Asbestos Exposure Control Plan

1. **PURPOSE**

Asbestos refers to a group of minerals that were once used in over 3,000 products worldwide because of their strength, heat insulation, chemical resistance and other physical properties. However, asbestos is now recognized as a hazardous substance that can cause chronic and even fatal diseases like cancer if you are exposed to it. ABC Company has determined that certain work operations may, in fact, require workers to work with or near asbestos-containing materials and has adopted this Exposure Control Plan (ECP) to ensure that workers are aware of and properly protected against such hazards in accordance with the ABC Company OHS Program and the requirements of [*insert jurisdiction name*] Occupational Health and Safety (OHS) laws and other applicable standards.

2. **DEFINITIONS**

For purposes of this ECP:

"Asbestos-containing material" (ACM) means any material containing 0.5% or more asbestos as determined by polarized light microscopy, electron microscopy, and/or gravimetric analysis. Exception: Vermiculitecontaining insulation materials are considered an ACM if any asbestos (even less than 0.5%) is present.

"Amended water" means water with a wetting agent added for

purpose of reducing surface tension to allow thorough wetting of ACM.

“DOP/PAO” refers to Dispersed Oil Particulate/Poly Alpha Olefin testing the integrity of HEPA filters.

“HEPA” means a High Efficiency Particulate Air filter used in respiratory protective equipkment.

“Practicable” means possible given current knowledge, technology, and invention.

“Qualified person” means one with: (a) knowledge of the management and control of asbestos hazards through education and training; and (b) experience in the management and control of asbestos hazards. When ACM is or may be present, the qualified person should be an occupational health and safety professional with occupational hygiene experience related to asbestos, which include:

- A Certified Industrial Hygienist (CIH), Registered Occupational Hygienist (ROH), Certified Safety Professional (CSP), Canadian Registered Safety Professional (CRSP) or Professional Engineer (P. Eng.); or
- Persons with extensive occupational health and safety experience within the asbestos abatement industry and knowledge obtained through completion of recognized education and training courses in asbestos consultation and abatement.

3. **ASBESTOS HAZARDS**

The occupational exposure limit (OEL) for all forms of asbestos is 0.1 fibers per cubic centimeter of air (0.1 f/cc) over an 8-hour time weighted average.

4. **WORKERS THIS ECP IS INTENDED TO PROTECT**

The intent of this ECP is to ensure that all workers engaged

to work at ABC Company work sites who handle, use or work near ACMs are protected against asbestos exposure regardless of who pays or employs those workers, including:

- Full- or part-time workers employed by ABC Company;
- Temporary employees placed by an outside agency to work at an ABC Company work site;
- Contract labourers engaged to perform work at an ABC Company work site;
- Volunteers who work at the site for free; and
- Workers employed by prime contractors, contractors, and subcontractors to perform work at the site under a contract with ABC Company.

5. **ROLES & RESPONSIBILITIES**

5.1 Employer

ABC Company, in its capacity as employer, is responsible for the implementation of this ECP and ensuring that:

- A competent plan administrator is in place to implement this ECP;
- All the personnel, tools, equipment, personal protective equipment (PPE) and other resources required for effective implementation are provided;
- The necessary safe work procedures are established and implemented;
- All supervisors and workers are educated and trained in asbestos exposure hazards and working safely with asbestos;
- The medical monitoring this ECP requires is properly performed;
- All asbestos incidents are effectively investigated and promptly reported;
- Prime contractors and contractors are notified of the asbestos hazards posed by the site and require to implement this ECP or equivalent measures to ensure the

work is carried out safely;
- An annual review (or more often if conditions change) of the ECP's effectiveness is carried out.

5.2 ECP Administrator

The ECP administrator will be designated to implement the day-to-day functions of the ECP and must:

- Be familiar with the hazards and precautions required for asbestos disturbance and incorporate that information into the ECP;
- Be well-versed in all aspects of this ECP;
- Ensure adequate coordination of the overall asbestos ECP;
- Be familiar with the factors used to assess risks associated with asbestos and ACMs;
- Receive instruction and training in the administration of this ECP from a qualified person;
- Coordinate worker training and verify training has been conducted by a qualified person;
- Coordinate and help with exposure assessments by a qualified person when required;
- Help in developing, implementing and evaluating control solutions;
- Maintain and file the required asbestos records; and
- Review and make necessary revisions and corrections to this ECP.

5.3 Qualified Person

The responsibilities of the qualified person include:

- Performing the required airborne exposure monitoring;
- Creating and revising the ACM inventory;
- Performing the risk assessment and low-/moderate-/high-risk classification required by Section 7;
- Providing the required asbestos safety training to supervisors and workers.

5.4 Supervisors

Supervisors must:

- Know and comply with the OHS law, the ECP and other applicable ABC Company health and safety policies;
- Verify proper identification and assessment of hazards;
- Submit a written Notice of Project (NOP) asbestos encompassing all asbestos work to be completed and ensuring that the NOP is renewed before it expires;
- Post the NOP asbestos on site in a clearly visible and easily accessible area before the start of work activities;
- Verify that workers who may be exposed to asbestos have received appropriate education and training;
- Verify that workers have been assigned and are trained in the proper inspection, use, maintenance and care of the required PPE and protective equipment;
- Verify that safe work and decontamination procedures have been developed and are properly used by workers, including via the imposition of discipline for infractions where necessary;
- Verify that required tools, resources and support is provided and used by workers;
- Ensure the workers under their supervision carry out their ECP-related responsibilities;
- If requested, help with exposure assessments; and
- Promptly investigate any asbestos-related incidents, including near misses.

5.5 Workers

Workers must:

- Read, understand and comply with this ECP;
- Use the assigned PPE in an effective and safe manner;
- Follow all required work and decontamination procedures;
- Report any unsafe conditions or acts to the supervisor;

and

- Report any exposure incidents or any signs or symptoms of illness from asbestos exposure.

6. **ACM INVENTORY**

ABC Company will engage an approved environmental consultant to survey all buildings owned, leased or rented that are older than 1990 and create an inventory of asbestos and other hazardous materials they contain. In addition to ensuring that all workers have access to it, ABC Company workers will provide a copy of the inventory to all contractors and prime contractors that are constructing physical improvements at the sites that involve the risk of disturbance of ACMs. More rigorous inventorying will also take place prior to improvements involving removal of walls, insulation and other possible ACMs. The inventory will be revised after the removal of ACMs and/or the identification of new ACMs at the site.

7. **RISK ASSESSMENT**

ABC Company will designate a qualified person to perform a risk assessment to identify work operations involving the handling of ACMs and assess the risk of exposure of asbestos fibers to workers performing and in proximity to each of those activities using the following classification system.

7.1 Low Risk Activities

“Low risk activities” means those that involve working with or near ACM and that pose a low risk of exposure to asbestos fibers such that engineering controls and PPE are not required. Activities will be classified as low risk activities if the ACM is not being:

- Cut, sanded, drilled, broken, grind down or otherwise fragmented; or
- Disturbed (water damaged), such that asbestos fibres may be released.

Examples of low risk activities include, but are not limited to:

- Disturbing materials containing less than 0.5% asbestos where dust control measures are in place;
- Repairs to drywall that has asbestos-containing drywall filler, as long as the filler is not
- disturbed, e.g., via sanding;
- Installing a screw, nail, or hanger on drywall that contains painted asbestos-containing filler;
- Replacing a single asbestos-containing floor tile without breaking the tile;
- Moving asbestos-containing waste material that is contained within a cleaned, properly sealed
- bag and then double-bagged.

7.2 Moderate Risk Activities

“Moderate risk activities” mean those involving moderate risk of asbestos fiber exposure to workers. Examples include but are not limited to:

- Using hand tools to cut, shape, drill, grind or remove non-friable manufactured products
- containing asbestos, such as asbestos cement pipe;
- Using power tools to cut, shape, drill, grind or remove non-friable manufactured products
- containing asbestos, provided that: (i) each tool is equipped with a HEPA-filtered local exhaust
- ventilation (LEV) system; and (ii) air monitoring results demonstrate the effectiveness of the LEV system in protecting workers from exposure to asbestos fibers;
- Backing mounting screws out of asbestos cement products (such as transite board) and
- removing the boards or tiles intact;
- Buffing vinyl asbestos floor tiles with a coarse disc;
- Collecting asbestos samples for laboratory analysis;
- Removing any part of a false ceiling to gain access to a

work area, e.g., during an inspection, when materials containing friable asbestos are, or are likely to be, lying on the surface of the false ceiling;
- Removing drywall materials where joint-filling materials containing asbestos have been used;
- Removing asbestos tape or paper on ductwork;
- Removing vinyl-asbestos floor tile or other non-friable materials;
- Removing an entire piece of equipment or pipe with the ACM remaining effectively intact (“wrap and cut” procedure);
- Demolishing a block wall (for example, of cement) that has residual asbestos debris in its cavity, provided that dust controls are in place;
- Removing asbestos-containing asphalt roofing material;
- Dismantling a treated containment upon completion of an asbestos removal project;
- Setting up and removing a glove bag apparatus for the removal of pipe insulation; and
- Using a prefabricated glove bag to remove asbestos insulation from piping systems.

7.3 High Risk Activities

“High risk activities” mean those involving a high risk of worker to airborne asbestos fibers. Examples include but are not limited to:

- Removing, encapsulating or enclosing materials containing friable asbestos during the repair, alteration, maintenance, demolition, or dismantling of any part of a building, structure, machine or piece of equipment;
- Cleaning, maintaining or removing air-handling equipment in buildings where sprayed fireproofing materials containing asbestos have been applied to the airways or ventilation ducts or have been used as spray-on insulation;

- Removing asbestos-containing textured materials from ceilings or walls;
- Repairing, altering or dismantling any part of a boiler, furnace, kiln, or similar device in which insulating materials containing asbestos have been used or applied;
- Using power tools (without water or dust controls) to cut or drill through ACM;
- Removing asbestos-containing vermiculite insulation;
- Removing other than minor amounts of friable asbestos during repair, alterations, maintenance or demolition of a building;
- Spraying a sealant on friable material containing asbestos;
- Cleaning or removing air handling equipment, including rigid ducting, in a building with sprayed fireproofing containing asbestos;
- Repairing, altering or demolishing a kiln, an incinerator or similar device or part thereof, made in part of refractory materials containing asbestos;
- Using power tools not equipped with a HEPA filter to grind, cut or abrade a manufactured (non-friable) product containing asbestos; and
- Removing, repairing, altering, moving or otherwise working on ACMs in any other circumstances where there would be a significant release of fibers.

8. **CONTROLS**

Where work operations are classified as being either moderate- or high-risk, ABC Company will implement appropriate measures to eliminate or control workers' exposure to asbestos in accordance with the following principles.

8.1 Elimination & Substitution

Wherever practicable, operations will be carried out in a way so as to eliminate the need to handle, use, cut, move or disturb ACMs. [Example based on asbestos cement (AC) pipe

work: Wherever possible, replacement of water mains or other asbestos AC Pipe related activities should be planned to avoid the need to tap into, cut, or remove AC Pipe from the ground. Off-line water main replacement is preferred over On-line replacement.]

8.2 Engineering Controls

Where elimination or substitution is not practicable, ABC Company will implement appropriate engineering controls to minimize exposure, which may include but not be limited to:

- Local exhaust ventilation via a HEPA vacuum and/or Negative Air Unit, which has been DOP/PAO tested;
- Use of misting via an airless sprayer or via water bottle with amended water;
- Isolation of the designated work area(s) by creating an air tight enclosure using polyethylene sheeting and proper structural components, such as plywood or steel portable poles;
- Isolation of the designated work area(s) via use of polyethylene sheeting as a barrier or just barrier tape. Where work is conducted adjacent to non-protected workers, push out barriers to adjacent contractors at least 15 feet from the area where the asbestos is going to be disturbed; and
- Encapsulating areas from which ACMs have been abated after completion of the removal to ensure that any residual asbestos fibers are not reanimated.

8.3 Administrative/Work Controls

ABC Company will also implement administrative/work controls which minimize exposure by affecting how work is carried out, which may include but not be limited to:

- Posting of hazardous warning signs and barriers surrounding the immediate work area, restricting access unless workers are trained and fully equipped with the

proper PPE, and stating, at a minimum: “Asbestos Hazard Area; Personal Hygiene Reminders; NO Smoking, Eating or Drinking”;
- Occupational hygiene air monitoring including both personal and ambient sampling;
- (e.g. both addressing personal sampling and ambient sampling);
- Provision of the asbestos training required in Section 10 below;
- Respiratory protection training/fit testing;
- Decontamination procedures; and
- Maintaining separate eating areas away from the work areas.

Important Note: Proper construction signage, as per WSBC OHSR Section 6.13, shall be posted at the boundary of any designated abatement work area.

8.4 PPE

PPE will be used as a measure of last resort only when substitution and elimination are not practicable and engineering and administrative controls are either not practicable or not totally effective on their own. PPE may include the following equipment:

- Half-face air-purifying respirators equipped with P100 filter cartridges—unless workers choose to use full-face powered or nonpowered air-purifying respirators equipped with P100 filter cartridges instead;
- Hand protection, e.g. puncture-resistant rubber or nitrile gloves/work gloves;
- Disposable coveralls with hoods made of materials impervious to penetration by asbestos fibre such as Tyvek and which cover complete body and boots, and which fit snugly at the wrist and neck; and
- Other safety PPE as required for the specific work task and/or location.

9. **DECONTAMINATION & HYGIENE**

Inadvertent secondary inhalation may occur when asbestos on PPE, skin or hair is disturbed, which reintroduces the asbestos into the air. In addition to inhalation, contaminants can also enter the body during eating, drinking or smoking. The following decontamination and hygiene practices must be followed to prevent secondary inhalation and ingestion:

- Decontamination areas will be established that contain showers, water buckets, wash basins and sinks as well as soap or disinfectant wipes;
- Eating and smoking areas and facilities will be separated from potentially contaminated work areas;
- Where necessary, ABC Company will ensure laundry service for work clothing is provided; and
- Clean and sterile first aid station/equipment will be provided.

Workers will also be required to carry out the following decontamination/personal hygiene procedures:

- Remove all contaminated PPE, disposable coveralls, etc. and place into designated waste containers before entering the wash area;
- DO NOT REMOVE RESPIRATOR;
- Enter wash area and rinse hands, face and respirator using soap and water from wash basin/bucket/through the use of wipes/shower and discard towels/wipes in designated waste containers;
- Remove and thoroughly decontaminate respirator;
- Clean tools and equipment that will be re-used by wet wiping;
- Dispose of wipes in designated waste bins; and
- Refrain from smoking, drinking or eating in work areas where the potential for asbestos exposure exists.

10. **EDUCATION & TRAINING**

10.1 Initial Training

All workers and supervisors will receive training by a qualified person before the being assigned to a work area or operation where the risk of asbestos exposure exists covering, at a minimum:

- Health hazards of asbestos exposure;
- Work risk classifications, i.e., low-/moderate-/high-risk;
- Operations that involve exposure risks;
- Applicable safe work procedures;
- Hazard controls in effect;
- Required PPE;
- Decontamination and hygiene procedures;
- Other elements of this ECP; and
- The applicable asbestos requirements of [province's] OHS regulations.

Training will be documented in records listing the worker's name, trainer's name, material covered and date provided. Steps will be taken to verify that workers have understood and are competent to carry out their training.

10.2 Refresher & Retraining

Asbestos safety training will be repeated and reinforced as necessary in response to:

- A worker's violations or failure to follow the required asbestos safety procedures or protocols;
- There are grounds to believe that the worker's knowledge and training is inadequate and needs to be repeated or reinforced; and/or
- A worker's request for refresher or retraining.

10.3 Respirator Training

Workers required to use respirators will also receive the

training and fit testing required by OHS laws and the ABC Company Respiratory Protection Program.

11. **HEALTH MONITORING**

As required by OHS Regulations, ABC Company will implement a program of monitoring and evaluating the health of workers exposed to asbestos designed to detect biological indicators of harmful asbestos-related health effects at an early stage. While there are currently no established biological exposure indices for asbestos, annual pulmonary function tests can detect decreased lung functionality and chest x-rays can detect scarring within the lung, both of which are indicators of overexposure to asbestos. Steps will also be taken to detect symptoms associated with asbestos exposure, including:

Asbestos-Related Symptoms

Acute	Chronic
· Shortness of breath · Persistent cough · Chest tightness or pain · Loss of appetite · Dry, crackling sound in lungs while inhaling	· Asbestosis (scarring of the lungs) · Mesothelioma (cancer of the lining of the chest or abdominal cavity) · Lung cancer

12. **DOCUMENTATION & RECORDKEEPING**

The ECP administrator will retain the following records in a location accessible to workers for at least 10 years:

- Inventories of ACMs;
- ACM risk assessment reports;
- ACM inspection reports;
- Results of air monitoring for asbestos removal/remediation work;
- Records of corrective actions to control fiber release;

- Records of training and instruction of workers;
- Written work procedures; and
- Written notifications to [provincial OHS regulatory authority, e.g., WorkSafeBC].

The ECP administrator wil update and retain the following records in an accessible location as required:

- Copies of this ECP and other related policies and procedures;
- Equipment and PPE manuals; and
- Equipment maintenance records.

13. **PRIME CONTRACTORS & CONTRACTORS**

ABC Company will ensure that any prime contractors, contractors and subcontractors hired to perform work involving exposure to asbestos at an ABC Company work site are, before such work begins:

- Provided a copy of the ACM inventory;
- Given a copy of this ECP;
- Required to notify their own workers about and ensure they comply with the terms of this ECP.

Prime contractors, contractors, or subcontractors in control of work at an ABC Company site classified as either moderate- or high-risk for asbestos exposure will be required to ensure that exposed workers engaged in the contract work are adequately protected by either:

- Directly following this ECP and assuming all the employer obligations it imposes on ABC Company; or
- Developing and implementing an equivalent plan that meet the requirements of the applicable OHS Regulations and is coordinated with and provides at least the same level of protection as this ECP to workers exposed to asbestos.

14. **MONITORING**

This ECP will be reviewed, in consultation with the workplace Safety Committee or Safety Representative, at least once a year and more often in response to incidents, injuries, illnesses, changes to work conditions and other developments suggesting the current ECP may no longer be suited to current work conditions or hazards.