, vinyl sheet flooring	6391B-36	No Asbestos Detected

	Code Modifier	Material Description	Sample Number / Information	Lab Results
	K 1	Equipment gasketing on furnace unit	Not Sampled	Known Non-Asbestos Application
	K 2	Equipment gasketing on furnace unit "Napoleon"	Not Sampled	Known Non-Asbestos Application
	K 3	Equipment gasketing on boiler "Lochinvar"	Not Sampled	Known Non-Asbestos Application

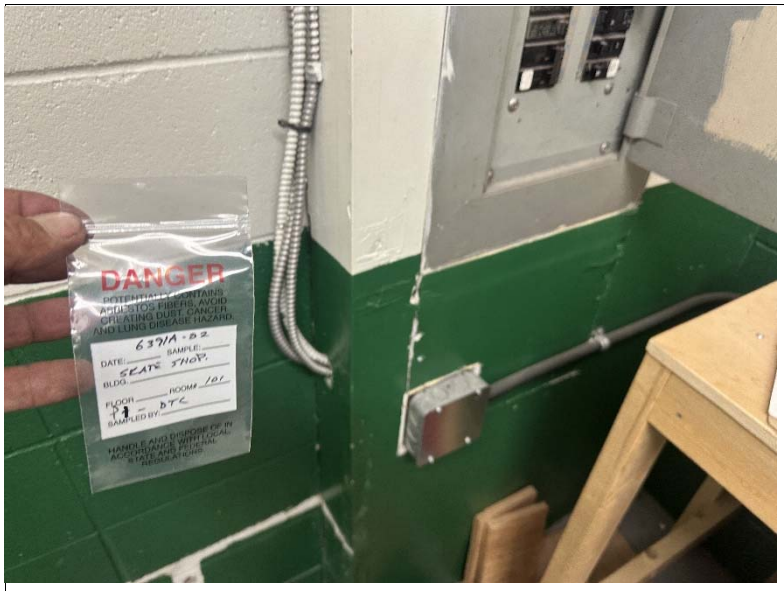
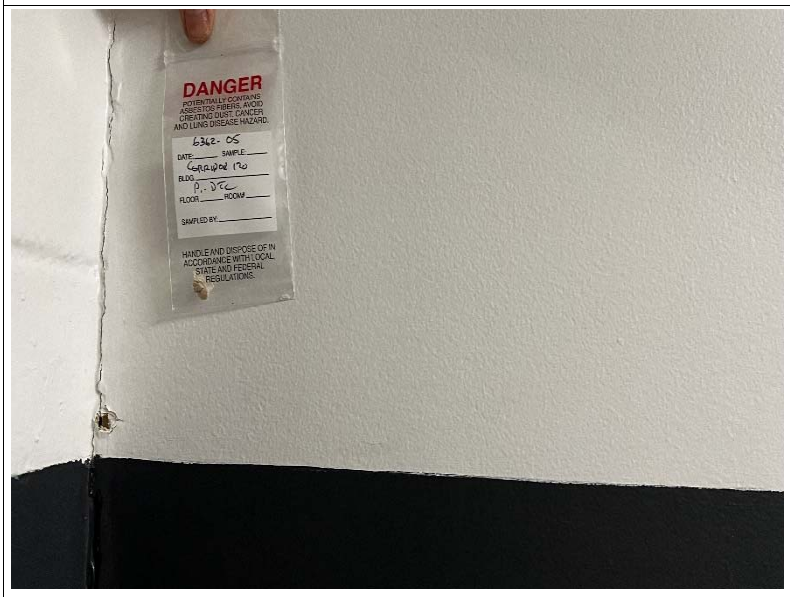
	Code Modifier	Material Description	Sample Number / Information	Lab Results
	Kp 1	Pipe flange gasket on mechanical piping	Not Sampled	Suspect Asbestos Application
	Kp 2	Red rubber pipe flange gasket on mechanical piping	Not Sampled	Known Non-Asbestos Application
	Kp 3	Green "Garlock" pipe flange gasket on mechanical piping	Not Sampled	Known Non-Asbestos Application

	Code Modifier	Material Description	Sample Number / Information	Lab Results
	M 1	Black mastic adhering paper jacketing to fiberglass straight run	6391B-03	No Asbestos Detected
	M 2	Cream mastic adhering arena metal cladding	6391B-09	5-10% Chrysotile Asbestos
	M 3	Mastic adhering metal door frames to concrete block walls (1968)	6391B-10	No Asbestos Detected

	Code Modifier	Material Description	Sample Number / Information	Lab Results
	M 4	Red fibre gum on wall penetration (2017)	Not Sampled	Known Non-Asbestos Application
	M 5	Grey fibre gum on wall penetration	6391B-13	No Asbestos Detected
	M 6	Cementitious grey mastic on wall penetration	6391B-16	No Asbestos Detected

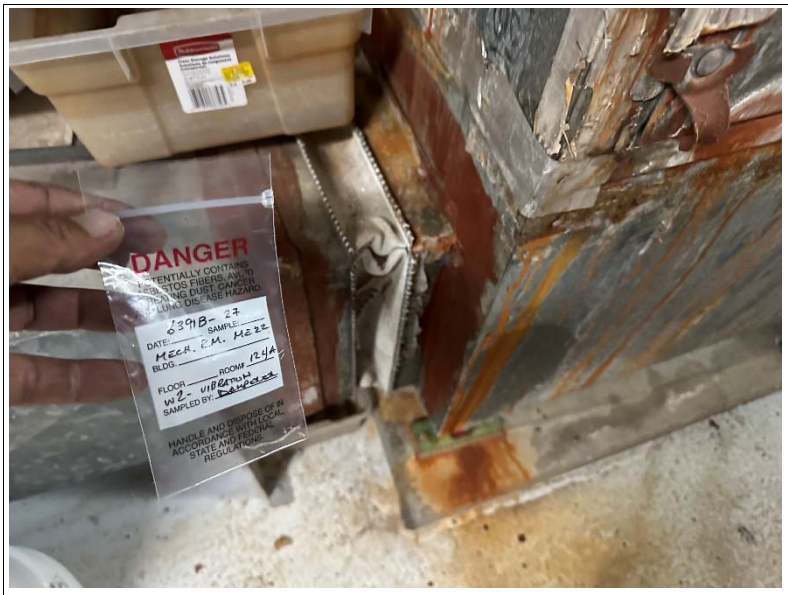
	Code Modifier	Material Description	Sample Number / Information	Lab Results
	M 7	Beige fibre gum on RTU roof jack	6391B-29	No Asbestos Detected
	Md 1	Red duct joint sealant	6362-10	10-20% Chrysotile Asbestos
	Md 2	Grey duct joint sealant	6362-11	No Asbestos Detected

	Code	Modifier	Material Description	Sample Number / Information	Lab Results
No Photograph Available	Md	3	Thick grey sealant on mechanical ducting	6391B-11	No Asbestos Detected
	Mw	1	Black sealant between window frame and pane	6391B-23	1-5% Chrysotile Asbestos
No Photograph Available	N	1	Sanitary pipe roving	Not Sampled	Known Asbestos Application

	Code Modifier	Material Description	Sample Number / Information	Lab Results
	P 1	White drywall tape compound (1968)	6391B-02	1-5% Chrysotile Asbestos
	P 2	Drywall tape compound	6362-05	No Asbestos Detected
	P 3	White drywall tape compound (1982)	6391B-24	No Asbestos Detected

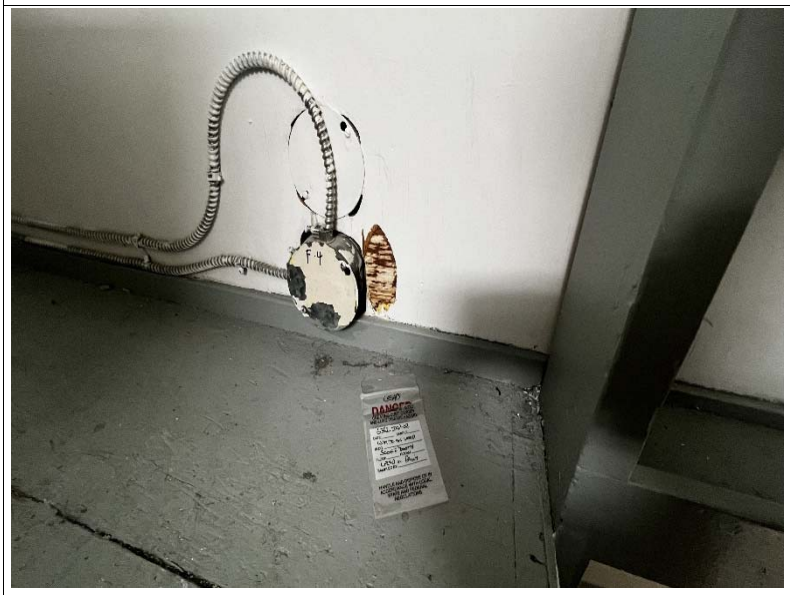
	Code Modifier	Material Description	Sample Number / Information	Lab Results
	P 4	White drywall tape compound (1992)	6391B-33	No Asbestos Detected
	Qs 1	Grey 2017 torch on rolled roofing on foam	Not Sampled	Known Non-Asbestos Application
	Qs 2	Brown torch on rolled roofing	Under Sampled	Suspect Asbestos Application

	Code	Modifier	Material Description	Sample Number / Information	Lab Results
No Photograph Available	T	1	Fiberglass batt insulation	Not Sampled	Known Non-Asbestos Application
	V	1	Vermiculite infill insulation	Not Sampled	Known Asbestos Application
	W	1	Vibration dampener	Not Sampled	Known Non-Asbestos Application

	Code Modifier	Material Description	Sample Number / Information	Lab Results
	W 2	White fibrous vibration dampener	6391B-27	95-99% Chrysotile Asbestos
	W 3	White fibrous gasketing on kitchen exhaust fan	6391B-28	No Asbestos Detected
	Y 1	Arc chutes within transformer	Not Sampled	Suspect Asbestos Application

LEAD IN PAINT AND OTHER HAZARDOUS MATERIALS

Peak Environmental Ltd.
Hazardous and Regulated Materials Assessment Report
Photograph Log - Lead Paint and Other Hazardous Materials
#REF!

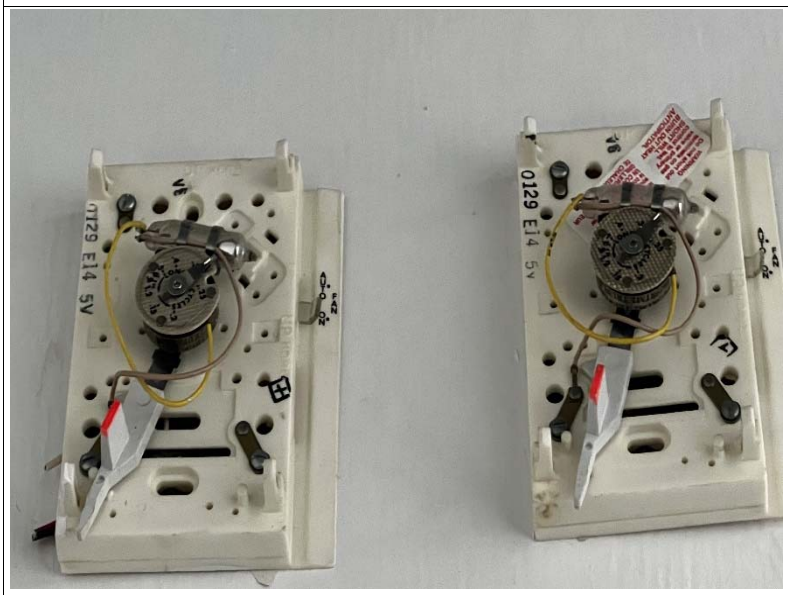
	Material Description	Sample Number / Information	Lead Conc.
	Grey on blue on white on wood	6362 ICP-01	939 mg/kg
	White on wood	6362 ICP-02	1260 mg/kg
	Grey on red on concrete	6362 ICP-03	898 mg/kg

Peak Environmental Ltd.
Hazardous and Regulated Materials Assessment Report
Photograph Log - Lead Paint and Other Hazardous Materials
#REF!

	Material Description	Sample Number / Information	Lead Conc.
	Grey on arena metal cladding - Maintenance Room 100Q	6391B-ICP-01	727 mg/kg
	White on wood - Zamboni Room 100P	6391B-ICP-02	<80 mg/kg
	Grey with blue and burgundy on concrete - Laundry 125	6391B-ICP-03	<80 mg/kg

Peak Environmental Ltd.
Hazardous and Regulated Materials Assessment Report
Photograph Log - Lead Paint and Other Hazardous Materials
#REF!

	Material Description	Sample Number / Information	Lead Conc.
	White on drywall (P3) 1982 - Mechanical Room 124	6391B-ICP-04	<80 mg/kg
	2"2" brown ceramic tile - Pool Area 121	6391B-ICP-05	<80 mg/kg
	White on drywall (P4) 1992 - Men's Change Room 132	6391B-ICP-06	<80 mg/kg

	Material Description	Sample Number / Information	Lead Conc.
	Potential PCB containing light ballast		
	Mercury containing lighting		
	Mercury containing thermostats		

Peak Environmental Ltd.
Hazardous and Regulated Materials Assessment Report
Photograph Log - Lead Paint and Other Hazardous Materials
#REF!

	Material Description	Sample Number / Information	Lead Conc.
	Roof jacks / flashing		
	Roof top HVAC		

APPENDIX F
LABORATORY RESULTS

POTENTIAL ASBESTOS-CONTAINING MATERIALS

CERTIFICATE OF ANALYSIS

REPORTED TO	Peak Environmental Ltd. 951 Pinewood Place West Kelowna, BC V1Z 3G7		
ATTENTION	Steve Ferguson	**WORK ORDER**	24H3425
PO NUMBER	6391B	**RECEIVED / TEMP**	2024-08-26 16:25 / 22.8°C
PROJECT	6391B	**REPORTED**	2024-08-30 14:00
PROJECT INFO	Mackenzie Arena and Rec Centre	**COC NUMBER**	no #

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO/IEC 17025:2017 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

By engaging our services, you are agreeing to CARO Analytical Service's Standard Terms and Conditions outlined here: https://www.caro.ca/terms-conditions

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

Authorized By:

Brent Whitehead
Account Manager

TEST RESULTS

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24H3425
PROJECT	6391B	**REPORTED**	2024-08-30 14:00

Analyte	Result	RL	Units	Analyzed	Qualifier
Cement pipe fitting on mechanical piping - Arena 100 - 6391B-01 (24H3425-01) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	**(20 - 30)**	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**(70 - 80)**	1.0	% dry	2024-08-30	
White drywall tape compound (1968) - Skate Shop 100C - 6391B-02 (24H3425-02) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Chrysotile Asbestos	**(1 - 5)**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**(95 - 99)**	1.0	% dry	2024-08-30	
Black mastic adhering paper jacketing to fiberglass straight run - Pipe Chase 100B - 6391B-03 (24H3425-03) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	**(1 - 5)**	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**(95 - 99)**	1.0	% dry	2024-08-30	
White drywall tape compound (1968) - Change Room 2 100H - 6391B-04 (24H3425-04) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Comments	**Stop Positive - Not Tested**		% dry	2024-08-30	
Black mastic adhering paper jacketing to fiberglass straight run - Mechanical Room 100N - 6391B-05 (24H3425-05) | Matrix: Solid | Sampled: 2024-08-26					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	**(1 - 5)**	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**(95 - 99)**	1.0	% dry	2024-08-30	
White drywall tape compound (1968) - Mechanical Room 100N - 6391B-06 (24H3425-06) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Comments	**Stop Positive - Not Tested**		% dry	2024-08-30	

TEST RESULTS

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24H3425
PROJECT	6391B	**REPORTED**	2024-08-30 14:00

Analyte	Result	RL	Units	Analyzed	Qualifier
Cement pipe fitting on mechanical piping - Mechanical Room 100N - 6391B-07 (24H3425-07) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Chrysotile Asbestos	**(10 - 20)**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	**(20 - 30)**	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**(50 - 60)**	1.0	% dry	2024-08-30	
White drywall tape compound (1968) - Maintainance Room 100Q - 6391B-08 (24H3425-08) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Comments	**Stop Positive - Not Tested**		% dry	2024-08-30	
Cream mastic adhering arena metal cladding - Maintainance Room 100Q - 6391B-09 (24H3425-09) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Chrysotile Asbestos	**(5 - 10)**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**(90 - 95)**	1.0	% dry	2024-08-30	
Mastic adhering metal door frames to concrete block walls (1968) - Arena Vestibule 100L - 6391B-10 (24H3425-10) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-08-30	
Thick grey sealant on mechanical ducting - Change Room 6 101A - 6391B-11 (24H3425-11) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-08-30	
2017 drywall tape compound (to confirm non ACM) - Change Room 6 101A - 6391B-12 (24H3425-12) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-08-30	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24H3425
PROJECT	6391B	**REPORTED**	2024-08-30 14:00

Analyte	Result	RL	Units	Analyzed	Qualifier
Grey fibre gum on wall penetration - Corridor 101 - 6391B-13 (24H3425-13) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	**(5 - 10)**	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**(90 - 95)**	1.0	% dry	2024-08-30	
Black mastic adhering paper jacketing to fiberglass straight run - Refrigeration Vestibule 101E - 6391B-14 (24H3425-14) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	**(1 - 5)**	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**(95 - 99)**	1.0	% dry	2024-08-30	
Cement pipe fitting on mechanical piping - Refrigeration Plant 101F - 6391B-15 (24H3425-15) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Comments	**Stop Positive - Not Tested**		% dry	2024-08-30	
Cementitious grey mastic on wall penetration - Refrigeration Plant 101F - 6391B-16 (24H3425-16) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-08-30	
Black sealant between window frame and pane - Minor Hockey 101G - 6391B-17 (24H3425-17) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-08-30	
Grey duct joint sealant - Custodial 104 - 6391B-18 (24H3425-18) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-08-30	

TEST RESULTS

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24H3425
PROJECT	6391B	**REPORTED**	2024-08-30 14:00

Analyte	Result	RL	Units	Analyzed	Qualifier
2017 drywall tape compound (to confirm non ACM) - Kitchen 104C - 6391B-19 (24H3425-19) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-08-30	
Black asphalt skate mat - Minor Hockey 101G - 6391B-20 (24H3425-20) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	**(5 - 10)**	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**(90 - 95)**	1.0	% dry	2024-08-30	
Beige, grey and blue tile pattern, paper back VSF - Staff Room 107 - 6391B-21 (24H3425-21) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	**(30 - 40)**	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**(60 - 70)**	1.0	% dry	2024-08-30	
Brown rubber mat with embossed lines - Understair Storage 109B - 6391B-22 (24H3425-22) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-08-30	
Black sealant between window frame and pane - Library 113 - 6391B-23 (24H3425-23) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Chrysotile Asbestos	**(1 - 5)**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**(95 - 99)**	1.0	% dry	2024-08-30	
White drywall tape compound (1982) - Internet Lounge 113C - 6391B-24 (24H3425-24) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-08-30	

TEST RESULTS

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24H3425
PROJECT	6391B	**REPORTED**	2024-08-30 14:00

Analyte	Result	RL	Units	Analyzed	Qualifier
White drywall tape compound (1982) - Laundry 125 - 6391B-25 (24H3425-25) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-08-30	
Cementitious fitting on 12 mechanical piping - Mechanical Room 124 - 6391B-26 (24H3425-26) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	**(5 - 10)**	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**(90 - 95)**	1.0	% dry	2024-08-30	
White fiberous vibration dampener - Mech. Rm. Mezz 124A - 6391B-27 (24H3425-27) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Chrysotile Asbestos	**(95 - 99)**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**(1 - 5)**	1.0	% dry	2024-08-30	
Wihite fiberous gasketing on kitchen exhaust fan - Roof (1968) - 6391B-28 (24H3425-28) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	**(95 - 99)**	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**(1 - 5)**	1.0	% dry	2024-08-30	
Beige fibre gum on RTU roof jack - Roof (1992) - 6391B-29 (24H3425-29) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	**(1 - 5)**	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**(95 - 99)**	1.0	% dry	2024-08-30	
12x12 Cream with brown and white streaks, VFT, with black mastic - Staff Mud Room 112B - 6391B-30 (24H3425-30) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	

TEST RESULTS

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24H3425
PROJECT	6391B	**REPORTED**	2024-08-30 14:00

Analyte	Result	RL	Units	Analyzed	Qualifier
12x12 Cream with brown and white streaks, VFT, with black mastic - Staff Mud Room 112B - 6391B-30 (24H3425-30) | Matrix: Solid | Sampled: 2024-08-18, Continued					
Polarized Light Microscopy Analysis, Continued					
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-08-30	
White drywall tape compound (1992) - Staff Room 127 - 6391B-31 (24H3425-31) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-08-30	
Black sealant between window frame and pane - Staff Room 127 - 6391B-32 (24H3425-32) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Comments	**Stop Positive - Not Tested**		% dry	2024-08-30	
White drywall tape compound (1992) - Men's Change Room 132 - 6391B-33 (24H3425-33) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-08-30	
White drywall tape compound (1992) - Corridor 130A - 6391B-34 (24H3425-34) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-08-30	
White drywall tape compound (1992) - Custodial 138 - 6391B-35 (24H3425-35) | Matrix: Solid | Sampled: 2024-08-18					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-08-30	
Cream with black speckles, VSF - Multi purpose Room 203 - 6391B-36 (24H3425-36) | Matrix: Solid | Sampled: 2024-08-18					

TEST RESULTS

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24H3425
PROJECT	6391B	**REPORTED**	2024-08-30 14:00

Analyte	Result	RL	Units	Analyzed	Qualifier
Cream with black speckles, VSF - Multi purpose Room 203 - 6391B-36 (24H3425-36) | Matrix: Solid | Sampled: 2024-08-18, Continued					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-08-30	
Non-Asbestos Fibres	**(20 - 30)**	1.0	% dry	2024-08-30	
Non-Fibrous Materials	**(70 - 80)**	1.0	% dry	2024-08-30	

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24H3425
PROJECT	6391B	**REPORTED**	2024-08-30 14:00

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

Glossary of Terms:

RL	Reporting Limit (default)
% dry	Percent (dry weight basis)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
>	Greater than the specified Result
EPA	United States Environmental Protection Agency Test Methods

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APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24H3425
PROJECT	6391B	**REPORTED**	2024-08-30 14:00

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

- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS)**: A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS)**: A second aliquot of sample is fortified with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM)**: A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Polarized Light Microscopy Analysis, Batch B4H4435										
Blank (B4H4435-BLK1)				Prepared: 2024-08-29, Analyzed: 2024-08-30						
Asbestos Fibres	Absent	0.5	% dry							
Non-Asbestos Fibres	< 1.0	1.0	% dry							
Non-Fibrous Materials	< 1.0	1.0	% dry							
Blank (B4H4435-BLK2)				Prepared: 2024-08-29, Analyzed: 2024-08-30						
Asbestos Fibres	Absent	0.5	% dry							
Non-Asbestos Fibres	< 1.0	1.0	% dry							
Non-Fibrous Materials	< 1.0	1.0	% dry							
Blank (B4H4435-BLK3)				Prepared: 2024-08-29, Analyzed: 2024-08-30						
Asbestos Fibres	Absent	0.5	% dry							
Non-Asbestos Fibres	< 1.0	1.0	% dry							
Non-Fibrous Materials	< 1.0	1.0	% dry							
Duplicate (B4H4435-DUP1)		**Source: 24H3425-01**		Prepared: 2024-08-29, Analyzed: 2024-08-30						
Asbestos Fibres	Absent	0.5	% dry		Absent				55	
Non-Asbestos Fibres	(20 - 30)	1.0	% dry		(20 - 30)				55	
Non-Fibrous Materials	(70 - 80)	1.0	% dry		(70 - 80)				55	
Duplicate (B4H4435-DUP2)		**Source: 24H3425-14**		Prepared: 2024-08-29, Analyzed: 2024-08-30						
Asbestos Fibres	Absent	0.5	% dry		Absent				55	
Non-Asbestos Fibres	(1 - 5)	1.0	% dry		(1 - 5)				55	
Non-Fibrous Materials	(95 - 99)	1.0	% dry		(95 - 99)				55	
Reference (B4H4435-SRM1)				Prepared: 2024-08-29, Analyzed: 2024-08-30						
Chrysotile Asbestos	(1 - 5)	0.5	% dry	4.00		100	80-120			
Non-Asbestos Fibres	< 1.0	1.0	% dry	0.00			60-140			
Non-Fibrous Materials	(95 - 99)	1.0	% dry	96.0		100	60-140			
Reference (B4H4435-SRM2)				Prepared: 2024-08-29, Analyzed: 2024-08-30						
Chrysotile Asbestos	(1 - 5)	0.5	% dry	4.00		100	80-120			
Non-Asbestos Fibres	< 1.0	1.0	% dry	0.00			60-140			
Non-Fibrous Materials	(95 - 99)	1.0	% dry	96.0		100	60-140			
Reference (B4H4435-SRM3)				Prepared: 2024-08-29, Analyzed: 2024-08-30						
Chrysotile Asbestos	(1 - 5)	0.5	% dry	4.00		100	80-120			
Non-Asbestos Fibres	< 1.0	1.0	% dry	0.00			60-140			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24H3425
PROJECT	6391B	**REPORTED**	2024-08-30 14:00

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Polarized Light Microscopy Analysis, Batch B4H4435, Continued										
Reference (B4H4435-SRM3), Continued				Prepared: 2024-08-29, Analyzed: 2024-08-30						
Non-Fibrous Materials	(95 - 99)	1.0	% dry	96.0		100	60-140			

CERTIFICATE OF ANALYSIS

REPORTED TO	Peak Environmental Ltd. 951 Pinewood Place West Kelowna, BC V1Z 3G7		
ATTENTION	Steve Ferguson	**WORK ORDER**	24D1100
PO NUMBER	6362	**RECEIVED / TEMP**	2024-04-08 16:54 / NA
PROJECT	6362	**REPORTED**	2024-04-10 14:53
PROJECT INFO	Mackenzie and District Arena	**COC NUMBER**	No Number

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO/IEC 17025:2017 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

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

Authorized By:

Brent Whitehead
Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24D1100
PROJECT	6362	**REPORTED**	2024-04-10 14:53

Analyte	Result	RL	Units	Analyzed	Qualifier
H - 1 - Black with small white fleck skate flooring - Bleachers - 6362-01 (24D1100-01) | Matrix: Solid | Sampled: 2024-04-03					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-04-10	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-04-10	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-04-10	
H - 1 - Black with small white fleck skate flooring - Bleachers - 6362-02 (24D1100-02) | Matrix: Solid | Sampled: 2024-04-03					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-04-10	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-04-10	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-04-10	
H - 1 - Black with small white fleck skate flooring - Bleachers - 6362-03 (24D1100-03) | Matrix: Solid | Sampled: 2024-04-03					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-04-10	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-04-10	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-04-10	
H - 2 - 2017 Grey/Green skate flooring - Corridor 101- 6362-04 (24D1100-04) | Matrix: Solid | Sampled: 2024-04-03					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-04-10	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-04-10	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-04-10	
P - 1- Beige drywall tape compound - Corridor 120 - 6362-05 (24D1100-05) | Matrix: Solid | Sampled: 2024-04-03					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-04-10	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-04-10	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-04-10	
P - 3 - White drywall tape compound (1982) - Mechanical room 124 - 6362-07 (24D1100-07) | Matrix: Solid | Sampled: 2024-04-03					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-04-10	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-04-10	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-04-10	

TEST RESULTS

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24D1100
PROJECT	6362	**REPORTED**	2024-04-10 14:53

Analyte	Result	RL	Units	Analyzed	Qualifier
P - 3 - White drywall tape compound (1982) - Boiler room 126 - 6362-08 (24D1100-08) | Matrix: Solid | Sampled: 2024-04-03					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-04-10	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-04-10	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-04-10	
P - 3 - White drywall tape compound (1982) - Mechanical room mezzanine 124 - 6362-09 (24D1100-09) | Matrix: Solid | Sampled: 2024-04-03					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-04-10	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-04-10	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-04-10	
Md - 1 - Red duct joint sealant - Mechanical room mezzanine 124 - 6362-10 (24D1100-10) | Matrix: Solid | Sampled: 2024-04-03					
Polarized Light Microscopy Analysis					
Chrysotile Asbestos	**(10 - 20)**	0.5	% dry	2024-04-10	
Non-Asbestos Fibres	**(1 - 5)**	1.0	% dry	2024-04-10	
Non-Fibrous Materials	**(80 - 90)**	1.0	% dry	2024-04-10	
Md - 2 - Grey duct joint sealant - Mechanical room mezzanine 124 - 6362-11 (24D1100-11) | Matrix: Solid | Sampled: 2024-04-03					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-04-10	
Non-Asbestos Fibres	< 1	1.0	% dry	2024-04-10	
Non-Fibrous Materials	**> 99**	1.0	% dry	2024-04-10	
Qs - 2 - Brown torch on rolled roofing - SW roof - 6362-12 (24D1100-12) | Matrix: Solid | Sampled: 2024-04-03					
Polarized Light Microscopy Analysis					
Asbestos Fibres	**Absent**	0.5	% dry	2024-04-10	
Non-Asbestos Fibres	**(40 - 50)**	1.0	% dry	2024-04-10	
Non-Fibrous Materials	**(50 - 60)**	1.0	% dry	2024-04-10	

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24D1100
PROJECT	6362	**REPORTED**	2024-04-10 14:53

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

Glossary of Terms:

RL	Reporting Limit (default)
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EPA	United States Environmental Protection Agency Test Methods

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APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24D1100
PROJECT	6362	**REPORTED**	2024-04-10 14:53

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- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
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Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Polarized Light Microscopy Analysis, Batch B4D2126										
Blank (B4D2126-BLK1)				Prepared: 2024-04-10, Analyzed: 2024-04-10						
Asbestos Fibres	Absent	0.5	% dry							
Non-Asbestos Fibres	< 1.0	1.0	% dry							
Non-Fibrous Materials	< 1.0	1.0	% dry							
Blank (B4D2126-BLK2)				Prepared: 2024-04-10, Analyzed: 2024-04-10						
Asbestos Fibres	Absent	0.5	% dry							
Non-Asbestos Fibres	< 1.0	1.0	% dry							
Non-Fibrous Materials	< 1.0	1.0	% dry							
Reference (B4D2126-SRM1)				Prepared: 2024-04-10, Analyzed: 2024-04-10						
Chrysotile Asbestos	(1 - 5)	0.5	% dry	3.00		100	80-120			
Non-Fibrous Materials	(95 - 99)	1.0	% dry	97.0		100	60-140			
Reference (B4D2126-SRM2)				Prepared: 2024-04-10, Analyzed: 2024-04-10						
Chrysotile Asbestos	(1 - 5)	0.5	% dry	3.00		100	80-120			
Non-Fibrous Materials	(95 - 99)	1.0	% dry	97.0		100	60-140			

LEAD IN PAINT AND OTHER HAZARDOUS MATERIALS

CERTIFICATE OF ANALYSIS

REPORTED TO	Peak Environmental Ltd. 951 Pinewood Place West Kelowna, BC V1Z 3G7		
ATTENTION	Steve Ferguson	**WORK ORDER**	24H3406
PO NUMBER	6391B	**RECEIVED / TEMP**	2024-08-26 16:25 / NA
PROJECT	6391B	**REPORTED**	2024-08-28 15:05
PROJECT INFO	Mackenzie Arena and Rec Centre	**COC NUMBER**	No Number

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

Authorized By:

Brent Whitehead
Account Manager

TEST RESULTS

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24H3406
PROJECT	6391B	**REPORTED**	2024-08-28 15:05

Analyte	Result	RL	Units	Analyzed	Qualifier
Grey on arena metal cladding - Maintenance Room 100Q - 6391B-ICP-01 (24H3406-01) | Matrix: Solid | Sampled: 2024-08-18					
Metals in Paint					
Lead	**727**	80.0	mg/kg	2024-08-28	
White on wood - Zamboni Room 100P - 6391B-ICP-02 (24H3406-02) | Matrix: Solid | Sampled: 2024-08-18					
Metals in Paint					
Lead	< 80.0	80.0	mg/kg	2024-08-28	
Grey with blue and burgundy on concrete - Laundry 125 - 6391B-ICP-03 (24H3406-03) | Matrix: Solid | Sampled: 2024-08-18					
Metals in Paint					
Lead	< 80.0	80.0	mg/kg	2024-08-28	
White on drywall (P3) 1982 - Mechanical Room 124 - 6391B-ICP-04 (24H3406-04) | Matrix: Solid | Sampled: 2024-08-18					
Metals in Paint					
Lead	< 80.0	80.0	mg/kg	2024-08-28	
2"2" brown ceramic tile - Pool Area 121 - 6391B-ICP-05 (24H3406-05) | Matrix: Solid | Sampled: 2024-08-18					
Metals in Paint					
Lead	< 80.0	80.0	mg/kg	2024-08-28	
White on drywall (P4) 1992 - Mens Change Room 132 - 6391B-ICP-06 (24H3406-06) | Matrix: Solid | Sampled: 2024-08-18					
Metals in Paint					
Lead	< 80.0	80.0	mg/kg	2024-08-28	

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24H3406
PROJECT	6391B	**REPORTED**	2024-08-28 15:05

Analysis Description	Method Ref.	Technique	Accredited	Location
SALM in Solid	ASTM E1645* / EPA 6020B	HNO3+H2O2 / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)		Richmond

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
mg/kg	Milligrams per kilogram (dry weight basis)
EPA	United States Environmental Protection Agency Test Methods

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APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24H3406
PROJECT	6391B	**REPORTED**	2024-08-28 15:05

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

- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS)**: A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS)**: A second aliquot of sample is fortified with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM)**: A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Metals in Paint, Batch B4H4188										
Blank (B4H4188-BLK1)				Prepared: 2024-08-28, Analyzed: 2024-08-28						
Lead	< 80.0	80.0	mg/kg							
Blank (B4H4188-BLK2)				Prepared: 2024-08-28, Analyzed: 2024-08-28						
Lead	< 80.0	80.0	mg/kg							
Duplicate (B4H4188-DUP1)		**Source: 24H3406-06**		Prepared: 2024-08-28, Analyzed: 2024-08-28						
Lead	< 80.0	80.0	mg/kg		< 80.0				40	
Duplicate (B4H4188-DUP2)		**Source: 24H3406-03**		Prepared: 2024-08-28, Analyzed: 2024-08-28						
Lead	< 80.0	80.0	mg/kg		< 80.0				40	
Reference (B4H4188-SRM1)				Prepared: 2024-08-28, Analyzed: 2024-08-28						
Lead	989	80.0	mg/kg	1000		99	70-130			
Reference (B4H4188-SRM2)				Prepared: 2024-08-28, Analyzed: 2024-08-28						
Lead	930	80.0	mg/kg	1000		93	70-130			

CERTIFICATE OF ANALYSIS

REPORTED TO	Peak Environmental Ltd. 951 Pinewood Place West Kelowna, BC V1Z 3G7		
ATTENTION	Steve Ferguson	**WORK ORDER**	24D1042
PO NUMBER	6362	**RECEIVED / TEMP**	2024-04-08 16:54 / NA
PROJECT	6362	**REPORTED**	2024-04-12 16:56
PROJECT INFO	Mackenzie and District Arena	**COC NUMBER**	No Number

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO/IEC 17025:2017 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

By engaging our services, you are agreeing to CARO Analytical Service's Standard Terms and Conditions outlined here: https://www.caro.ca/terms-conditions

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

Authorized By:

Brent Whitehead
Account Manager

TEST RESULTS

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24D1042
PROJECT	6362	**REPORTED**	2024-04-12 16:56

Analyte	Result	RL	Units	Analyzed	Qualifier
Grey on blue on white on wood - Painted wood - Score booth - <500Ft2 - ICP - 01 (24D1042-01) | Matrix: Solid | Sampled: 2024-04-03					
Metals in Paint					
Lead	**939**	80.0	mg/kg	2024-04-11	
White on wood - Painted wood - Score booth - 500-1000Ft2 - ICP-02 (24D1042-02) | Matrix: Solid | Sampled: 2024-04-03					
Metals in Paint					
Lead	**1260**	80.0	mg/kg	2024-04-11	
Grey on red on concrete - Painted concrete - <500Ft2 - ICP-03 (24D1042-03) | Matrix: Solid | Sampled: 2024-04-03					
Metals in Paint					
Lead	**898**	80.0	mg/kg	2024-04-11	
Waste Stream - Various Paints - 1000-2000 Ft2 - TCLP -01 (24D1042-04) | Matrix: Solid | Sampled: 2024-04-03					
TCLP Metals					
Lead	**0.42**	0.002	mg/L	2024-04-12	
TCLP Non-Volatile Extraction Details					
Extraction Fluid pH	**4.90**		pH units	2024-04-12	TCLP1
Final Extract pH	**5.09**		pH units	2024-04-12	TCLP1

Sample Qualifiers:

TCLP1 Used less than the minimum required weight (100 g) due to limited sample. The result cannot be used for regulatory guideline(s).

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24D1042
PROJECT	6362	**REPORTED**	2024-04-12 16:56

Analysis Description	Method Ref.	Technique	Accredited	Location
SALM in Solid	ASTM E1645* / EPA 6020B	HNO3+H2O2 / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)		Richmond
TCLP Extraction in Solid	EPA 1311	20:1 Leach for 18 h		Richmond
TCLP Leachable Metals in Solid	EPA 200.2* / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL	Reporting Limit (default)
mg/kg	Milligrams per kilogram (dry weight basis)
mg/L	Milligrams per litre
pH units	pH < 7 = acidic, ph > 7 = basic
EPA	United States Environmental Protection Agency Test Methods

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APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Peak Environmental Ltd.	**WORK ORDER**	24D1042
PROJECT	6362	**REPORTED**	2024-04-12 16:56

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Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Metals in Paint, Batch B4D2384										
Blank (B4D2384-BLK1)				Prepared: 2024-04-11, Analyzed: 2024-04-11						
Lead	< 80.0	80.0	mg/kg							
Reference (B4D2384-SRM1)				Prepared: 2024-04-11, Analyzed: 2024-04-11						
Lead	1020	80.0	mg/kg	1000		102	70-130			
TCLP Metals, Batch B4D2491										
Blank (B4D2491-BLK1)				Prepared: 2024-04-12, Analyzed: 2024-04-12						
Lead	< 0.010	0.010	mg/L							
LCS (B4D2491-BS1)				Prepared: 2024-04-12, Analyzed: 2024-04-12						
Lead	0.352	0.010	mg/L	0.400		88	80-120			
Matrix Spike (B4D2491-MS1)		**Source: 24D1042-04**		Prepared: 2024-04-12, Analyzed: 2024-04-12						
Lead	0.767	0.010	mg/L	0.400	0.424	86	70-130			
TCLP Non-Volatile Extraction Details, Batch B4D2435										
Blank (B4D2435-BLK1)				Prepared: 2024-04-12, Analyzed: 2024-04-12						
Extraction Fluid pH	4.90		pH units							
Final Extract pH	4.98		pH units							

APPENDIX G
METHODOLOGY

ASBESTOS-CONTAINING MATERIALS

MATERIALS INVENTORY

A complete inventory is carried out to record any materials which might contain asbestos. The intent of this inventory is to assure staff and contractors that all visible and accessible materials have been inspected and identified as asbestos-containing or non-containing. New application ceiling tiles, vinyl flooring applications and stucco identified as being post 1990, are considered to be non-asbestos with no verification samples collected, but are included in the inventory as non-containing applications. Materials obviously not asbestos-containing (*eg*. wood, metal, ceramic, concrete, *etc.*) are listed in the Ancillary (Appendix E).

BUILDING INSPECTION

This is an occupied building survey, and as such, samples of potentially asbestos-containing building materials were collected in a manner minimizing damage to finished surfaces. To preserve the integrity of building membranes and finished surface materials, these applications were not disturbed to ascertain the presence of possible concealed layers (*i.e*. flooring was not pulled up to determine if older layers of flooring were concealed underneath, roofing materials were not sampled).

VISUAL INSPECTION

All accessible spaces of the building are entered and visually inspected unless specified in Appendix A as inaccessible spaces.

1. Materials presumed to contain asbestos are classified as either friable or non-friable. WorkSafeBC Regulation Part 6 defines friable as an *asbestos-containing material that is crumbled or powdered or can be crumbled or powdered by hand pressure*.
2. *Homogeneous areas* are identified for each application. A homogeneous area is defined as an area containing material that is 'uniform in texture, colour, date of application, and identical in every other way'.
3. Each application is then placed into one of the following categories as defined by the Asbestos Hazard Emergency Response Act (AHERA).

   Surfacing Material: defined as a material that is sprayed on, troweled on, or otherwise applied to surfaces (structural members, walls, ceilings, *etc.*) for acoustical, decorative, fireproofing, or other purposes.

   Thermal System Insulation: defined as a material applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain, or water condensation, or for other purposes.

   Miscellaneous: defined as materials which do not fall into the above two categories - typically ceiling tiles and flooring applications.
4. A physical assessment is then carried out for each application to determine:
   - condition
   - potential for future disturbance

The above listed assessments are then used to rank each application for Removal Priority.

SAMPLING

In some instances, applications are visually identified as *Known Asbestos* based on the experience of the surveyor. Materials such as pre-1978 insulating cements, corrugated paper pipe insulation, asbestos pipe and cement boards are known to contain asbestos. If these materials are identified, they are noted as being asbestos-containing and no verification samples are collected.

Sample collection is carried out according to the requirements defined in WorksafeBC OHS Guideline Part 20. The following application specific procedures are descriptions of sampling methods only and do not indicate that these materials were sampled during this project.

Drywall Taping Compound, Plaster and Stipple Ceiling Texture

Representative samples are collected and analyzed for asbestos content for each of these applications. For any facility where multiple samples of an application return both asbestos-containing and non-asbestos results, all homogeneous applications should be considered asbestos-containing. Prior to any renovation or demolition work, additional sampling should be carried out before excluding any areas as non-asbestos-containing.

For any facility having additions or renovations, representative sampling was carried out in each addition/renovation area that was of a different age from the rest of the facility (homogeneous area).

Vinyl Flooring and Ceiling Tiles

Samples of vinyl flooring and ceiling tiles are collected based on visible size, color and pattern. Flooring and ceiling tile applications with the same surface coloring and patterns are considered a homogeneous application throughout the building. Representative samples of each unique application are collected and analyzed for asbestos content.

Carpeting was only lifted to inspect for underlying flooring applications where the carpet would not be, or already was damaged or where the carpet is peel and stick. **Concealed asbestos flooring applications may be present under carpeting, new application vinyl sheeting or wood subflooring materials that could not be observed through this non-destructive assessment. Inspection and sampling for concealed flooring applications should be performed as part of a Hazardous Materials Assessment prior to any renovation activities which may impact these applications.**

Vermiculite Insulation

Exposed exterior Concrete Masonry Unit (CMU) (concrete block and/or brick) walls are cored and inspected for the presence of vermiculite insulation as part of the asbestos material inventory.

In the event that no vermiculite insulation is found through the coring process, any breaching of CMU walls should be done with caution as there remains a potential for vermiculite to be present in some wall cavities for the following reasons:

- Not all channels inside block walls are uniformly filled with vermiculite insulation, and some channels may not be filled at all. Sampling an empty channel does not guarantee that all channels or blocks are empty.
- The presence of bond beam blocks vermiculite above the beam. If sampling is carried out below such a blockage, the presence of vermiculite will not be observed.

- Any disturbance to CMU walls due to demolition or renovation activities should be preceded by: a) determining if an interior block wall was initially an exterior wall, and b) carrying out additional sampling on the wall(s) to be disturbed. Original structure block walls are delineated on the floor plan, however, this is only an estimation of the walls' location and extent, and should be used as an approximate reference only. Exposed (visible) interior block walls were cored to ascertain the presence of vermiculite infill insulation. Core locations for this assessment are indicated on the floor plan (Appendix B) and show whether vermiculite was present or not.

Note: It is possible that CMU walls are concealed by brick or stucco finishing applications on the building exterior, and by drywall on the building's interior. In any such case, the presence of CMU walls is impossible to ascertain without removing the exterior membrane or interior finishes.

Under-sampled Suspect Materials

WorkSafeBC defines the number of samples required on a material-specific and area basis. Where sampling for the Inventory was carried out but the number of samples does not meet the WorkSafeBC's requirement, the material is listed as Suspect (under-sampled). The typical reasons for under-sampling are inaccessibility of a material or preventing the breaching of building finishes. Unless otherwise listed in the Inventory, stucco, plaster and window mastic are under-sampled and must be considered a suspect application which must be sampled within the work area where the material will be impacted.

Building Finishes and Membranes

No sampling of building finishes or membranes is performed where sample collection would cause or create a leak or irreversible damage to the building, building finishes or systems. Examples of materials which are *Suspect* but not sampled in order to avoid destruction or degradation of the building finish or membrane include (but are not limited to) roofing materials, exterior soffit stipple and stucco. Stucco samples are collected only if the material is already crumbled or damaged, or if specified in the project scope.

LABORATORY ANALYSIS

Collected samples are sent to an accredited laboratory for analysis using Polarized Light Microscopy (PLM) in accordance with the NIOSH 9002 or EPA 600/R-93/116 method. As defined in Section 6.1 of the OHS Regulation, all materials containing 0.5 percent or greater of asbestos, and vermiculite insulation containing any asbestos, shall be considered to be asbestos-containing.

Because the amount of asbestos in vermiculite insulation may be below the LOD for PLM analysis, whenever the analysis result is negative, the sample must be further analyzed using TEM (Transmission Electron Microscopy) in accordance with the Research Method for Sampling and Analysis of Fibrous Amphibole in Vermiculite Attic Insulation (EPA/600/R-04/004, dated January 2004). When the PLM analysis result is 'trace', the sample is accepted as asbestos-containing and no further testing is required.

LEAD-BASED PAINT

WorkSafeBC does not define lead based paint numerically. Instead, Exposure Risk Levels are assigned based on a Risk Assessment using several factors, including, but not limited to: total lead concentration, type and duration of activity, and amount to be disturbed. For the purposes of this report, sampling and analysis for lead in paint may require two testing/analysis methods to determine the following:

- Worker risk of exposure to lead dust
- Risk to occupants, especially vulnerable persons (children, pregnant women, older persons)
- Disposal requirements for lead painted waste

A selection of painted substrates were sampled for total lead concentration. Surfaces were selected in an effort to minimize damage to the finish.

Paint applications are grouped into homogeneous applications based on a visual inspection of paint colour and substrate. Testing of the painted surfaces for this assessment is limited to total lead concentration.

- **Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS) Analysis**: To determine the total concentration of lead in paint. The paint is tested in accordance with Analytical Method BCMOE SALM V.2 / EPA 6020B. Reporting limit for this method is 80 mg/kg (ppm) for this project.
- **Toxicity Characteristic Leaching Procedure (TCLP):** To quantify the concentration of leachable lead in paint in order to determine the disposal requirements of the lead painted waste. Materials with a sample result greater than 5 mg/L are classified as a hazardous waste (as defined in the B.C. Hazardous Waste Regulation), and require treatment and disposal at a site which accepts hazardous waste, such as the Swan Hills Treatment Centre in Alberta. Analytical method used is either EPA 200.2* / EPA 6020B or Toxicity Characteristic Leachate Procedure (1311/7000B), with a reporting limit of 0.010 mg/L.
- TCLP testing is required when painted substrates with a total lead concentration greater than 100 ppm (mg/kg) will be removed for disposal, therefore it is not within the scope of this assessment.

OTHER HAZARDOUS MATERIALS

POLYCHLORINATED BIPHENYLS (PCBS)

PCB-containing light ballasts were manufactured through 1980. Therefore, in buildings constructed prior to 1980, a visual inspection is carried out to tally the number of fluorescent light ballasts that potentially contain PCBs. Classification of potentially PCB or non-PCB for the purposes of this report is based on building/equipment age and ballast type. Conclusive identification is not possible without access to serial numbers, date or non-PCB stamps which often require removal of the light tubes or ballasts. T-8 style light fixtures were not inspected as they utilize a High Efficiency non-PCB ballast.

MERCURY

A visual inspection is done to identify and count any mercury containing thermostats, fluorescent light tubes or high voltage lights.

OTHER LEAD PRODUCTS

A visual inspection is done to identify other lead applications such as lead sheeting.

Ozone Depleting Substances

An inspection for the presence of CFC or other regulated refrigerants is carried out to locate refrigerators, freezers and wall mounted air conditioning units or roof top HVAC units. HVAC units are noted in the report, however, no inspection of such units is carried out to identify refrigerants.

Toxic, Flammable or Explosive Materials

The building and surrounding area are inspected for any toxic, flammable or explosive materials, however, no inspection for underground storage tanks is performed to ascertain potential soil contamination from spillage during tank filling, or leakage from the tank or supply / return lines, however, any indication of the presence of underground tanks is noted. Any contaminated soil encountered during tank excavation must be collected and remediated as required by the Ministry of Environment.

Biological Contaminants

The inspection includes biological contaminates such as mould, fecal matter, and potential sharp objects, all of which would require worker awareness and Personal Protective Equipment.

Crystalline Silica

A visual inspection is carried out for applications which commonly contain crystalline silica.

Radioactive Materials

A visual inspection is carried out for smoke detectors.

Note: Concealed hazardous materials may exist under covering finishes or in inaccessible areas. This is a non-destructive survey and as such, only visible materials are noted.

APPENDIX H
HAZARDOUS WASTE REGULATIONS AND GUIDELINES

PROVINCIAL OCCUPATIONAL HEALTH AND SAFETY REGULATIONS

Workplace health and safety is regulated in British Columbia by WorkSafeBC under the Workers' Compensation Act (effective April 15, 1998), as amended by the Workers' Compensation (Occupational Health and Safety) Amendment Act (effective October 1, 1999). The Act defines the general duties and obligations of the employer, employees and others at the work site.

Specific actions and work practices are outlined in the WorkSafeBC Occupational Health and Safety (OHS) Regulation for specific work practices. The OHS Regulation contains legal requirements that must be met by all workplaces under the inspection jurisdiction of WorkSafeBC. Asbestos is governed by Section 6 - Substance Specific Requirements, specifically Sections 6.1 through 6.32 and by Section 20 - Construction, Excavation and Demolition, specifically Section 20.112 Hazardous materials.

WorkSafeBC has published Safe Handling of Asbestos, A Manual of Standard Practices. This manual outlines basic information on asbestos and asbestos products, health hazard requirements for worker protection, safe work procedures and principles that should be followed in selecting the most suitable technique for the safe abatement of asbestos-containing materials. This document provides a guide to current practices which are to be followed in the Province of British Columbia.

WorkSafeBC has published the following manuals:

Safe Work Practices for Handling Asbestos and Safe Work Practices for Handling Lead

These manuals outline basic information on asbestos and lead respectively, related health hazards, requirements for worker protection, safe work procedures and principles that should be followed in selecting the most suitable abatement techniques. These documents provide a guide to current practices which are to be followed in the Province of British Columbia.

Regulatory Change: A Primer on Protecting Workers from Silica and Rock Dust Exposure - Changes to the Occupational Health and Safety Regulation has been published to clarify employer requirements to protect workers from exposure to harmful effects of silica dust.

ENVIRONMENTAL REGULATIONS

In British Columbia, environmental matters pertaining to production and disposal of waste generally fall under the jurisdiction of the Ministry of Environment (MoE), pursuant to the Environmental Management Act 2003 (SBC 2003). The waste regulation under the Environmental Management Act relating to hazardous building materials is the Hazardous Waste Regulation BC Reg. 63/88.

The Hazardous Waste Regulation BC Reg. 63/88, OC 268/88, including amendments up to BC Reg. 179/2016) established by the MoE, outlines the requirements for the storage, transportation, treatment, recycling and disposal of hazardous wastes in the Province of British Columbia. The regulation outlines the materials and criteria to be used to characterize waste as hazardous.

Ozone Depleting substances are regulated under Environment Canada under the Canadian Environmental Protection Act's Chlorofluorocarbon Regulations (SOR/90-127), Ozone-depleting Substances Regulations (SOR/94-408) and Ozone depleting Substances Products Regulations (SOR/90-584) and additionally by Ozone Depleting Substances and Other Halocarbons Regulation* (B.C. Reg. 387/99 In British Columbia, environmental matters pertaining to production and disposal of waste generally fall under the jurisdiction of the Ministry of Environment (MoE), pursuant to the Environmental Management Act 2003 (SBC 2003).

The Hazardous Waste Regulation BC Reg. 63/88, OC 268/88, including amendments as established by the MoE, outlines the requirements for the storage, transportation, treatment, recycling and disposal of hazardous wastes in the Province of British Columbia. The regulation outlines the materials and criteria to be used to characterize waste as hazardous.

Ozone Depleting substances are regulated by the Ozone Depleting Substances and Other Halocarbons Regulation* (B.C. Reg. 387/99, as amended by B.C. Reg. 220/2006).

PCBs are regulated by the Canadian Environmental Protection Act (SOR/2008-273).

Mercury containing products are regulated by the Canadian Environmental Protection Act (SOR /2014-254).

TRANSPORTATION OF HAZARDOUS WASTE

The transportation of hazardous wastes is governed under the Federal Transportation of Dangerous Goods Act and Regulations and the B.C. Transport of Dangerous Goods Act and Regulations which define the requirements for storage, handling, and transportation of regulated products and waste.