1.0 Purpose

- The purpose of this policy is to provide Ardent employees with general knowledge and guidelines enabling employees to anticipate, recognize, evaluate, and control industrial hygiene hazards in the workplace.

2.0 Scope

- This Industrial Hygiene Program and Policy is intended for support of and use by company operations both in business units and project operations.
- This is an awareness program and does not imply that any training associated with this program certifies or qualifies any employee to analyze worksites for industrial hygiene hazards, measure contaminants or determine safe exposure levels.

3.0 Policy

- All employees shall be trained in Industrial Hygiene Hazard Awareness.
- All employees who will potentially be exposed to industrial hygiene hazards and required to wear specialized PPE for protection will be required to undergo a “fit for work” exam to verify that the employee is physically fit to wear prescribed PPE.
- All employees are authorized to stop the work and immediately inform their supervisor if they believe an operation is unsafe or presents hazards that have not been identified and/or exceed acceptable exposure limits.
- All employees shall participate in the identification, evaluation, and control of industrial hygiene hazards.
- In the event a hazard is identified, and supervision cannot determine safe exposure limits from available documentation such as SDS documents or safe operation procedures, supervisors shall contact Ardent’s HSE Manager, a competent individual for the hazard, or a certified industrial hygienist for direction.
- All industrial hygiene sampling, testing, and monitoring must be conducted by a certified industrial hygienist or a designated third
party competent person. Ardent employees will not conduct sampling, monitoring, or testing of industrial hygiene hazards.

- Exposure monitoring and/or medical surveillance including type and frequency shall be as per the specific program and policy covering the hazard (i.e., Lead Safety Program).

- Hearing conservation with annual audiometric testing will be implemented for any employees exposed beyond the OSHA permissible noise exposure limits.

- Employees who will potentially be exposed to respiratory hazards and will require respiratory protection must be medically cleared by a licensed medical professional following completion of the appropriate medical questionnaire and passing a pulmonary function test (PFT).

- Employees requiring respiratory protection at the level of canister protection or SCBA must be fit tested for the make and model of equipment to be utilized, authorized to utilize respiratory protection, and trained on the equipment to be utilized prior to use.

- In the event a specific program or policy does not exist, Ardent Management shall determine exposure monitoring requirements.

### 4.0 Responsibilities

**4.1 Management** – Ardent Management is responsible for the following:

- Ensure that the HSE Management System adequately addresses industrial hygiene awareness and control and that the policy is reviewed annually and revised as necessary.
- Provide industrial hygiene hazard awareness training for all employees.
- Provide leadership and support for employees in communicating their responsibility to stop the work when unacceptable industrial hygiene hazards are discovered or suspected.
- Provide resources to address and correct any industrial hygiene related issues.
- Determine when hazard exposure monitoring is required, and which employees should be monitored based on task assignments.
- Ensure that employee exposures are adequately documented.
4.2 Supervision – Ardent Supervision is responsible for the following:

- Understand and enforce the Ardent Industrial Hygiene Policy.
- Provide guidance to employees on recognition and control of industrial hygiene hazards.
- Implement site controls isolating employees from industrial hygiene hazards.
- Immediately inform management of any industrial hygiene hazard exposures above acceptable limits.
- Provide immediate on-the-spot training for all employees on the jobsite regarding Ardent Industrial Hygiene Policy when necessary.
- Report industrial hygiene hazard exposures and Near Miss events.
- Enforce PPE requirements and provide discipline as necessary for PPE or any hazard control violation.

4.3 Employees – Ardent Employees are responsible for the following:

- Participate in and understand industrial hygiene hazard awareness training.
- Follow safety rules and guidelines regarding industrial hygiene hazard protection.
- Participate in JSA and hazard recognition activities. Make every effort to identify industrial hygiene hazards during daily JSA’s.
- Stop the work and immediately inform your supervisor if you believe an operation is unsafe or presents hazards that have not been identified and/or exceed acceptable exposure limits.
- Wear appropriate PPE.
- Inform your supervisor of concerns regarding industrial hygiene hazards in the workplace.

5.0 Hazard Recognition & Control

- Effective recognition and evaluation of industrial hygiene hazards involves being familiar with the causes and characteristics of the hazards. The major risk areas include air contaminants, chemical, biological, physical, and ergonomic hazards.
5.1 **Air Contaminants** – Commonly classified as particulate, gas or vapor contaminants, these typically include dust, fumes, mists, aerosols, and fibers.

- **Dusts** – are solid particles of organic or inorganic materials created by crushing, grinding, drilling, blasting, or scraping.

- **Vapors or Fumes** – are formed when volatile materials vaporize from a solid or liquid state to a gas. Evaporation of liquids or solids often form them. Examples are solvents evaporating from painting operations or cleaning fluids.

- **Mists** – are finely divided liquids suspended in the atmosphere. Mists are generated by liquids condensing from vapors back to liquids or by breaking up liquids by splashing, foaming, or atomizing.

- **Fibers** – are solids whose length is several times greater than their diameter. Like dusts, fibers are particles of organic or inorganic materials created by crushing, grinding, drilling, blasting or scraping.

- **Gases** – are formless fluids that at ambient temperatures expand to fill the space they occupy. Many industrial gases fall into this category such as acetylene, nitrogen, helium, argon, etc. Other gases may be generated by equipment such as carbon monoxide and still others may be generated by decomposition of materials such as methane or hydrogen sulfide.

5.2 **Chemical Hazards** – Harmful or toxic chemical compounds in the form of solids, liquids, gases, mists, dusts, fumes and/or vapors. They exert toxic effects on the body via the following methods.

- **Inhalation** – by breathing toxic materials into the lungs

- **Absorption** – by direct contact with the skin

- **Ingestion** – by eating or drinking contaminated food products

- **Determining the Degree of Risk** - There are three primary factors that determine the degree of worker risk due to exposure:

  - Potency of the toxins
  - Magnitude of exposure
• Duration of exposure

• SDS sheets contain a summary of important health, safety, and toxicological information on the products.

5.3 Biological Hazards – include bacteria, viruses, fungi, and other living organisms that can cause infections by entering the body. Occupations that deal with plants and animals or food processing may expose workers to biological hazards or any occupation that involves contact with bodily fluids.

5.4 Physical Hazards – include noise, vibration, illumination, temperature, and various form of radiation.

• Radiation – Excessive levels of ionizing or non-ionizing electromagnetic radiation can be harmful. Exposure to ionizing radiation, such as x-rays, can be controlled with time, distance and shielding. Increasing time, distance and/or shielding will reduce exposure. Exceptions are focused forms of radiation such as laser radiation where acceptable levels of time or distance can be effectively imposed.

• Noise – Many industrial workplaces experience high noise levels. Numerous options exist for reducing employee exposure to harmful noise levels.

• Replacing Equipment – Replacing old equipment with newer, quieter models.

• Repairing & Maintaining Equipment – Repairing or maintaining equipment reducing noise and vibration.

• Installing Barriers – Barriers may be installed such as acoustical booths or wall to absorb noise. PPE is also a type of barrier.

• Installing Dampening Devices – Silencers, mufflers, baffles, or any type of noise dampening device will reduce exposure.

• Limiting Exposure – Limiting the time or proximity of employee exposure to high noise levels by shift rotation, work station location, access during high noise durations, etc.

• Vibration – Noise and vibration are usually found together. Workplaces with high noise levels often include high vibration levels.
Many controls for noise will also apply to reducing vibration levels and employee exposure to harmful vibration levels.

- **Replacing Equipment** – Replacing old equipment with newer, smoother running models.
- **Repairing & Maintaining Equipment** – Repairing or maintaining equipment reducing noise and vibration.
- **Installing Isolation or Dampening Devices** – Anti-vibration mounts or other forms of vibration dampening device will help reduce employee exposure.
- **Limiting Exposure** – Limiting the time or proximity of employee exposure to high vibration levels by shift rotation, work station location, access during high vibration activities, etc.

- **Illumination Extremes** – Insufficient light and too much light can both result in stress on the employee. This hazard is easily controlled by ensuring adequate light for the work area and activities being performed.

- **Temperature Extremes** – Temperature extremes can be life threatening, both heatstroke and hypothermia present serious health risks. Recognizing workplace conditions that may lead to an at-risk health situation is an important step in controlling and avoiding these hazards.

5.5 **Ergonomic Hazards** – Ergonomics is the study of our body at work and includes but is not limited to sitting, standing, lifting, holding, pushing, pulling, reaching, walking, etc. Most ergonomic hazards manifest themselves in musculoskeletal disorders or MSD’s. Typical MSD’s are Low Back Pain, Carpal Tunnel Syndrome, Tendonitis, Trigger Finger, Herniated Spinal Disc, Rotator Cuff, Sciatica, Tennis Elbow and Carpet Layers Knee.

- **Signs & Symptoms of MSD’s** - Decreased range of motion, decreased grip strength, loss of function, stiffness, pain, tingling, burning, numbness, cramping.

- **Ergonomic Risk Factors** – Repetition, awkward postures, static postures, vibration, extreme temperatures, dynamic motions, and exertion of force.

- **Conditions & Activities** – that may contribute to ergonomic hazards and MSD’s:
• Constant motions without pauses or breaks
• Maintaining same position or posture while performing tasks
• Using hands as clamp to hold objects while performing tasks
• Bending or twisting when lifting loads
• Vibrating work surfaces or using hand and power tools
• Handling slippery objects
• Sitting for a long time
• Over reaching or extending
• Edge pressing into muscles or tendons while performing a task
• Repetition of task - performing the same motion over and over

**Controlling Hazards** – Below are some methods for controlling ergonomic hazards:

• Rotating employees performing at-risk activities to reduce exposure
• Reduce repetitive motions
• Alternating tasks
• Redesigning workstation to reduce exposure to specific hazards
• Change tools or equipment to ones better designed or more appropriate for the task
• Change materials to products easier to install or ones eliminating certain handling hazards.
• Change work processes to eliminate or reduce ergonomic hazards

### 6.0 Training

• Ardent will provide industrial hygiene hazard awareness training for all employees.

• **Training Content** - Training will cover the following topics:
  o Ardent Industrial Hygiene Policy
  o Responsibilities
  o Hazard Recognition & Control

• **Personnel Training** – Ardent personnel shall receive the following training:
  o All employees shall receive industrial hygiene hazard awareness training.
• **Training Frequency** - Training and re-training frequency shall be as follows:
  o Industrial hygiene awareness training shall be refreshed semi-annually as part of the Toolbox Safety Meeting Program, Hazard Communication agenda.

### 7.0 Reporting and Recordkeeping

- **Reports** – All industrial hygiene related incidents shall be reported.

- **Incident Report** - All industrial hygiene events resulting in injury, illness, or loss of consciousness of an employee shall be recorded as Incidents on an Ardent Supervisor Incident Report.

- **Near Miss Reports** - Failures in containment, control methods, isolation, etc., not resulting in employee injury, illness, or exposure, shall be recorded as near miss events on an Ardent Near Miss Report.

- **Medical Exams** – Medical exam records will be kept in the employee’s confidential medical record file and retained per regulatory requirements.

- **Industrial Hygiene Recordkeeping** – Industrial hygiene records including sampling, monitoring, and testing records will be maintained by the Corporate HSE department and retained per regulatory requirements.