1.0 **HEALTH & SAFETY POLICIES AND PROCEDURES**

1.1 **PURPOSE**

- Providing a safety and health program that will reduce the number of injuries and illnesses to an absolute minimum, not merely in keeping with, but surpassing, the best experience of operations, similar to ours.

- Safety rules are provided as guidelines for safe operations. All employees must follow these rules as a condition of employment.

- Our goal is zero accidents and injuries. To be successful, such a program must embody the proper attitudes toward injury and illness prevention on the part of supervisors and employees. It also requires cooperation in all safety and health matters, not only between supervisor and employee, but also between each employee and his or her co-workers. Only through such a cooperative effort can a safety program in the best interest of all be established and preserved.

- Everyone is obligated to know the safety standards for their area or job, and just as important, to abide by them. Supervisors must instill a positive attitude and safety awareness in their workers through personal adherence, personal contact, training, and regularly scheduled safety meetings. It is the duty of all employees to perform their work with maximum regard for the safety of themselves and coworkers.

- Our safety policies are based on past experience and current standards, and are also an integral part of the company's personnel policies. This means that compliance with the policies is a condition of employment and must be taken seriously. Failure to comply is sufficient grounds for disciplinary action or for termination of employment. Conscientiously following these safety standards and practices can help you stay safe, healthy, and save lives.

1.2 **SCOPE**

All employees will be given a copy of the Safety and Health Manual upon initial employment. All employees must sign and return the acknowledgement form after they have been given a chance to review the safety rules and ask any questions. The safety rules will be periodically reviewed by management in order to ensure that they are applicable and current, and updates will be promptly shared with all employees.

1.3 **DEFINITIONS AND ACRONYMS:**

- **Authorized Person:** A person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or job site (i.e., building maintenance, roof repair, etc.).

- **Competent Person:** A person capable of identifying existing and predictable hazards in the surroundings or working conditions, which are hazardous or dangerous to employees; a person who has the authorization to take prompt corrective action to eliminate such hazards.
• **Qualified Person:** An individual, who by possession of a recognized degree, certificate, or professional standing or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems relating to the subject matter, work, or project.

• **Anchor Point:** A secure point of attachment for lifelines, lanyards, or deceleration devices. An anchor point must be capable of supporting at least 5000 pounds (3600 pounds if engineered/certified by a qualified person) per person and must be independent of any anchorage being used to support or suspend platforms.

• **Full Body Harness:** Webbing/straps which are secured about an employee's body in a manner that will distribute the fall arrest forces over the thighs, pelvis, waist, chest and shoulders. Having means for attach in g it to other components of a personal fall arrest system, preferably at the shoulders and /or middle of the back.

• **Connector:** A device which is used to couple (connect) parts of the personal fall arrest system together.

• **Deceleration Device:** Any mechanism, such as a rope grab, rip-stitch lanyard, a specially woven lanyard, tearing or deforming lanyard, automatic self-retracting lifeline/lanyard, etc., which serves to dissipate a substantial amount of energy during a fall arrest.

• **Deceleration Distance:** The additional vertical distance a falling employee travels excluding lifeline elongation and free fall distance, before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the location of an employee's body harness attachment point at the moment of activation of the deceleration device during a fall, and the location of that attachment point after the employee comes to a full stop.

• **Designated Area:** Permanent location designed or approved for hot work operations to be performed regularly.

• **Free Fall:** The act of falling before a personal fall arrest system begins to apply force to arrest the fall.

• **Free Fall Distance:** The vertical displacement of the fall arrest attachment point on the employee's body harness between the onset of the fall and just before the system begins to apply force to arrest the fall.

• **Hot Work:** Any work involving burning, welding, or similar operations that is capable of initiating fires or explosions.

• **Guardrail System:** A barrier erected to prevent employees from falling to lower levels. This system includes a toe board, midrail and toprail able to withstand 200 pounds of force applied in any direction.
• **Lanyard:** A flexible line of rope or strap that has self-locking snap hook connectors at each end for connecting to body harnesses, deceleration devices, and anchor points.

• **Leading Edge:** The edge of a floor, roof, or other walking/working surface, which changes location as additional floor, roof, etc., is placed or constructed. A leading edge is considered an unprotected side or edge when not under active construction.

• **Lifeline:** A component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline). This serves as a means for connecting other components of a personal fall arrest system to the anchorage.

• **Low Slope Roof:** A roof having a slope of less than or equal to 4 in 12 (vertical to horizontal). A roof with approximately a 19.5 degree slope or less.

• **Management:** All persons, including owners, contractors, and so on, who are responsible for hot work operations.

• **Personal Fall Arrest System:** A system used to arrest (catch) an employee in a fall from a working level. It consists of an anchorage location, connectors, a body harness, and may include a lanyard, deceleration device, lifeline, or any combination of the before-mentioned items.

• **Permit:** A document issued by the permit authorizing individual for the purpose of authorizing performance of a specified activity.

• **Permit Authorizing Individual (PAI):** The individual designated by management to authorize hot work. The PAI cannot be the hot work operator.

• **PPE:** Personal Protective Equipment

• **Rope Grab:** A deceleration device, which travels on a lifeline and automatically, by friction, engages the lifeline and locks to arrest the fall of an employee.

• **Roof Work:** The hoisting storage, installation, repair and removal of materials or equipment on the roof.

• **Safety Monitoring System:** A safety system in which a competent person is responsible for recognizing and warning employees of fall hazards. All other fall protection systems must be deemed "infeasible" (through infeasibility study/review) to select/use a safety monitoring system.

• **Snap Hook:** A connector comprised of a hook-shaped member with a closed keeper which may be opened to permit the hook to receive an object and when released, automatically closes to retain the object. Snap hooks must be self-closing with a self-locking keeper which remains closed and locked until unlocked and pressed open for connection or disconnection, thus preventing the opportunity for the object to "rollout" of the snap hook.

• **Steep Slope Roof:** A roof having a slope greater than 4 in 12 (vertical to horizontal). A roof with a slope greater than 19.5 degrees.
• **Toeboard**: A low protective barrier that will prevent the fall of materials and equipment to lower levels, usually 4 inches or greater in height.

• **Total Fall Distance**: The maximum vertical change in distance from the bottom of an individual's feet at the onset of a fall, to the position of the feet after the fall is arrested. This includes the free fall distance and the deceleration distance.

• **Unprotected Sides and Edges**: Any side or edge of a walking or working surface (e.g., floor, roof, ramp, runway, etc.) where there is no guardrail at least 39 inches high.

• **Warning Line System**: A barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge, which designates an area in which work can be conducted without the use of guardrails, personal fall arrest systems, or safety nets to protect employees in the area. This will be utilized on any roof greater than 50 feet wide and in conjunction with a safety monitor only where the other forms of fall protection have been deemed infeasible to use.

• **Welding/Soldering**: Includes processes such as arc welding, oxy-fuel gas welding, open-flame soldering, brazing, thermal spraying, oxygen cutting, and arc cutting.

• **Warehousing**: Processing, receiving, shipping, and storage of equipment; layout, heights, floor loads, material handling, storage methods.

• **Building and grounds condition**: Floors, walls, ceiling, exits, stairs, walkways, ramps, platforms, driveways, aisles, mud and ice.

• **Housekeeping**: Waste disposal, tools, objects, materials, leakage and spillage, cleaning methods, schedules, work areas, remote areas, storage areas.

• **Electricity**: Equipment, switches, breakers, fuses, switch-boxes, junctions, special fixtures, circuits, insulation, extension cords, tools, motors, grounding, NEC compliance.

• **Ventilation**: Type, effectiveness, temperature, humidity, controls, natural and artificial ventilation and exhausts.

• **Machinery**: Points of operation, flywheels, gears, shafts, pulleys, key-ways, belts, couplings, sprockets, chains, frames, controls, lighting for tools and equipment, brakes, exhausts, feeding, oiling, adjusting, maintenance, lockout, grounding, work space, location, purchasing standards.

• **Personnel**: Training, experience, methods of checking machines before use, personal protective equipment, use of guards, tool storage, work practices, methods of cleaning, oiling or adjusting machinery.

• **Hand and power tools**: Purchasing standards, inspection, storage, repair, types, maintenance, grounding, use of handling.

• **Chemicals**: Storage, handling, transportation, spills, disposals, amounts used, toxicity or other harmful effects, warning signs, supervision, training, protective clothing and equipment.
• **Fire prevention**: Extinguishers, alarms, sprinklers, smoking rules, exits, and personnel instructed on separation and storage of flammable materials, drainage and spill containment, explosive-proof fixtures in hazardous locations, waste disposal.

• **Maintenance**: Regularity, effectiveness, training of personnel, materials and equipment used, records maintained, method of locking out machinery, general methods.

• **Personal protective equipment**: Type, proper size, repair, storage, assignment of responsibility, purchasing methods, standards observed, training in care and use, rules of use, method of assignment.

1.4 **HEALTH & SAFETY PROGRAM**

Brekhus will operate with the intentions of providing a safe and rewarding work environment for its personnel and provide a quality product and service to our customers.

1.5 **OUR COMMITMENT**

*It is our policy to provide safe working conditions; adopt and use safe working methods in accordance with federal and state safety regulations; require and provide access to training to use such safety devices as may be necessary and/or advisable for all employees. Federal laws include OSHA’s regulations for construction (29 CFR 1926) and for general industry (29 CFR 1910).*

• Brekhus Safety Committee shall be responsible for the coordination and administration of the Safety Program.

• It is the policy of Brekhus to cooperate in every way with OSHA Occupational Safety and Health Administration (OSHA) and other related agencies to ensure federal and state regulations compliance.

• We encourage employees to contact their immediate superior for information that will help them understand their responsibilities under the Occupational Safety and Health Act.

1.6 **OUR SAFETY AND HEALTH PROGRAM INCLUDES:**

• Providing mechanical and physical safeguards to the maximum extent that is possible.

• Conducting a program of safety and health inspections to find and eliminate unsafe working conditions or practices; to control health hazards; and to comply fully with safety and health standards for every job.

• Education and training for all employees in safety and health best practices.

• Providing necessary personal protective equipment and instructions for its use and care.

• Developing and enforcing safety and health rules; requiring that employees cooperate with these rules as a condition of employment.
• Investigating, promptly and thoroughly, every accident to find out its cause and to correct the problem to prevent its reoccurrence.

• The employer is responsible, and accepts the responsibility, for leadership of the safety and health program, for its effectiveness and improvement, and for providing the safeguards required to ensure safe conditions.

• Supervisors are responsible for demonstrating and developing productive and responsive attitudes toward safety and health themselves, and in those they supervise; ensuring that all operations are performed with the utmost regard for the safety and health of all personnel.

• Employees are responsible for active cooperation and participation with all aspects of the safety and health program, including compliance with all rules and regulations and for continuous safe job performance.

1.7 EMPLOYEE RESPONSIBILITY & ACCOUNTABILITY

Our objective is to create a safe working environment through knowledge, training, consistency and accountability. Safety is the responsibility of all personnel at Brekhus. Each employee is responsible for his/her personal safety. Duties and responsibilities of all personnel under our health and safety program are as follows:

1.8 SAFETY STANDARDS

• Brekhus complies and requires its employees to comply with all Federal/State Safety Health Laws and Regulations.

• You are required to comply with Safety practices listed on the attached General Safety Rules. Any new or changed Safety Rules will be explained during toolbox meetings.

• Complying with all laws while employed by Brekhus is mandatory

1.9 MANAGEMENT

• Administers the occupational Safety and Health Program.

• Develops programs and technical guidance for management and supervisors in the safety and health training of employees.

• Conducts inspections to identify unsafe conditions or work practices; completes written reports of inspections.

• Recommends programs and activities that will develop and maintain incentives for and motivation of employees in Safety and Health.

• Maintains the state health and safety poster, emergency telephone numbers, OSHA Form 300, and other notices required by federal and state laws. Ensures this information is posted in places where employees can see them on each job.
• Develops and maintains accident and incident investigation and reporting procedures and systems. Investigates all accidents and takes action to eliminate accident causes. Reportable incidents consist of fatalities, lost work day cases, near misses and without lost work days requiring medical treatment. Keep management informed of findings.
• Report accidents that result in an occupation fatality, amputation, loss of an eye, or hospitalization overnight.

1.10 PROJECT MANAGER/FIELD SUPERINTENDENT/FOREMAN
• Is knowledgeable of the safety and health regulations related to his/her area of responsibility; maintain an accident prevention program.
• Be accountable for the safety of employees regularly assigned to them, and those who may be working in their area temporarily. This includes the prompt correction of unsafe conditions or work practices, enforcement of established safety rules, laws, and procedures.
• Ensure each employee is provided with, wears or uses any prescribed personal protection equipment deemed necessary, according to the company safety and health program or appropriate safety regulations.
• Enforce all safety rules and regulations on a fair and equitable basis.
• Instruct each employee on the hazard of his or her job and how to avoid and/or control them. Take proper corrective action whenever unsafe behaviors or conditions are observed or reported.
• Ensure employees follow the preventive-maintenance program, and that any repair and replacement needs found during those activities are tracked to completion.
• Ensure that all employees are physically able to perform their work safely.
• Conduct regular safety inspections, and submit written reports to management upon completion. Determine what corrective action is needed when safety discrepancies are found, and establish a timeframe to correct them.
• Personally investigate all accidents and incidents involving their personnel and equipment. Also to be investigated are serious “near misses” occurring in their area to prevent similar circumstances from recurring. Accidents must be reported on an approved accident report form in accordance with company instructions
• Maintain the company’s job site medical kit.
• Maintains copies of applicable programs and OSHA forms on site, in accordance with company practice and policy. Ensure that the GHS Program and safety data sheet (SDS) are current.

1.11 ALL EMPLOYEES
• Will be responsible for their personal safety while employed with BREKHUDUS.
• Be familiar with and follow all company rules and regulations regarding safety.
• Use the required safety devices and proper personal protective safety equipment.
• Will ask questions if uncertain about any issue.
• Notify the supervisor immediately of unsafe conditions/acts, accidents, and injuries.
• Will attend all safety meetings.

1.12 SUB CONTRACTORS

All subcontractors working on Brekhus projects must provide their safety manual and procedures or follow the guidelines set forth in Brekhus’ Safety Program.

1.13 ACCOUNTABILITY & ENFORCEMENT

Employees are subject disciplinary action for violations of safety rules. Employees will be afforded instructive counseling and/or training to ensure a clear understanding of the infraction and the proper conduct under organizational guidelines. Nothing in this policy or this safety program will preclude management from terminating an employee for a safety violation. This is not a progressive discipline system, and any safety violation may lead to an employee’s termination without prior instruction or warning.

• Management reserves the right to impose any of the following disciplinary actions it deems appropriate:
  o Verbal warning with documentation in personnel file.
  o Written warning outlining nature of offense and necessary corrective action with documentation in personnel file.
  o Suspension.
  o Termination.

• Managers, including supervisory personnel, are subject to the above disciplinary action for the following reasons:
  o Repeated safety rule violations by employees under their supervision.
  o Failure to provide adequate training prior to assigning jobs.
  o Failure to report accidents and to provide medical attention to employees injured at work.
  o Failure to control unsafe conditions or work practices.
  o Failure to maintain good housekeeping standards and cleanliness in their departments.

2.0 WORKERS’ COMPENSATION MANAGEMENT

2.1 Reporting Injuries & Claims

The following actions must be followed on all accidents/injuries being submitted as a Workers’ Compensation claim.

2.2 Reporting Injuries

  o **Must be reported within 24 hours**, preferably immediately, to a supervisor, manager or human resources, who in turn will notify other appropriate company officials.
All accidents/incidents will be investigated by the supervisor, manager, or a safety committee member to determine the facts and take corrective action to prevent recurrence.

2.3 Non Emergencies

- An appointment will be made for all non-emergency claims by the injured employees with one of the designated medical providers, ASAP.

2.4 Immediate medical attention

- If immediate medical attention is required, the injured employee will be driven or sent to the nearest appropriate designated medical provider or hospital.

2.5 DESIGNATED MEDICAL PROVIDER VISITS

- The injured employee must sign and date the designated medical provider letter of injury (as soon as able).
- A copy is provided to the employee and one is turned in to human resources for the worker comp files.
- All follow-up paperwork, including; FIT for DUTY and Medical Provider Notes must be turned into the injured employee’s supervisor. The supervisor will turn all paperwork into human resources.

2.6 DESIGNATED MEDICAL PROVIDERS

I. Midtown Occupational Health Services
2420 W. 26TH Ave. BLDG D, STE 200
Denver, CO 80211
Phone: (303) 831-9393

II. Concentra Medical Centers—CO Denver North
420 E 58th Avenue, STE 111
Denver, CO 80216
Phone: (303) 292-2273

III. Concentra Medical Center—Cherry Creek
875 S. Colorado Blvd.
Denver, CO 80246
Phone: (303) 388-3627

IV. Center for Occupational Safety and Health
605 Bannock St. Pavilion H, 4th FL
Denver, CO 80204
Phone: (303) 436-7155

2.7 Supervisor Reporting Responsibilities

- Report the claim within 24 hours to Pinnacol Assurance. This can be done on Pinnacol’s website (www.pinnacol.com), by phone at 800.873.7242, or by fax at 800.361.5000.
3.0 **FIRE PREVENTION & PROTECTION**

a) Brekhus supervisors must ensure that the work facility is free of any accumulation of unnecessary combustible materials that are used. Supervisors have the responsibility to properly remove or dispose of such materials as soon as possible.

b) Piles of combustible debris (i.e., paper, wood, cardboard scrap, etc.) should be kept a safe distance from the building and removed as quickly as possible.

c) Containers used for the storage and/or dispensing of flammable liquids must be an approved type, of metal construction, and equipped with a self-closing lid and flash screen.

d) Storage of flammable liquids in the facility must be kept to the minimum amount necessary. Containers used for the storage of gasoline or gasoline mix should be 5 gallons or less, and should UL/FM approved steel containers.

e) Smoking must be restricted in areas where flammable liquids are being used or stored, including all paints, solvents, etc.; designated smoking areas as defined by Brekhus.

3.1 **Portable Fire Extinguishers**

a) Brekhus is responsible for ensuring that adequate portable fire extinguishers are available in the facility. Employees should have an extinguisher available in the event a small fire occurs.

b) In case of a fire emergency, call 911 immediately.

c) Portable fire extinguishers that are rated at least ABC will be provided for each 3,000 square feet of building area.

d) Travel from any point in the building to the nearest portable fire extinguisher should not exceed 100 feet.

e) Columns shall be painted or otherwise marked at or near the ceiling to identify locations of fire extinguishers in the work facility.

f) At least one portable fire extinguisher rated ABC must be located within 50 feet or areas where more than 5 gallons of flammable liquids or gases are stored or used the facility.

3.2 **Fire Extinguisher Maintenance and Use**

A. All portable fire extinguishers must be properly inspected and maintained. Seals must be placed on extinguishers that are ready and available for use.

B. Access to all portable fire extinguishers must be maintained and not obstructed through the storage of tools, equipment, and materials.

C. Employees must avoid placing fire extinguishers too close to the hazard being protected so the extinguisher can be accessed in the event of a fire.
In the event of a work-related fatality, OSHA (8000321.6742) must be notified within eight hours and work-related in-patient hospitalizations, amputations, or an employee's loss of an eye must be reported to OSHA within 24 hours, along with the Colorado Division of Workers' Compensation (303.318.8700).

   a) Complete the Accident Report/Incident Investigation Form and submit it to the head of human resources/safety committee administrator.

   1. An accident investigation will be conducted by the designated Safety Coordinator and documented following all work-related injuries. The supervisor or safety coordinator will be responsible for interviewing the injured employee and all witnesses. The accident investigation must confirm that the injury was job related for the resultant claim to be valid.

   2. Management will use information from the accident investigation to identify and implement changes that may help prevent future incidents.

3.3 Injury Follow-up Procedures

   a) Following an injured employee’s medical visit, the employer will obtain a copy of the medical providers’ status report.

   b) Injured employees will be entered into a modified job program in accordance with the attending physician’s recommendation until such time the physician’s evaluation clears the employee to fulfill his/her regular essential job functions.

   c) Modified duty procedures will be as follows:

      1. The employee’s supervisor will determine if the employee can return to his/her regular job duties within his/her medical restrictions.

      2. If the employee is unable to return to regular job duties, the supervisor will determine if the employee’s position can be temporarily modified to accommodate the restrictions.

      3. If the job cannot be modified, management will evaluate other tasks the employee may be able to perform until the employee is released to regular work duty or placed at maximum medical improve (MMI).

      4. If the employee is unable to return to a modified position, the medical restrictions will be re-evaluated after each doctor’s visit to ensure the employee returns to work as soon as possible.

   d) If required, an entry will be made on the OSHA 300 Log for all cases involving medical treatment.

   e) Complete records will be kept for all workers’ compensation claims.
4.0 CLAIMS MANAGEMENT

4.1 If an accident occurs, the employee must report the accident to their supervisor or safety manager. The supervisor must report it to the safety manager.

4.2 If the person needs medical attention, they will be driven to our designated provider. Everyone who is hurt on the job will be tested for alcohol and drugs. The supervisor or whoever takes the hurt employee to the provider will stay with that person and help fill out their clinic forms.

4.3 Investigate accident: Safety manager will talk to the employee about what happened. This could be done at the jobsite. Safety manager will also talk to other employees who witnessed the accident.

4.4 The Employers First Report of Injury Form will be filled out and mailed in by their supervisor within three days of the accident.

4.5 After investigating the accident, the safety manager will analyze whether changes could be made to help prevent any further injuries.

4.6 If people miss work, the safety manager will call them to see how they are doing. The safety manager will show concern that we want them back working. Do this at least two times per week if not daily.

4.7 The safety manager will call the doctor and clinic to make sure that the injured person is making all appointments and find out the status of our employee. Find out when they will be released to return to work. The call will be made once or twice a week depending on the situation.

4.8 Once the employee is released to go back to work, we will create a modified duty assignment if necessary.

4.9 Keep accurate records. Keep all their information from the case together in employee’s Workman Comp. claims file – employee first report of injury form, correspondence with CCIA, medical sheets from the provider and the doctor, etc.

4.10 Fill out the OSHA form 300 and post form by Feb. 1st of each year.
5.0 **SafetY Rules and Regulations**

5.1 Report to work rested and physically fit to perform your job.

5.2 No person shall, while under the influence of alcohol or narcotics, be permitted to enter any job site; nor shall intoxicating liquors or narcotics be brought onto any such job. Cause for Dismissal.

5.3 Wear clothing suitable for weather and your work.
   A. Torn or loose clothing, cuffs, neckwear, are dangerous.
   B. Shirts with sleeves must be worn at all times. It may save you from sunburn, weld or burn splatter, cement burns, or cuts.
   C. No Tank Tops.

5.4 Wear sturdy shoes suitable for our work- in good condition.
   A. Use of steel-toed safety shoes is strongly recommended.
   B. The use of canvas shoes is prohibited.

5.5 Use gloves, aprons or other suitable skin protection when handling rough materials such as stone, hot or cold materials and chemicals, or when cutting steel or welding.

5.6 Jewelry such as rings, bracelets, or neck chains should not be worn on the job. They often get caught on something, resulting in injury.

5.7 Special safety equipment is provided for your protection. Use when required. Keep in good condition. Report loss or damage.
   A. Hard hats must be worn in all construction areas or as indicated.
   B. Always use safety belts, lanyards, rope grabs, and lifelines when working the perimeter of buildings unprotected by barricades, or when working on scaffolds.

5.8 Wear proper eye protection if exposed to flying objects, dust, harmful rays, or chemicals.
   A. Never look at a welding arc or cutting torch operations.

5.9 Report all injuries, no matter how slight, to your Foreman at once. Then report to First-Aid station or to the designated provider for whatever treatment is necessary.
   A. No excuse for failure to comply with this order will be accepted.
   B. Accident reports must be filed as soon as possible.
   C. Know the location of all first-aid facilities and telephones for emergency.

5.10 Help promote good housekeeping. This included proper disposal of lunch bags, bottles, and personal scrap.
   A. Keep materials orderly. Prevent piles from falling or shifting.
   B. Remove trash piles as soon as they have built up.
   C. Remove or clinch nails in old lumber.
   D. Clean up oil, grease, and water spills immediately.
   E. Keep loose materials off stairs, walkways, ramps, and scaffolding. Keep walkways and exits clear at all times.
5.11 Read DANGER warnings in construction areas and on container labels such as No Smoking areas, etc.
5.12 Avoid shortcuts- use ramps, stairs, walkways, ladders, etc.
5.13 When entering different work areas, find out what safety precautions are required.
   A. Watch for tripping hazards.
   B. Be aware of the work going on around and above you and their dangers.
   C. Never walk under a suspended load.
   D. Watch for open areas unprotected by barricades.
   E. Station flagman or a look-out when working in a walkway or mobile traffic area.
5.14 Place barricades and signs to warn of DANGER when appropriate.
   A. Rope off perimeters while you are working on perimeters of building.
5.15 When lifting heavy material, keep your back straight, bend your knees and lift with your legs.
   Please refer to Back Injury Prevention section for further instructions.
5.16 Exercise care in storage and handling of granite, marble, or stone.
   A. Brace or tie back free standing opened crates and place in an area that is compatible for its weight.
   B. Never allow grease or oil near granite or marble.
   C. Handle with clean hands or gloves.
   D. Keep drills, saws, and wrenches free from excessive oil or grease.
   E. Do not wear oil soaked clothing.
   F. Place loose granite or marble slabs on "A" frames away from traffic or walkways whenever possible.
   G. Know the weight of the crate or slab so same can be placed in an area that will safely carry the weight.
5.17 Face ladders when climbing up or down.
   A. Use both hands and never carry anything up or down.
   B. Use hand line or hoist for loads.
   C. Use only sturdy ladders on a firm base.
   D. Where possible, angle out base ¼ of ladders working length.
   E. Use a ladder that will reach at least 3 feet above the landing and tie off ladder at the top.
   F. Use scaffold wherever ladder is not suitable.
   G. Never use metal ladders or scaffolds near high power electrical lines.
   H. Indiscriminate throwing of material from ladders, scaffold, or other high places will not be permitted.
   I. Use only OSHA approved ladders.
5.18 Standing scaffolds must be built and checked daily for safety.
   A. Provide good base for scaffold feet.
   B. Tie all sections together with pins and cross braces.
C. Tie and brace to building structure every other floor in height.
D. Plank with at least two 24" aluminum planks or four 10" wood planks. Overlap wood planking lengthwise not less than 6" or more than 12".

5.19 Swing scaffolds should be built safe and checked daily for safety.
A. All scaffolds must have strong 42" minimum high back rail and 4" minimum kickboards, front and back.
B. Check cables for frays and breaks. Replace bad cable immediately.
C. Check lifelines (one for each man) for frays and breaks. Replace bad lifelines immediately.
D. Check rigging and trolleys daily for loose or worn parts.
E. Individuals with a fear of heights need not work on swing stages. You may be jeopardizing the safety of the rest of the crew.

5.20 Tools make your job easier; keep them in good condition and safe at all times.
A. Keep all tools and materials away from the edge of scaffolds, platforms, perimeters, and shaft openings. Tools used in these areas should be tied by suitable means to user or structure.
B. Do not use tools with split, broken or loose handles.
C. Have tools with burred or mushroomed heads dressed.
D. Keep cutting tools including drills, sharp.
E. Know correct use of hand and power tools before using them. Use the right tool for the job.
F. Only qualified personnel should operate or service power tools, vehicles, and other machinery.
G. Before starting power tools or machinery, check the safety of all workmen in the area, including you. Be sure you have a clear area behind you before swinging a sledge hammer.
H. Never adjust or repair equipment while it is plugged in to power or machinery while it’s in motion... lock out or block to prevent movement.
I. Operate hoists and forklifts within rated capacity at safe speeds.
J. Report defective tools or machinery to Foreman immediately.

5.21 Keep a check on load lines, slings, clamps, blocks and tackle for defects, cracks and frays.
A. Roll up or hang up slings when not in use.
B. Replace all defective equipment.

5.22 Inspect electrical cords and equipment daily.
A. Consider all wires “live” until checked.
B. Be sure all cords and equipment have 3 wire ground receptacles.
C. Never use electric cords or equipment while standing in water. Keep cords out of puddles.
D. Splices or repairs must be proper and equal to cords quality. This should be done by qualified personnel only.
E. Place cords so as to avoid tripping hazard or getting damaged by oil, heat, or chemicals.

5.23 Know location of fire extinguishing equipment, fire exits, and fire alarms.
A. Flammable liquid containers shall be clearly labeled and stored in a separate area.
B. Use flammable liquids in small amounts and keep in approved, self-closing containers.
C. Do not refuel a hot running engine. Clean up spills.
D. Never use gasoline as a cleaner.
E. Store oily rags in covered metal containers or dispose of them safely.

5.24 Care when using air hose from compressor or oxygen bottles.
A. Never point an air hose at anyone, or use it to clean clothing.

5.25 Cutting and welding should be done by authorized personnel only.
A. Remove or shield nearby combustibles.
B. Keep a fire watch with fire extinguisher during and after work.
C. Always use proper eye, hand and body protection.
   1) Welding; use #10 or #12 shade viewing lens in suitable hood.
   2) Cutting; use #7 to #10 shade viewing goggles.
   3) Wear approved welding gloves.
   4) Wearing leather clothing (partial or complete) is recommended.
D. Check hose, fittings, and valves for leaks (soapy water).
E. Keep cylinders upright and secure at all times.
F. Keep oily rags away from oxygen (explosion danger).
G. Always light torch with “striker”.
   1) Never light with match or cigarette
   2) Never light in a keg or drum
H. Bleed a slight amount of oxygen from cylinder before attaching the hoses and gauges; and open valves slowly to prevent gauge damage.
I. Always close valves and bleed hoses when your work is finished.
J. Storage of oxygen and acetylene bottles should be separate and well-marked as to contents and DANGER.

5.26 Keep butane torches, propane torches, heaters and salamanders away from combustible materials.
A. Use only with adequate ventilation.
B. Keep fire extinguisher close by.

5.27 Do not ride on vehicles or mobile equipment unless specifically authorized.
A. Do not ride on fork lift. ONLY AN OPERATOR.
B. Do not ride on hook, ball, rigging or load.
C. Always be seated in any authorized vehicle unless designed for standing operator.
D. Loads on trucks and trailers should be safely secured before moved.

5.28 Report any unsafe conditions or equipment to Foreman, ours or theirs.

5.29 Keep “horseplay” and roughhousing away from the job. Practical jokes often become painful injuries.

5.30 Keep your mind on your job.
A. Temper must be kept under control always.
B. Learn the safe way to do your job before you start.
C. Be sure you thoroughly understand the job.
D. Work at a speed consistent with safety. “Foolish Hurry” such as running in passageways or on stairs or ladders is dangerous.
E. Keep your fingers, hands, and feet out of pinch points.

5.31 Failure to comply with these safety rules, Prime Contractors safety rules (where Brekhus is a subcontractor) and all OSHA regulations will result in: **DISMISSAL**.
6.0 **GENERAL SAFETY & HEALTH RULES**

*Brekus, its employees and subcontractors will observe and comply with the rules and regulations of pertinent regulatory agencies such as the United States Occupational Safety and Health Administration.*

**General Rules**

The Company considers these rules and regulations to be minimum standards and may adopt stricter rules and regulations for its operations.

6.1 Learn the right way - the safe way - to do your job. If you are not sure you thoroughly understand the job, ask your supervisor for further instruction.

6.2 Any accident, whether it requires first aid or not, must be reported to your supervisor.

6.3 Receive treatment for all injuries. Cuts or scratches can become infected unless properly cared for.

6.4 Know the location and first aid kits, emergency phone numbers, fire extinguishers, and fire exits when applicable.

6.5 All employees are encouraged to make suggestions that will assist in safe performance of work.

6.6 Report any unsafe condition to your supervisor at once. Don’t wait for someone else to do it, since someone may get hurt in the meantime.

6.7 Obey warning signs. They are posted to point out hazards or give you direction.

6.8 Practical jokes and horseplay lead to accidents; such actions are prohibited on job sites.

6.9 Machines are equipped with safety guards or controls for your protection, and they should not be removed. Never operate any machine unless all guards are in place and in proper operating condition. If guards or controls are not in proper condition, report this to your supervisor immediately.

6.10 Shut down machinery and be sure it has stopped before cleaning, oiling, or adjusting.

6.11 Before repairs on electrically powered equipment are begun, the main switch will be locked in the off position. The repairperson will retain the key to the lock. If there is more than one repairperson, each will lock the main switch with his lock to which only he has the key (Lock-out /Tag-out Program).

6.12 At no time is an employee allowed to climb or jump over machinery or equipment.

6.13 At no time is an employee to place his hands or feet near moving or rolling equipment.

6.14 All field employees must wear a shirt and long pants on any job site or company shops and base yards. Shirts must be long enough to completely cover the torso and must have at least short sleeves. Shirts that have buttons the full length of the shirt must be buttoned at least 3/4 of the way. Long shirttails must be tucked into the pants. Pants must be for construction work,
no jams, sweat-pants or shorts. Excessively loose, sloppy clothing and jewelry are considered field safety hazards and are prohibited.

6.15 All workers must maintain their hair at a length and/or in a manner that will not present a hazard to their personal safety.

6.16 Don’t attempt to lift or push objects that may be too heavy for you. Ask for help when you need it. Learn to lift the right way to avoid strains: bend your knees, keep your body erect. Then push upward with your legs. This method is much easier and safer. It uses the “lifting principle” - hands and arms for gripping, legs for lifting.

6.17 Never distract the attention of another worker; you may cause him or her to be injured.

6.18 Common sense is the most important safety rule of all. Please use it at all times.

6.19 If an operation calls for more than one person, all the required persons must be present before the operation is started.

6.20 No scaffold should be erected, moved, dismantled, or altered except under supervision of qualified individuals.

6.21 The footings or anchorage for scaffolds must be sound, rigid and capable of carrying the maximum intended load without settling or displacement.

6.22 Scaffolds and their components should be capable of supporting at least four times the maximum intended load.

6.23 Poles, legs or uprights or scaffolds should be plumb, and securely braced to prevent swaying and displacement.

6.24 Guardrails and toe boards are to be installed on all open sides and ends of platforms more than ten feet above the ground or floor.

6.25 To prevent movement, the scaffold system must be secured to the building at all times at intervals of 30 feet horizontally and 26 feet vertically.

6.26 Appropriate work shoes or boots will be worn at all times on the job site.

6.27 The Company will furnish a hard hat to every employee whose work requires one.

6.28 While on the job site, or at company shops and base yards, all workers must have safety glasses on their person at all times, except when within company offices. Safety glasses must be worn by all operators of power tools, by other personnel working in the immediate vicinity of anyone using a power tool, and in any other situation with a potential for injury to the eyes.

6.29 The Company will furnish safety glasses/goggles to every employee whose work requires them.

6.30 The Company will furnish hearing protection to every employee who works in a noise hazard area.

6.31 The Company will furnish appropriate gloves to every employee whose work requires them.

6.32 Any worker, when exposed to a fall hazard, as defined by OSHA, must be protected from falls by an OSHA approved fall prevention device, system, or practice, in compliance with OSHA 1926, Subpart M - Fall Protection.
6.33 The Company will furnish respirators and/or dust masks to every employee whose work requires them.

6.34 The Company will furnish reflectorized traffic vests to every employee whose work requires them.

6.35 Any employee who is furnished Personal Protective Equipment by the Company is required to wear such equipment at all times while doing the work for which the equipment is furnished.

6.36 Personal Protective Equipment furnished by the Company and damaged or worn out by use will be replaced free of charge, provided the worn or damaged equipment is turned in when

6.37 Be positive you know how to do a job safely before you start. Use - and do not remove from the area - any permanent safety devices or equipment.

6.38 Use only the machines, tools, and equipment you are authorized to use.

6.39 Work space around electric equipment and distribution boxes will be kept clear and accessible.

6.40 Circuit breakers, switch boxes, etc. will be legibly marked to indicate their purpose. Equipment or circuits that are de-energized will be locked out and tagged out. The tags will plainly identify the equipment or circuits being worked on

6.41 All employees will comply with the Company Hazard Communication Program.

6.42 Employees operating or riding as passengers in Company vehicles are required to wear seat belts at all times while the vehicle is in motion.

6.43 All job sites, company shops and base yards shall be clean, with all hazards either removed, or having appropriate warning and shielding devices in place, prior to leaving work for the day.

6.44 Any act that might endanger yourself or others and/or property will be considered a violation of safety rules and safety procedures.

A violation of any of the above safety rules is sufficient grounds for disciplinary action.

6.45 Compressed Gas Cylinders

6.45.1 All gas cylinders will have their contents clearly marked on the outside of each cylinder.

6.45.2 Cylinders must be transported, stored, and secured in an upright position. They will never be left lying on the ground or floor, nor used as rollers or supports.

6.45.3 Cylinder valves must be protected with caps and closed when not in use.

6.45.4 All leaking or defective cylinders must be removed from service promptly, tagged as inoperable and placed in an open spaced removed from the work area.

6.45.5 Oxygen cylinders and fittings will be kept away from oil or grease.

6.45.6 When cylinders are hoisted, they will be secured in a cradle, sling-board, or pallet. Valve protection caps will not be used for lifting cylinders from one vertical level to another.

6.46 Ladders

6.46.1 Ladders will be periodically inspected by a competent person to identify any unsafe conditions. Those ladders with structural defects will be removed from service, and repaired or replaced.
6.46.2 Straight ladders used on other than stable, level, and dry surfaces must be tied off, held, or secured for stability.

6.46.3 Portable ladder side rails will extend at least three feet above the upper landing to which the ladder is used to gain access.

6.46.4 The top or top step of a stepladder will not be used as a step.
7.0 **JOB SAFETY ANALYSIS**

Planned inspections go beyond routine site checks. It is a comprehensive means to determine the hazards involved, as well as potentially unsafe procedures most likely to occur in a given task or job.

**Inspections, checklists, task analysis, and observations Areas**

**Identification and Control of Hazards by Supervisors**

7.1 Maintaining a Safe and Healthy Workplace

A. Identify workplace hazards that exist now or could develop.

B. Install procedures to control these hazards and eliminate them if possible.

C. To begin, each supervisor must remember that this activity will have to be tailored to each specific jobsite—materials, processes, job descriptions, and production needs.

D. Once possible hazards have been identified and changes have been implemented, these safe practices and operations procedures must be monitored and maintained. A periodic self-inspection program is an effective tool in guiding and maintaining a safe workplace.
8.0 **SAFETY TRAINING**

8.1 Employee and Supervisor Training  
*An effective accident prevention program requires proper job performance from everyone in the workplace. Individual Safety Training is based on specific and general safety for each position and title.*

8.2 Supervisors must ensure that all employees know about the materials and equipment they work with, what known hazards are in the operation, and how you have had the hazards controlled or intend to eliminate them.

8.3 Initial and on-going training for new and veteran employees are crucial to ensuring a safe and injury free workplace.

8.4 The following types of safety training will be used in our accident prevention program:  
  a) Employees scheduled for any safety and health training will attend such training.
  b) New employees will be provided orientation training and will be furnished information and literature covering the company health and safety policies, rules, and procedures. This orientation training must be provided prior to the employee's exposure to the work environment.
  c) Individual job/task training, to include the applicable regulations/standards for their job, will be provided to all employees. Included in this training are the recognition, avoidance, and prevention of unsafe conditions, areas and activities that require personal protection equipment, and how to use protective equipment (such as respirators, etc.).

8.5 Monthly on-going safety training sessions, and/or "tailgate" training meetings, will be conducted to provide information and training on new equipment, new procedures, new chemicals, refresher/remedial training in specific areas, or meet annual requirements. Such training may be held in conjunction with the safety briefings/meetings addressed elsewhere in this program.

8.6 Supervisors will ensure their employees are scheduled and provided this training as required. Examples of specified training include (but not limited to):

- Safe handling/use of hazardous materials
- Safe slab handling
- Hazard communication (hazardous chemicals)
- Fall hazards and fall protection
- LockOut/TagOut procedures
- Scaffold use, and erection/dismantling

8.7 Training addressed above will be documented in the employees' personnel records and/or in a master training record.

8.8 **Ladder Safety Training**
1) When used for access to upper landing surface, side rails must extend three feet above landing surface.
2) Used at an angle where horizontal distance from top support to foot of ladder is approximately ¼ of working length of ladder.
3) Used on stable and level ground unless secured to prevent accidental movement.
4) Must not be use on slippery surfaces unless secured or provided with slip resistant feet.
5) Top step of stepladder must not be used as a step.
6) Nonconductive side rails if used where workers or the ladder could contact exposed electricity.

8.9 Personal Protective Equipment Training
1) Hard hats to be worn when there is a possibility of overhead exposure.
2) When operating saws, routers and any other shop equipment, all employees must wear safety glasses with side shields and earplugs or muffs.
3) When operating machinery where an employee will be standing in water, properly fitting rubber boots and gloves must be worn. Tennis shoes or similar footwear are not suitable.
4) Long pants and comfortable long sleeve or short sleeve shirts must be worn at all times.
5) When working with dry cutting, shaping, etc., a properly fitting respirator must be worn at all times.
6) Any personal protective equipment that is found to be defective should be replaced immediately.

8.10 Fall Protection Training
1) All open sided floors and platforms six feet or more above adjacent floor/ground level will be guarded by a standard railing (top and mid rail, toe board if required).
2) A stairway or ladder will be provided at any point of access where there is a break in elevation of 19 inches or more.
3) All stairways of four or more risers or greater than 30 inches high will be guarded by a handrail or stair rails.
4) When a floor hole or opening (greater than two inches in its least dimension) is created during a work activity, through which a worker can fall, step into, or material can fall through, a cover or safety guardrail must be installed immediately.
5) Safety nets will be provided when workplaces are more than 25 feet above the ground, water, or other surfaces where the use of ladders, scaffolds, catch platforms, temporary floor, safety lines, or safety belts is impractical.
6) Safety harnesses, lanyards, lines, and lifelines may be used in lieu of other fall protection systems to provide the required fall protection.
7) Adjustments of lanyards must provide for not more than a six-foot fall, and all tie off points must be at least waist high.
8.11 Scaffolds Training

a) Scaffolds will be erected, moved, dismantled, or altered only under the supervision of a competent person qualified in scaffold erection, moving, dismantling, or alteration.

b) Guardrails (consisting of top rail and midrail) will be installed on all open sides and ends of scaffold platforms and/or work levels more than 6 feet above the ground, floor, or lower level.

c) Scaffolds 6 feet in height with a minimum horizontal dimension in any direction less than 45 inches will have standards railings installed on all open sides/ends.

d) Platforms at all working levels will be fully planked. Planking will be laid tight with no more than one-inch space between them, overlap at least 12 inches, and extend over end supports 6-12 inches.

e) The front edge of all platforms will be no more than 14 inches from the face of the work, except plastering/lathing may be 18 inches.

f) Mobile scaffolds will be erected no more than a maximum height of four times their minimum base dimension.

g) Scaffolds will not be overloaded beyond their design loadings.

h) Scaffold components should not be used as tie-off/anchor points for fall protection devices.

i) Portable ladders, hook-on ladders, attachable ladders, integral prefabricated scaffold frames, walkways, or direct access from another scaffold or structure will be used for access when platforms are more than two feet above or below a point of access.

j) Cross braces will not be used as a means of access to scaffolds.

k) Scaffolds will not be erected, used, dismantled, altered, or moved such that they or any conductive material handled on them might come closer to exposed and energized power lines than the following:

   o Three feet from insulated lines of less than 300 volts;
   o Ten feet plus for any other insulated or uninsulated lines.

8.12 Electrical Training

a) Only trained authorized personnel are permitted to service electrical equipment.

b) Safety devices that have been installed in equipment, such as interlocks, covers and GFCIs are for the protection of all employees and are not to be circumvented.

c) Read and follow the equipment manufacturer's recommendations on the safe use of all equipment.

d) Ground leads on cords and equipment must be checked routinely as part of the ground assurance program or GFCIs must be used on all equipment.

e) Power, portable and/or cord plug connected equipment must be properly grounded or of double insulated type. All extension cords will be three-wire (grounded) type and designed for hard or extra usage (Type S, ST, SO, STO, or SJ, SJO, SJT, SJTO). Ground prongs will not be removed. Cords and strain relief devices/clamps will be in good condition.
f) Live electrical parts shall be guarded against accidental contact by cabinets, enclosure, location, or guarding.
g) Working and clear space around electric equipment and distribution boxes will be kept clear and assessable.
h) Circuit breakers, switch boxes, etc. will be legibly marked to indicate their purpose.
i) Temporary lights equipped with electric cords, nonconductive guards or grounded parts. Suspended temporary lights designed for suspension, temporary lights shall not be suspended by their electric cords, fastened with staples, hung by nails or suspended by wire.
j) Cables or cords passing through work areas elevated or protected from damage.
k) Damaged tools or cord sets tagged or removed.

8.13 Lock-Out/Tag-Out Procedures Training

This procedure establishes the minimum requirements for the lockout or energy isolating devices whenever maintenance or servicing is done on machines or equipment. It shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

- Sequence of Lockout
  1. Notify all affected employees that servicing or maintenance is required on a machine or equipment that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.
  2. The authorized employee shall refer to the company procedure to identify the type and magnitude of the energy that the machine or equipment utilizes, shall understand the hazards of the energy, and shall know the methods to control the energy.
  3. If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open switch, close valve, etc.).
  4. De-activate the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s).
  5. Lock out the energy isolating device(s) with assigned individual lock(s).
  6. Stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.
  7. Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) by testing to make certain the equipment will not operate.

**CAUTION:** Return operating control(s) to the neutral or “off” position after verifying the isolation of the equipment.

8. The machine or equipment is now locked out.
• Restoring Equipment to Service
• Service or Maintenance Procedures

*When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following should be taken:*

1. Check the machine or equipment and the immediate area around the machine or equipment to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
2. Check the work area to ensure that all employees have been safely positioned or removed from the area.
3. Verify that the controls are in neutral.
4. Remove the lockout devices and reenergize the machine or equipment. **Note:** The removal of some forms or blocking may require re-energization of the machine before safe removal.
5. Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.
9.0 **FIRST AID & CPR PROGRAM**

9.1 OBJECTIVE
First Aid/CPR Program Non-Controlled Copy The objective of the First Aid Program is to ensure adequate supplies and properly trained personnel are available for employees and visitors of BREKHUS Tile & Stone, INC and Brekhus Marble & Granite, LLC should an injury occur. BREKHUS will ensure that medical personnel are readily available for advice, consultation and emergency response. In the absence of a clinic or hospital near the workplace, a person or persons must be adequately trained to render first aid. First aid supplies shall be readily available at all locations. Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.

9.2 SCOPE
This program is designed to provide prompt medical attention in the case of any injury or illness prior to commencement of any project.

a) The provisions of this Policy are applicable to all BREKHUS employees and those contracted to BREKHUS where applicable. This Policy applies to all personnel who work with or whose job responsibilities require them to be familiar with the contents of this Policy, whether they work at any BREKHUS or customer facility or field location.

b) As with all Company policies and procedures, should our client’s policies or procedures be more stringent than, then the more stringent policy or procedure should be considered, subject to Brekus’ evaluation and written approval by the BREKHUS manager and as reasonably practicable, so long as it does not endanger the employee’s life or health, nor endanger the environment or public.

c) Management and the Health, Safety and Environmental (HSE) Coordinator will review and evaluate this Policy on an ongoing basis, or when operational changes within a facility occur that require revision. Effective implementation of this Policy requires support from all levels of Management within the Company. This written Policy shall be communicated to all personnel that are affected by it, and supersedes any similar policy.

9.3 REFERENCES
Occupational Safety and Health Administration, Department of Labor; 29 CFR 1910.151. 4.0

9.4 FIRST AID TRAINING

a) When locations are within the acceptable response time of outside providers of emergency services, BREKHUS will rely on these professionals to provide emergency services in the workplace. However, BREKHUS has elected to have employees trained to provide first aid and CPR and require them to perform these services as part of their job duties. 4 First Aid/CPR
Program Non-Controlled Copy BREKHSUS locations that are not within a reasonable response time (those locations exceeding three to five minutes) of emergency first aid or medical services from an outside provider must have a sufficient number of trained employees to perform first aid and cardiopulmonary resuscitation (CPR). Those trained under the response time requirement must be expected and required as part of their job assignment to perform these services in the event of an emergency.

b) All Drivers and Equipment Operators are required to be trained in basic first aid and CPR. This covers treatment of minor injuries and basic emergency procedures for more serious injuries or health problems.

c) Employees who may be required to render first aid in a respiratory emergency or who may be required to work as standby personnel during confined space jobs shall also be trained in CPR.

d) Training shall be conducted by a nationally accredited association (e.g., CPR Colorado, The American Red Cross, National Safety Council).

9.5 RESPONSIBILITIES

a) BREKHUS management shall implement, support and enforce this program, and periodically review and evaluate its overall effectiveness, modifying it as appropriate.

b) BREKHUS employees shall be familiar with and comply with the contents of this program.

c) Only those job designations listed in this section whose job duties require them to administer first aid or to respond to medical emergencies shall be covered under this program. For instance, employees who have been trained in CPR, but are not required to respond to medical emergencies or to administer first aid would do so as "Good Samaritans" only. ("Good Samaritans," however, should provide basic first aid and/or CPR to their level of training.)

d) It is the responsibility of the HSE Coordinator to conspicuously post emergency telephone numbers of a physician, hospital, ambulance and local authorities, and train all personnel on the location of the postings.

e) The employee has the responsibility as well as the authority to stop any job or task conducted in an unsafe manner and should immediately request Supervisor/HSE Coordinator involvement to rectify the issue. The employee’s judgment call, when made in good faith and using good judgment, shall be considered commendable even though the conclusion of the investigation might be found to the contrary. However, if the judgment call was not made in good faith and using good judgment, or was found to be insincere, the employee may be subject to disciplinary action in accordance with this Policy.

f) Enforcement of this Policy is the responsibility of each-and-every employee of B&B. For any violation of this Policy, whether willful or through negligence, the Designated Person in Charge, Immediate Supervisor, HSE Coordinator and/or Company Manager shall have the
responsibility as well as the authority to pursue corrective action in accordance with this Policy.

6.0 DEFINITIONS

Designated Basic First Aid Provider - Employees designated as First Aid Providers by management. Exposure Incident - refers to a specific exposure to the eye, mouth, other mucous membrane, non-intact skin or parenteral exposure to blood or other potentially infectious material that results from the performance of an employee's duties. A medical follow-up is required pursuant to an exposure incident. Basic First Aid Provider - Employees who routinely work at remote locations where medical facilities are more than three to five (3 to 5) minutes away (emergency medical services). Occupational Exposure - refers to reasonably anticipated skin, eye, mucous membrane, or parenteral (i.e., puncture) contact with blood or other potentially infectious body fluids or materials that may result from the performance of an employee's duties. Personal protective equipment is required to be worn when a potential occupational exposure exists.

9.6 HAZARD DETERMINATION

Any, and all, communicable diseases and bloodborne pathogens; Any hazards associated with the scene (e.g., water, electricity, traffic, etc.); Any hazards associated with the trauma (e.g., seizures, combativeness, etc.).

9.7 ENGINEERING CONTROLS

a) If it is reasonably anticipated that employees will be exposed to blood or other potentially infectious materials while using first aid supplies, BREKHUS will provide appropriate personal protective equipment (PPE) in compliance with the provisions of the Occupational Exposure to Bloodborne Pathogens standard, 1910.1030(d)(3) (56 FR 64175). This standard lists appropriate PPE for this type of exposure, such as gloves, gowns, face shields, masks and eye protection. Refer to Brekhus’ and’s Personal Protective Equipment Policy found in the Company’s Health, Safety and Environmental Manual.

9.8 PROCEDURES

a) 6 First Aid/CPR Program Non-Controlled Copy

b) First aid kits will be maintained at each location and in each company vehicle. All kits will be checked at least once per month as a minimum by the HSE Coordinator or immediate supervisor. The kits will be replenished as necessary, and will not be sent to an assignment in a depleted condition. 9.1.1 The first aid kits will be contained in a weatherproof container with individually sealed packages of each type of item listed in Appendix II (as a minimum).

c) Sufficient quantities relative to the size of the workforce will be maintained for minor emergencies such as cuts and skin abrasions.

d) Where the eyes or body of any employee may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body will be provided within
the work area for immediate emergency use. This will include but is not limited to portable and fixed emergency eyewash stations.

e) Where installed, eyewash stations will be periodically inspected to ensure proper emergency operation.

f) Damaged or faulty equipment must be repaired immediately. When equipment is damaged, activities that might potentially require the use of the emergency stations must be ceased until repairs are made or a suitable temporary replacement emergency station must be installed.

g) All designated basic first aid and CPR providers shall comply with the provisions of Brekhus’ Bloodborne Pathogens Program.

9.9 CONTRACT AND/OR TEMPORARY EMPLOYEES
The provisions of this procedure apply to all contract and temporary employees of B&B. Contract and temporary employees shall be trained and designated as basic first aid and CPR providers, and must provide current documentation.

9.10 DOCUMENTATION
a) Accurate records shall be maintained at all locations regarding personal injuries occurring at the workplace. Refer to the Company’s policy on Accident/Incident Investigation and Reporting Procedures whenever first aid is required.

b) Accurate training records of all initial and refresher first aid and CPR courses will be maintained by the HSE Coordinator.

9.11 FORMS
a) A written record or First Aid Injury Log (see Appendix I) should be maintained of all supplies used from the first aid kit. The purpose of recording supplies as they are used is to track possible repetition of injuries or illnesses in the workplace. First Aid/CPR Program Non-Controlled Copy that could possibly be prevented. The written record should contain the name of the injured, date, injured body part (i.e., finger, palm, etc.), treatment provided and the materials used.

b) A sample First Aid Injury Log Form may be found in Appendix I. First Aid/CPR Program Non-Controlled Copy Appendix II MINIMUM FIRST AID KIT CONTENTS Quantity Item 1 Absorbent compress at least 32 sq. inches (no side smaller than 4 in.); 16 1 inch x 3 inch Band Aids; 1 5-yard roll tape; 10 .5 gram/application antiseptic packs; 2 pair Medical exam gloves; 4 3 inch x 3 inch sterile pads; 1 40 inch x 40 inch x 56 inch triangular bandage 1 Biohazard bag 1 Universal Precaution Kit 1 Water gel (4 oz.) 1 Breathing Barrier 1 Instant Cold Pack 1 Eyewash (1 oz.) 6 Anti-Microbial Hand Wipes 1 Emergency First Aid Guide
10.0 FALL PROTECTION

10.1 Purpose and Scope
The purpose of this fall protection program is to establish guidelines to protect all employees engaged in outdoor or indoor work activities that expose them to potential falls from elevations. The scope of this fall protection program includes all agency/institutional buildings and staff. In particular, those staff engaged in work activities, which expose them to falls from heights of 6 feet or more.

10.2 Goals
The goal of this Fall Protection Program is to prevent the occurrence of falls from elevations of 6 feet or higher. This goal will be accomplished through effective education, engineering and administrative controls, use of fall protection systems, and enforcement of the program. This fall protection program will be continually improved upon to prevent all falls from occurring.

10.3 Types of Fall Protection Systems

10.3.1 An articulating man lift provided with a restraint system and full body harness to an anchor point below the waist (preferably at the floor level).

10.3.2 Guardrail with a toeboard, midrail and toprail.

10.3.3 Personal fall arrest systems.

10.3.4 Anchor points (rated at 5000 pounds per person).

10.3.5 Full body harness.

10.3.6 Restraint line or lanyard.

10.3.7 Retractable lanyard.

10.3.8 Rope grabs.

10.3.9 Connectors (self-locking snaphooks).

10.3.10 Engineered lifelines.

10.3.11 Warning lines.

10.3.12 Safety nets.

10.3.13 Safety monitor systems.

Appropriate fall protection will be determined by the task (job) to be performed.

10.4 Fall Protection Locations
Fall protection is required wherever the potential to fall 6 feet or more exists. Brekhus Tile & Stone, Inc. has identified the following places concerning fall protection:

1) All flat and low sloped roof locations, when within 6 feet of the roof edge or during roof repair/maintenance (4: 12 pitch or less).

2) All exterior and interior equipment platforms, catwalks, antennas/towers, etc.

3) All exterior and interior fixed ladders above 20 feet.

4) All mezzanine and balcony edges.

5) All open excavations or pits.
6) All tasks requiring use of the articulating man lifts.
7) All tasks requiring employees to lean outside the vertical rails of ladders (i.e., painting, stairwell light bulb replacement, etc.).
8) Scaffolding erection - 10 feet in height or greater.
9) Tuckpointing - chimney repair.
10) Gym/mezzanine/catwalk areas - whenever an employee must step outside the catwalk, additional fall protection (i.e., 6-foot lanyard to full body harness, self-retracting lanyard or rope grab system) shall be used.

Fall protection is not needed if an employee or employees are on a low slope roof for inspection/observation only!

10.5 Fall Protection Guidelines - Options
10.5.1 Engineering Controls
This should always be the first option for selection whenever possible (e.g., light bulb changing...telescoping arm, changing valves-relocate at ground level, etc.) or utilizing a contractor in extremely hazardous areas.

10.5.2 Guardrails
On all projects, only guardrails made from steel, wood, and wire rope will be acceptable. All guardrail systems will comply with the current Department of Commerce/OSHA standards (i.e., contain a 42” high toprail, a midrail and toeboard, which can withstand 200 pounds of force in any direction, ). These guardrails will be placed in the following areas if necessary or feasible based on job location or requirements:
1) On all open sided floors.
2) Around all open excavations or pits.
3) On leading edges of roofs or mezzanines.

10.5.3 Personal Fall Protection Systems
All employees on any project that will be required to wear a personal fall arrest or restraint system will follow these guidelines:
1) A full body harness will be used at all times.
2) Only shock absorbing lanyards or retractable lanyards are to be used so as to keep impact forces at a minimum on the body.
3) Only nylon rope or nylon straps with locking snaphooks are to be used for restraints.
4) All lanyards will have self-locking snaphooks.
5) The employee will inspect all personal fall arrest equipment before each use. Any deteriorated, bent, damaged, impacted, and/or harness showing excessive wear will be removed from service.
The maximum free fall distance is not to exceed 6 feet. Consideration must be given to the total fall distance. The following factors can affect total fall distance:

1) Length of connecting means (i.e., lanyard length, use of carabiners, snap hooks, etc.)
2) Position and height of anchorage relative to work platform/area (always keep above the head whenever possible).
3) Position of attachment and O-ring slide on the full body harness.
4) Deployment of shock absorber (max. 42”).
5) Movement in the lifeline.
6) Initial position of worker before free fall occurs (i.e., sitting, standing, etc.).

Calculating Total Fall Distance
It is the total length of shock absorbing lanyard + height of the person + the location distance of the O-ring from the work surface or platform.
Always allow a minimum of 6 feet of clearance above the ground, equipment, etc., at the end of the fall from the fall arrest point.

10.5.4 Engineered Lifeline
Lifeline systems must be designed and approved by an engineer or qualified person. Lifeline systems must be engineered to have appropriate anchorages, strength of line designed to hold X number of individuals connected to it, line strength to aid in the arrest of a fall, and durability to hold a fallen employee(s) suspended until a rescue can occur.

10.5.5 Warning Line System
All work on a flat roof greater than 50 feet wide, which is performed 6 feet or further back from the edge of the roof can be completed by installing a Warning Line and using a safety monitor. If the roof is flat and less than 50 feet wide, a competent person safety monitor may be used. Warning Lines will consist of the following:

1) Will be erected 6 feet from the edge of the roof.
2) Be constructed of stationary posts made of wood or metal.
3) Wire or nylon rope and "Caution" tape will be strung from post to post and must be able to withstand 16 pounds of force.
4) The warning line will guard the entire perimeter of the roof where work is being performed.

If an employee must access an area within 6 feet of the roofs edge, for reasons other than exiting the roof via a ladder or fixed industrial ladder, another employee must monitor that individual and warn him/her of any dangers. If another employee is not available to act as a safety monitor, then the employee must don a full body harness and attach a fall restraint lanyard to an anchor point to prevent reaching the edge of the roof.
10.5.6 Inspection of Fall Protection Systems

The following criteria will be utilized to maintain all equipment in good working condition:

10.5.6.1 Full Body Harnesses

1. Inspect before each use.
   a. Closely examine all of the nylon webbing to ensure there are no burn marks, which could weaken the material.
   b. Verify there are no torn, frayed or broken fibers, pulled stitches, or frayed edges anywhere on the harness.
   c. Examine the D-ring for excessive wear, pits, deterioration, or cracks.
   d. Verify that buckles are not deformed, cracked, and operate correctly.
   e. Check to see that each grommet (if present) is secure and not deformed from abuse or a fall.
   f. The harness should never have additional punched holes.
   g. All rivets should be tight and not deformed.
   h. Check tongue/s traps for excessive wear from repeated buckling.

2. A competent person will complete an annual inspection of all harnesses and documentation will be maintained (see Appendix 1).

3. Storage will consist of hanging in an enclosed cabinet, to protect from damage.

4. All harnesses that are involved in a fall will be destroyed.

10.5.6.2 Lanyards/Shock Absorbing Lanyards

1) Inspect before each use.
   a) Check lanyard material for cuts, burns, abrasions, kinks, knots, broken stitches and excessive wear.
   b) Inspect the snap hooks for distortions in the hook, locks, and eye.
   c) Check carabiner for excessive wear, distortion, and lock operation.
   d) Ensure that all locking mechanisms seat and lock properly.
   e) Once locked, locking mechanism should prevent hook from opening.
   f) Visually inspect shock absorber for any signs of damage, paying close attention to where the shock absorber attaches to the lanyard.
   g) Verify that points where the lanyard attaches to the snap hooks are free of defects.

2) A competent person will complete an annual inspection of all lanyards and documentation will be maintained.

3) Storage will consist of hanging in an enclosed cabinet, to protect from damage.

4) All lanyards that are involved in a fall will be destroyed.
10.5.6.3 **Snaphooks**
1) Inspect before each use.
   a) Inspect snaphook for any hook and eye distortions.
   b) Verify there are no cracks or pitted surfaces.
   c) The keeper latch should not be bent, distorted, or obstructed.
   d) Verify that the keeper latch seats into the nose without binding.
   e) Verify that the keeper spring securely closes the keeper latch.
   f) Test the locking mechanism to verify that the keeper latch locks properly.
2) A competent person will complete an annual inspection of all snaphooks and documentation will be maintained.
3) All snaphooks involved in a fall will be destroyed.

10.5.6.4 **Self-Retracting Lanyards/Lifelines**
1) Inspect before each use.
   • Visually inspect the body to ensure there is no physical damage to the body.
   • Make sure all nuts and rivets are tight.
   • Make sure the entire length of the nylon strap/wire rope is free from any cuts, burns, abrasions, kinks, knots, broken stitches/strands, excessive wear and retracts freely.
   • Test the unit by pulling sharply on the lanyard/lifeline to verify that the locking mechanism is operating correctly.
   • If the manufacturer requires, make certain the retractable lanyard is returned to the manufacturer for scheduled annual inspections.
2) A competent person will conduct monthly inspection of all self-retracting lanyards/lifelines and documentation will be maintained.
3) Service per manufacturer specifications (1-2 years).
4) Inspect for proper function after every fall.

10.5.6.5 **Tie-Off Adapters/Anchorages**
1) Inspect for integrity and attachment to solid surface.
2) A competent person will complete an annual inspection of all tie-offs and anchorages and documentation will be maintained.
3) All tie-offs and anchorages will be destroyed after a fall.

10.5.6.6 **Articulating Man Lift**
1) Inspect before each use.
2) Inspect/service per manufacturer guidelines. Forklift, scissors lifts, and safety nets will be inspected at the beginning of each shift in use. Structural integrity of the forklift basket will be checked per the same schedule.
3) A competent person will complete an annual inspection of the forklift basket and documentation will be maintained.

10.5.6.7 Horizontal Lifelines
1) Inspect before each use for structural integrity of line and anchors.
2) A competent person will complete an annual inspection.

10.5.6.8 Guardrails
1) Temporary systems - Daily visual inspection will be completed by a competent person.
2) Temporary systems - Weekly, a complete structural inspection will be completed by a competent person.
3) Permanent systems - Annual structural inspections will be completed by a competent person with future frequency of inspection defined based on conditions/controls present.

10.6 Storage and Maintenance of Fall Protection Equipment
1) Never store the personal fall arrest equipment in the bottom of a toolbox, on the ground, or outdoors exposed to the elements (i.e., sun, rain, snow, etc.).
2) Hang equipment in a cool, dry location in a manner that retains its shape.
3) Always follow manufacturer recommendations for inspections.
4) Clean with a mild, nonabrasive soap and hang to dry.
5) Never force dry or use strong detergents in cleaning.
6) Never store equipment near excessive heat, chemicals, moisture, or sunlight.
7) Never store in an area with exposures to fumes or corrosive elements.
8) Avoid dirt or other types of build-up on equipment.
9) Never use this equipment for any purpose other than personal fall arrest.
10) Once exposed to a fall, remove equipment from service immediately.

10.7 Fall Protection Training - Document the attendance of all trainees (see Appendix 5).
All employees engaged in fall protection will be trained and have the knowledge to:
1) Recognize the fall hazards of/on their job sites.
2) Understand the hazards associated with working near fall hazards.
3) Work safely in hazardous areas by utilizing appropriate fall protection measures.
4) Understand and follow all components of this fall protection program.
5) Identify and understand the enforceable Department of Commerce/OSHA standards and ANSI standards that pertain to fall protection.

10.8 Enforcement
10.8.1 All staff is subject to discipline.
10.8.2 Documentation of any violations will be kept in the staff member's personnel file.

10.9 Rescue Procedures

10.10 Rescue Methods/Options of Fallen Personnel
In the unlikely event that a fall arrest occurs on-site, personnel with the use of an articulating man lift or ladders where feasible, will rescue all employees. Alternate rescue would be through the local emergency services.

10.11 Communication Issues
In the event of a fall, the following people will be notified as soon as possible.
   1) Rescue personnel [i.e., maintenance personnel].
   2) Manager/Supervisor.
   3) Safety officer/coordinator
   4) Fire Department and emergency medical services if necessary.

At the beginning of any work activity where fall protection is an issue, rescue plans must be identified and discussed with all employees in case of a fall. The Superintendent and/or Project Manager will develop the rescue plan(s).

All employees involved in a fall arrest or fall will be sent immediately for a medical evaluation to determine the extent of injuries, if any.

10.12 Fall Investigation
All fall investigations will be conducted by the Superintendent and/or Project Manager.
The following documentation will be completed as part of the fall investigation:
   1) Interviews with staff and witnesses.
   2) Employee injury/accident report.
   3) Supervisor injury/accident report.

10.13 Program Evaluation
This fall protection program will be evaluated periodically to determine the effectiveness. The following criteria will be used to evaluate its performance:
   1) Accident reports
   2) Number of accidents.
   3) Management/staff compliance with program components.
   4) Periodic on-site audits.
   5) Staff feedback and interviews.
10.14 Contractors
All outside contractors working in or on the premises of Brekhus jobsites will be required to follow the guidelines set forth in this fall protection program. Contractors in the pre-job meeting will be informed of these requirements as well as the on-site construction rules that apply.

11.0 BACK INJURY PREVENTION
11.1 Objective
The participant will understand how to care for their back by learning about body mechanics, ways to change lifestyle, the difference between a strain and sprain, some common mistakes made when lifting, and the eight steps to proper lifting.
11.2 Goal
This program provides information on proper care of the back to help reduce the potential for back injuries in the workplace and at home.

11.3 Introduction
Everything we do affects our back. Unfortunately, the back is not very resilient. Once the back has been injured, it will never be as strong as it was before the injury. How many times a day to lift, push, pull, stretch, and otherwise put a strain on our back? Prevention is the key to protecting our back from injury during these activities.

11.4 Body Mechanics
Body mechanics is the proper way to move and position the body for different activities in order to prevent injuries. It is important to remember that our bodies do not stop functioning when we go home from work. We need to follow the same guidelines both at work and home. The natural position of the back is an “S” curve. This is referred to as the neutral position. To keep the neutral position and for good posture, we need to learn to maintain a straight line, from midline of the ears - to the shoulders - to midline of the hips - to midline of the knees - to midline of the ankle. This means standing tall, pulling in our stomach, and tightening our buttocks. Think of it as a plumb line from the ears to the knees. This will keep our back in a natural “S” curve. Our back needs to be maintained in the neutral position when sitting, standing, sleeping, reaching, and pushing. Many of us spend a large part of our day sitting. Sitting increases weight on the spine. Slouching can place an additional pressure on the back.
11.5 Some possible solutions for proper sitting

a) Have a chair with maximum adjustability;
b) Maintain neutral position;
c) Move frequently (take micro breaks); and
d) Have adjustable work surfaces.
e) If your job includes long periods of standing, you should place one foot on a footrest.
f) Raise the front of the pelvis and reduces the possibility of a swayback condition.
g) Alternate from one foot to the other frequently.
h) Adjust your work surface height to keep from bending over while working.
i) If your work area is a cubicle, you can adjust the desk height.
j) If you have a regular desk, and cannot find a way to correct the height, adjust your chair to fit the desk and use a footrest.
k) When arranging your work area or the company storage room, consider each object carefully in order to avoid reaching overhead or bending over.
l) Think about how often the object is used as well as the weight of the object.
m) The best lifting zone is between the shoulders and waist.
n) Place heavy and frequently used objects near waist height to reduce bending and twisting to reach the object.
o) Place lighter objects higher or lower.
p) Use dollies or carts to move heavy objects rather than carrying them.
q) Pushing an object is much better for your back than pulling it.
r) If you push, you can see over your load and use your legs, not your back.
s) Keep the object in front of you and stay as close to the object as possible, as this gives you more control and direction.
t) Sleeping is very important to maintain physical and mental health.
u) Most of us sleep between 6-8 hours per day.
v) Even while asleep, you can injure your back if you do not maintain good back posture.

11.6 Common Lifting Mistakes

a) Bending forward at the waist with legs straight. When you bend forward at the waist with legs straight, you require the use of the muscles in your lower back and the weight of the object being lifted will include the weight of your upper body.
b) Using fast jerky motions. This puts stress on your lower back muscles and may cause sprains and strains.
c) Bending and twisting, when lifting, forces the spine into a position of weakness and removes the natural “S” curve of strength from the lifting process.
d) Handling the load too far away from the body. The back is like a lever system. The distance between the load and the fulcrum (point of support) can be considered the distance between the body and the object being lifted.

e) Failure to plan the lift. You need to check the path of travel to be sure it is clear. Size up the load and if it is too heavy or bulky for you to lift alone, ask for help.

11.7 **Eight Steps to Proper Lifting**

*(YouTube video) [https://youtu.be/901uQgfiuVk](https://youtu.be/901uQgfiuVk)*

*There are eight steps to follow in doing a safe lift. They may seem very simple but if you do all of them each time you lift; your chances of an injury will be greatly diminished.*

**When Lifting**

1) Size up the load – check to ensure the load is stable and balanced. Test the weight. Try moving it with your foot, if you cannot, you probably need to ask for help.

2) Plan the job - consider all possibilities. Is the path clear? What is the weight of the load? How much stress will be placed on your back? Is there traffic, a tripping hazard, a doorway to go through, or a stairway to go up, or down? Avoid carrying an object that requires two hands to hold, either up or especially down, a flight of stairs. Use the elevator. Plan a rest stop, if needed.

3) Establish a base of support - use a wide, balanced stance with one foot in front of the other. Make sure you have firm footing and that your feet are a shoulders-width apart. This staggered stance gives you the stability of not falling over and being able to secure the load.

4) Bend your knees, keep your heels off of the floor and get as close to the object as possible. Always lift with your legs and not your back.

5) Get a good grip with your palms and make sure you have an adequate hold on the object. Be certain you will be able to maintain a hold on the object without having to adjust your grip later. You can use gloves to help maintain an adequate grip, but don’t rely on gloves because they can de-sensitize the fingers making you unable to feel the object.

6) Lift gradually with your legs without using jerky motions. By using your leg strength, your chance of lower back injury is greatly reduced.

7) Keep the load close to prevent arching your lower back. As you begin the lift, tighten your stomach muscles and keep your head and shoulders up. The closer the load is to your spine; the less force will be placed on your back.

8) Pivot - don’t twist. Move your feet in the direction of the lift. This will eliminate the need to twist at the waist.

Repeat five times.
11.8 Summary
You cannot always avoid lifting, but it is important to know your body’s limitations and how to use proper techniques for protecting your back against strains and sprains. The best way to prevent back injuries is to develop good health habits. Learn to use good body mechanics, including standing, sitting, pushing, pulling, and sleeping. Make some changes in your lifestyle, such as healthy eating habits and exercise regularly. Avoid common lifting mistakes and use proper lifting procedures.
12.0 JOBSITE STRETCHING EXERCISES

12.1 KNEE STRETCH
- In a standing position, support yourself by holding onto a stable object, like a wall or a table that is bolted to the floor.
- Bend your right knee, bringing your foot up toward the back of your thigh.
- Grasp your foot with your right hand, gently stretching your knee, moving your foot toward the back of your thigh.
- Slowly release your foot and return to the original standing position.
- Repeat, alternating legs, five times each leg.

12.2 ARMS, SHOULDERS AND RIB CAGE
- Interlace your fingers.
- With your palms facing upward above your head, press your hands upward, stretching your arms. Hold for five seconds.
- Gently stretch to one side, hold for five seconds and return to center.
- Gently stretch to opposite side, hold for five seconds and return to center.
- Repeat five times.
- VARIATION: Press hands forward at shoulder level.

12.3 WRISTS
- With your forearm in a comfortable horizontal position and your palm toward the floor, bend your wrist down.
- Then raise your hand, extending your wrist.
- Repeat five times.

12.4 SHOULDERS AND ARMS
- Extend one arm at shoulder level across your chest.
- Place your opposite hand on your elbow and gently apply pressure toward the opposite shoulder, stretching your arm across your chest.
- Repeat, alternating sides.

<table>
<thead>
<tr>
<th>Time</th>
<th>Exercise</th>
<th>Minutes</th>
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<tbody>
<tr>
<td>Pre-shift or start of shift</td>
<td>Neck</td>
<td>4-5</td>
</tr>
<tr>
<td></td>
<td>Shoulder circles</td>
<td></td>
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<tr>
<td></td>
<td>Arms, Shoulders and Rib cage “fencing”</td>
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<tr>
<td>Mid-point</td>
<td>Shoulders and arms</td>
<td>3-4</td>
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12.5 Construction workers need to warm up to meet the job’s physical demands. Simple stretching exercises will warm up muscles, improve elasticity and help keep you comfortable at work. Follow these general guidelines:

- Breathe while exercising. Don’t hold your breath.
- Exercise regularly. Develop a pattern of exercising various parts of your body at regular intervals throughout your workday — before discomfort occurs. (See Sample Exercise Schedule at right.)
- Stretch gently. Avoid jerky movements.
- Go easy at first. Start with a few exercises and gradually increase.
- Discontinue if pain occurs. Pain and discomfort after you exercise may indicate that you did too much. Check with a medical professional when in doubt.

12.6 NECK

- Start with your head facing forward.
- Turn your head slowly to one side as far as comfortable.
- Then turn to the other side.
- Repeat five times.

12.7 CHEST AND SHOULDERS

- Bend your elbows with your hands near your shoulders.
- Breathe in through your nose. As you exhale, lower your elbows down and back. Aim your elbows at your back pockets.
- Hold this position for a few seconds and then relax.
- Repeat five times.
- VARIATION: Keep elbows at shoulder height.

12.8 “FENCING”

- In a standing position, place your hands against a stable object or wall to support yourself. Move one foot back about two feet. Be sure that both feet point forward.
• Shift your weight forward over the foot in front, bending the forward knee up to 80–90 degrees.
• Hold the position for 1–2 seconds and slowly return to the standing position, keeping the forward foot out in front.
• Repeat five times.
• Switch position with the opposite leg forward and repeat five times.

12.9 SHOULDER CIRCLES
• Slowly move your shoulders in a circular motion: upward, forward, downward and backward for forward circles.
• Reverse the direction for backward circles.
• Repeat five times each direction.

12.10 SHOULDERS, BACK AND HIPS
• Place your palms on your lower back while in a standing position.
• Leaning your shoulders back, stretch your upper body backwards. Hold this position for five seconds.
• Return to a neutral position.
13.0 **OSHA INJURY INFORMATION**

The OSHA Form 300 log of all recordable occupational injuries and illnesses will be maintained at each main office. This involves the superintendent ensuring that the required injury information is forwarded to the main office for posting onto the master log within seven days after the accident has occurred. If the construction site is open for a year or more, a separate log will be maintained for the site, either at that job site by the superintendent or in the main office. The summary section of the OSHA Form 300 must be posted at each job site by February 1st of the following year and remain in place until April 30th.
14.0 **HAZARD IDENTIFICATION, ASSESSMENT, AND CONTROL**

Hazard identification and elimination is not only an inherent responsibility of supervision in providing a safe workplace for employees, but also requires employee involvement. As such, hazard evaluation and control shall be an on-going concern for all.

14.1 **Responsibility**

It is the responsibility of everyone (management, supervisors, and all employees) to identify, report, and correct, all possible hazards.

14.2 **Inspections & Compliance**

1. The company has a procedure for conducting inspections of jobsites for compliance with health and safety rules.

2. The purpose of the in-house inspection is to identify hazards and unsafe practices before they cause an injury or accident. Formal safety and health inspections will be conducted under the following minimum timelines:
   - Safety and Health Manager: Monthly inspection of all fixed facilities and shop.
   - Project Superintendent: Monthly inspection of his/her project. More often as different phases of construction may warrant.
   - Foremen/supervisors: Weekly inspection of responsibility of jobsite.

3. The company’s Safety and Health Program will be reviewed by the Health and Safety Administrator on an annual basis.

4. After completing jobsite or facility inspections, the person making the inspection will:
   - Discuss findings with employees/persons responsible for creating the condition. Invite their comments, suggestions and aid.
   - Where sub-contractors on the job cause hazards, discuss the situation with the job superintendent; then identify the problem to the owner, contractor, and other contractors involved.
   - Ensure recommended corrections/changes are transmitted to, and/or discussed with the proper supervisor/person for correction.
   - Follow up on changes, corrections, and other actions necessary.
   - If applicable, provide copy of checklist to company health and safety person, along with statement of corrective actions taken or still required.
   - Substances during the Shop/Safety meetings. Whenever a new hazard is introduced, additional training will be provided.

Foremen will be trained regarding hazards and appropriate protective measures so that they will be available to answer questions from employees and provide daily monitoring of safe work practices.

14.3 **Hazard Communication Program**

1) Company Policy

2) OSHA Hazard Communication Standard
3) Chemical List
4) MSDS Book
5) Training Program

14.4 General Company Policy
To protect the health and safety of our employees and to comply with OSHA Hazard Communication standard (29 CFR 1910.1200) and Federal Regulations, BREKHUS has developed this Hazard Communication Program.
This program will:
1. Cover all operations which may expose employees to hazardous substances as a result of normal working conditions or possible emergency situations.
2. Provide information about the hazardous substances we use and procedures to ensure the safe handling of those substances.
3. Provide training to identify hazardous substances.
4. To be available, upon request, to all employees, their designated representatives and OSHA.

The program coordinator is the Safety Administrator. They will review and update the program as necessary.

14.5 List of Hazardous Chemicals
We have made a list of all hazardous chemicals used in this facility and on job sites. We also have compiled a book containing all MSDS's on the list of chemicals. The hazardous chemical information and the MSDS book are located in the shop area on the "Employee Right To Know" station. New MSDS's are posted on the lunch room bulletin board for two (2) weeks after they are received.

14.6 Material Safety Data Sheets (MSDS)
MSDS's provide you with specific information on the substances that you use. A book containing an MSDS on all hazardous substances we use is maintained at the "Employee Right To Know" station. (Safety Committee is responsible for acquiring and updating MSDS's. Safety committee will contact the material manufacturer or vendor if additional research is necessary or if an MSDS has not been supplied with the initial shipment.

14.7 Labels and Other Forms of Warning
Safety Committee will insure that all hazardous chemicals in the plant are properly labeled and updated, as necessary. Labels should list at least the chemical identity, appropriate hazard warnings, and the name and address of the manufacturer, importer or other responsible party. Safety Committee will refer to the corresponding MSDS to assist you in verifying label information.
Containers that are shipped from the shop will be checked by the truck driver to make sure all containers are properly labeled.

If you transfer chemicals from a labeled container to a portable container that is intended only for your immediate use, no labels are required on the portable container.

14.8 Hazard communication Training

Everyone who works with or is potentially exposed to hazardous substances will receive initial training on the Hazard Communication Standard and the safe use of hazardous substances.

14.9 The training plan will cover the following items:

a) Information on which hazardous substances are in the work area.
b) How to read and interpret information on MSDS's and labels.
c) Any physical or health hazards associated with the use of a hazardous substance or mixture being used in the work area.
d) Proper precautions for handling, including specific procedures the company has implemented to protect workers from exposure such as personal protective equipment and work practices.
e) Emergency procedures for spills, fires, disposal and first aid.
f) The methods and observations that can be used to detect the presence of a hazardous substance in the work place (odor, visual appearance and monitoring).
g) The details of this written Hazard Communication Program, the availability and location of this written Hazard Communication Program and MSDS's or other information.

14.10 Re-training

Re-training is required when the hazards change or when a new hazard is introduced into the work place, but it will be company policy to provide training regularly in safety meetings to ensure the effectiveness of the program.

14.11 Non-routine tasks

Special training for hazardous non-routine tasks will be conducted, as needed, to inform you regarding hazardous substance exposure and the proper precautions to take to reduce or avoid exposure.

14.12 Contractor Employers

Each contractor bringing hazardous substances on-site must provide us with the appropriate hazard information on the specific substances and MSDS's on those substances. We will likewise provide the general contractor with MSDS's when we bring any of the above substances onto a job-site.
15.0 PERSONAL PROTECTIVE EQUIPMENT PROGRAM

15.1 Policy
It is the policy of Brekhus to identify and control (or eliminate) hazards in our workplace. When this is not feasible, Personal Protective Equipment, PPE, will be provided to employees. Employees are expected to wear the PPE required for their job and keep it in good condition. Employees must report damaged or inadequate PPE to their supervisor immediately so that it can be replaced. Supervisors are required to set a good example by wearing the PPE required in their Department. Supervisors will work with Safety Administrator to purchase comfortable PPE that fits the employees in their department. Supervisors will encourage employees to look out for themselves and their co-workers.

15.2 Scope
This program applies to all employees who are exposed to physical and/or chemical hazards in our workplace. The following departments are included:
- Fabrication Area
- Water-jet Area
- Outdoor Storage

15.3 PPE GENERAL PROCEDURES
PPE Rules are posted in each department. Each department Supervisor is responsible for notifying the Safety Administrator when equipment, chemicals, or procedures change in their department so that the Hazard Assessment, and PPE Rules, can be updated.

15.4 PPE TRAINING & RETRAINING
Employees and supervisors will receive training on the PPE used in their departments when they are hired. Retraining will be given when:
   a) PPE is not worn according to our rules,
   b) When a task, equipment, or procedure changes in their department, and
   c) When an accident or near-miss indicates a need.
15.5 ENFORCEMENT
Enforcement is necessary to make sure workers do their part in protecting their own safety.
   a) Supervisors will enforce proper use of PPE in their department.
   b) Enforcement of safety rules shall be fair and uniform.
   c) Failure to comply with our PPE rules will result in disciplinary action (up to and including termination).

15.6 OUTSIDE PERSONNEL
Guests and Volunteers are expected to follow our PPE rules. PPE can be obtained for them at the Will Call Office. Guests (or volunteers) will not be allowed in hazardous areas because of the scope of our work.
Contractors will follow our PPE rules. When Supervisors hire a contractor, they will inform them what PPE is required so they can bring it with them. Alternatively, the supervisor will provide the PPE we require to the contractor.
16.0 **Respiratory Protection Program**

16.1 Purpose and Scope
This program establishes requirements for the use of respirators at Brekhus. It also satisfies the Occupational Safety and Health Administration's (OSHA's), Respiratory Protection Standard, 29 CFR 1910.134, requirements for a written respiratory protection program. This program applies to all activities which have the potential to generate airborne contaminants.

16.2 Responsibilities

**Program Administration**
Appropriate respiratory protection will be provided when such equipment is necessary to protect the health of employees.

16.3 Engineering Controls
Whenever practical, contaminant levels shall be reduced through engineering controls; e.g. ventilation or enclosure of processes and equipment.

16.4 Voluntary Use of Disposable Dust Masks
Employees who choose to voluntarily wear disposable dust masks are encouraged, but not required, to comply with the requirements of this program.
17.0 **SILICA**

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**OSHA QUICK CARD**

**Protect Yourself**

**Silicosis**

Silicosis is caused by exposure to respirable crystalline silica dust. Crystalline silica is a basic component of soil, sand, granite, and most other types of rock, and it is used as an abrasive blasting agent. **Silicosis** is a progressive, disabling, and often fatal lung disease. Cigarette smoking adds to the lung damage caused by silica.

**Effects of Silicosis**

- Lung cancer – Silica has been classified as a human lung carcinogen.
- Bronchitis/Chronic Obstructive Pulmonary Disorder.
- Tuberculosis – Silicosis makes an individual more susceptible to TB.
- Scleroderma – a disease affecting skin, blood vessels, joints and skeletal muscles.
- Possible renal disease.

**Symptoms of Silicosis**

- Shortness of breath; possible fever.
- Fatigue, loss of appetite.
- Chest pain; dry, nonproductive cough.
- Respiratory failure, which may eventually lead to death.

**Sources of Exposure**

- Sandblasting for surface preparation.
- Crushing and drilling rock and concrete.
- Masonry and concrete work (e.g., building and road construction and repair).
- Mining/tunneling; demolition work.
- Cement and asphalt pavement manufacturing.

**Preventing Silicosis**

- Use all available engineering controls such as blasting cabinets and local exhaust ventilation. Avoid using compressed air for cleaning surfaces.
- Use water sprays, wet methods for cutting, chipping, drilling, sawing, grinding, etc.
- Substitute non-crystalline silica blasting material.
- Use respirators approved for protection against silica; if sandblasting, use abrasive blasting respirators.
- Do not eat, drink or smoke near crystalline silica dust.
- Wash hands and face before eating, drinking or smoking away from exposure area.

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For more complete information:

OSHA
Occupational Safety and Health Administration
U.S. Department of Labor
www.osha.gov (800) 321-OSHA
Controlling Silica Exposures in Construction
"Crystalline Silica Exposure"
Health Hazard Information for Construction Employees

What is crystalline silica?
Crystalline silica is a basic component of soil, sand, granite, and many other minerals. Quartz is the most common form of crystalline silica. Cristobalite and tridymite are two other forms of crystalline silica. All three forms may become respirable size particles when workers chip, cut, drill, or grind objects that contain crystalline silica.

What are the hazards of crystalline silica?
Silica exposure remains a serious threat to nearly 2 million U.S. workers, including more than 100,000 workers in high-risk jobs such as abrasive blasting, foundry work, stonemasonry, rock drilling, quarry work and tunneling. The seriousness of the health hazards associated with silica exposure is demonstrated by the fatalities and disabling illnesses that continue to occur in sandblasters and rockdrillers. Crystalline silica has been classified as a human lung carcinogen. Additionally, breathing crystalline silica dust can cause silicosis, which in severe cases can be disabling, or even fatal. The respirable silica dust enters the lungs and causes the formation of scar tissue, thus reducing the lungs' ability to take in oxygen. There is no cure for silicosis. Since silicosis affects lung function, it makes one more susceptible to lung infections like tuberculosis. In addition, smoking causes lung damage and adds to the damage caused by breathing silica dust.

What are the symptoms of silicosis?

Silicosis is classified into three types: chronic/classic, accelerated, and acute.

Chronic/classic silicosis, the most common, occurs after 15–20 years of moderate to low exposures to respirable crystalline silica. Symptoms associated with chronic silicosis may or may not be obvious; therefore, workers need to have a chest X-ray to determine if there is lung damage. As the disease progresses, the worker may experience shortness of breath upon exercising and have clinical signs of poor oxygen/carbon dioxide exchange. In the later stages, the worker may experience fatigue, extreme shortness of breath, chest pain, or respiratory failure.

Accelerated silicosis can occur after 5–10 years of high exposures to respirable crystalline silica. Symptoms include severe shortness of breath, weakness, and weight loss. The onset of symptoms takes longer than in acute silicosis.

Acute silicosis occurs after a few months or as long as 2 years following exposures to extremely high concentrations of respirable crystalline silica. Symptoms of acute silicosis include severe disabling shortness of breath, weakness, and weight loss, which often leads to death.

For more information, contact your local OSHA office (listed in the telephone directory under United States Government — Department of Labor — Occupational Safety and Health Administration) or visit OSHA's website at www.osha.gov <http://www.osha.gov>.

Where are construction workers exposed to crystalline silica?
Exposure occurs during many different construction activities. The most severe exposures have occurred during abrasive blasting with sand to remove paint and rust from bridges, tanks, concrete structures, and other surfaces. Other construction activities that may result in severe exposure include: jack hammering, rock/well drilling, concrete mixing, concrete drilling, brick and concrete block cutting and sawing, tuck pointing, tunneling operations.

How is OSHA addressing exposure to crystalline silica?
OSHA has a revised Permissible Exposure Limit, or PEL, which is the maximum amount of crystalline silica to which workers may be exposed during an 8-hour work shift (29 CFR 1926.50,1910.100). OSHA also requires hazard communication training for workers exposed to crystalline silica, and requires a respirator protection program until engineering controls are implemented. Additionally, OSHA has a National Emphasis Program (NEP) for Crystalline Silica exposure to identify, reduce, and eliminate health hazards associated with occupational exposures.

What can employers/employees do to protect against exposures to crystalline silica?
- Replace crystalline silica materials with safer substitutes, whenever possible.
- Provide engineering or administrative controls, where feasible, such as local exhaust ventilation, and blasting cabinets. Where necessary to reduce exposures below the PEL, use protective equipment or other protective measures.
- Use all available work practices to control dust exposures, such as wet spraying.
- Wear only a N95 NIOSH certified respirator, if respirator protection is required. Do not alter the respirator. Do not wear a tight-fitting respirator with a beard or mustache that prevents a good seal between the respirator and the face.
- Wear only a Type CE abrasive-supplied-air respirator for abrasive blasting.
- Wear disposable or washable work clothes and shoes if facilities are available. Vacuum the dust from your clothes or change into clean clothing before leaving the work site.
- Participate in training, exposure monitoring, and health screening and surveillance programs to monitor any adverse health effects caused by crystalline silica exposures.
- Be aware of the operations and job tasks creating crystalline silica exposures in your workplace environment and know how to protect yourself.
- Be aware of the health hazards related to exposures to crystalline silica. Smoking adds to the lung damage caused by silica exposures.
- Do not eat, drink, smoke, or apply cosmetics in areas where crystalline silica dust is present. Wash your hands and face outside of dusty areas before performing any of these activities.
- Remember: If it's silica, it's not just dust.
produced unusually high levels of dust in the enclosed, ventilated test area, the operators' silica exposure levels exceeded OSHA limits by a wide margin, even with the VDC system equipment activated. However, the authors of the study reported that uncontrolled silica exposure levels in the study were considerably greater than those observed in actual construction industry exposure assessment studies. Consequently, use of the VDC system in an actual construction setting could reduce silica exposure levels below OSHA limits (Croteau, 2000; Croteau et al., 2002). Even when operators' silica exposure still exceeds OSHA limits, the level of exposure could be substantially reduced through the use of the VDC system.

Recommendations for Vacuum Dust Collection Systems. The American Conference of Governmental Industrial Hygienists (ACGIH) recommends airflow of 25 cubic feet per minute (CFM) per inch of blade diameter (ACGIH, 2007). If airflow is too low, the hose may clog with particulate matter. A study by Croteau et al. (2002), which tested an abrasive wheel saw, indicated that a ventilation flow rate of 75 CFM and an air velocity of 3440 feet per minute (FPM) should be considered the minimum ventilation rate for a 2-inch diameter vacuum hose. If the system provides a higher flow rate, then it is acceptable to use a larger hose. VDC systems can be purchased as a kit. These kits should include a dust collector (exterior hood), vacuum, vacuum hose, and filter(s). The components of a VDC system are discussed below.

- **Dust collector (exterior hood):** Be sure to use the appropriate sized dust collector for the wheel and if it is a retrofit on the saw, be sure to follow the manufacturer's instructions when installing the device.

- **Vacuum:** Choose a vacuum with the appropriate power and capacity for your job. Obtaining a flow rate on a VDC system of 80 CFM or better will give the best results while performing mortar removal (Heitbrink and Watkins, 2001).

- **Vacuum hose:** A flow rate of 80 CFM is best maintained with a 1½- to 2-inch diameter hose. If the diameter is larger, the airflow velocity will be reduced. If the diameter is smaller, airflow resistance will be higher. Airflow resistance also increases with hose length; excessively long hoses should be avoided.

- **Filters:** Double filtration is important. The use of a high-efficiency particulate air (HEPA) filter is critical to prevent the escape of respirable silica dust from the vacuum exhaust. HEPA filters are at least 99.97 percent efficient in removing fine dust particles from the air. A prefilter or cyclonic separator in addition to a HEPA filter will improve vacuum efficiency and extend the service life of the more costly HEPA filter. A cyclonic separator removes large particles that are capable of overloading or clogging the filter (Heitbrink and Collingwood, 2005).

- **Systematic cleaning:** Choose a vacuum equipped with a back-pulse filter cleaning cycle. Such auto-cleaning mechanisms will reduce the time required for vacuum maintenance and improve the overall efficiency of the dust collection system. If the vacuum does not have an auto-cleaning mechanism, the employee can periodically turn the vacuum cleaner on and off. This allows the bag to collapse and causes the prefilter cake to dislodge from the filter.

- **Monitoring VDC efficiency:** Purchasing a dust collection system equipped with a static pressure gauge allows the employee to monitor the system's efficiency. Systems lacking a static pressure gauge can be monitored visually. If a dust plume increases and becomes more visible where the dust collector meets the working surface, the system is not working efficiently (Heitbrink and Collingwood, 2005).

Tips for Operating a Vacuum Dust Collection System

- Make sure that all hoses are clean and free of cracks.
- Ensure that appropriate filters and dust bags are in good condition and changed or emptied as needed (may be necessary several times per shift under some circumstances).
- Check the entire system daily for signs of poor dust capture or dust leaks.
- Use high-efficiency (HEPA) filters for maximum dust control.
- Erect baffles on either side of the saw to improve dust capture by rear-mounted dust collection devices (exterior hoods).
- Review manufacturers’ operating specifications and recommendations for your equipment.

Work Practice Controls to Enhance Vacuum Effectiveness. Studies have shown that the effectiveness of VDC systems is enhanced by the use of proper work practices (NIOSH, 1999; Croteau et al., 2002). However, use of these work techniques without a dust collection system will not substantially reduce dust exposures.
Stationary Masonry Saws

This section covers gas- and electric-powered stationary masonry saws. The term “silica” used in this document refers to respirable crystalline silica.

Introduction

Exposure to fine particles of silica has been shown to cause silicosis, a serious and sometimes fatal lung disease. Construction employees who inhale fine particles of silica may be at risk of developing this disease. Employees produce dusts containing silica when they cut, grind, crush, or drill construction materials such as concrete, masonry, tile and rock. The small particles easily become suspended in the air and, when inhaled, penetrate deep into employees’ lungs.

Studies show that using a stationary masonry saw to cut bricks, concrete blocks and similar materials can result in hazardous levels of airborne silica if measures are not taken to reduce dust emissions. Stationary saws should always be used with dust control measures. At workites without dust controls for these tools, studies have found that employee silica exposures can be as high as 20 times the Occupational Safety and Health Administration’s (OSHA) benchmark of 0.1 mg/m³ (milligrams per cubic meter of air) as an 8-hour time-weighted average (TWA), an exposure approximately equivalent to OSHA’s general industry permissible exposure limit (PEL) (OSHA Case Files).¹ Short-term exposures can be even higher.

This section describes methods available to reduce employees’ exposures to silica when using stationary masonry saws. OSHA encourages you to use this information to evaluate or improve system performance to reduce dust emissions. Technical notes are found at the end of this section and are referenced throughout the text.

Hazardous exposures to silica can occur when stationary saws are operated without appropriate dust controls. (Photo courtesy of the University of Washington.)

Brekus

Two primary methods exist to control silica dust while operating a stationary saw: (1) wet cutting, and (2) vacuum dust collection. Ventilated booths, when properly designed, can also reduce silica dust exposure. All of these methods are easy to implement.

Wet cutting, when used properly, is an effective way to reduce employee exposures to silica dust and in most cases maintains exposures below the allowable limit. Vacuum dust collection can significantly reduce silica levels, but may not reliably keep them below 0.1 mg/m³ as an 8-hour TWA.

Silica Dust Control Measures

Wet Cutting

Most stationary saws come equipped with a water basin that typically holds several gallons of water and a pump for recycling water for wet cutting.² If a saw’s water supply system is not currently operating, the manufacturer may be able to supply the necessary accessories to reactivate wet cutting capability. Most suppliers stock these accessories since water cooling prolongs the life of the saw blade and tool.

Wet cutting is the most effective method for controlling silica dust generated during sawing because it controls the exposure at its source. Dust that is wet is less able to become airborne. Results obtained by OSHA and the National Institute for Occupational Safety and Health (NIOSH) at five construction sites indicate that wet masonry saw operators’ exposures were routinely below 0.1 mg/m³, and usually below 0.05 mg/m³, not only when averaged over an 8-hour shift, but also during just the period evaluated.³

At one jobsite, for example, NIOSH recorded a respirable silica exposure level of 0.04 mg/m³ in the breathing zone of an employee cutting concrete blocks using a water-fed bench saw. The employee operated the saw for approximately 5 of the 8 hours sampled (NIOSH, 1999a). Even if the employee had cut block for a full 8-hour shift, his estimated exposure would have been 0.06 mg/m³.

In comparison, OSHA reported a significantly higher exposure at another site on a day when wet methods were not used due to cold weather. The employee dry cut concrete block outdoors for a similar period of time (nearly 8 hours), but in this case experienced an 8-hour average exposure of 2 mg/m³ (OSHA Case Files).⁴

Employee exposures associated with uncontrolled dry cutting tend to be lower for employees operating saws for a smaller percentage of their shift, as well as for jobs involving materials with
on the ground, chip away the ice or use deicing compounds or sand to control the slipping hazard.

**Electrical Safety.** Use ground-fault circuit interrupters (GFCIs) and watertight, sealable electrical connectors for electric tools and equipment on construction sites (OSHA, 1998). These features are particularly important to employee safety in wet or damp areas, such as where water is used to control dust. Although an assured equipment grounding conductor program is an acceptable alternative to GFCIs, OSHA recommends that employers use GFCIs where possible because they afford better protection for employees. (See 29 CFR 1926.404(b)(1) for OSHA’s ground-fault protection requirements.)

**Visible and Respirable Dust**

Visible dust contains large particles that are easy to see. The tiny, respirable-sized particles (those that can get into the deep lung) containing silica pose the greatest hazard and are not visible. Most dust-generating construction activities produce a mixture of visible and respirable particles.

**Do** use visible dust as a general guide for improving dust suppression efforts. If you see visible dust being generated, emissions of respirable silica are probably too high. Measures that control tool-generated dust at the source usually reduce all types of particle emissions, including respirable particles.

**Do not** rely only on visible dust to assess the extent of the silica hazard. There may be more airborne respirable dust present that is not visible to the naked eye.

**Vacuum Dust Collection Systems**

When wet methods cannot be implemented, one alternative is the use of vacuum dust collection (VDC) systems. Stationary masonry saws with VDC systems are commercially available and have the ability to capture a substantial amount of dust.

With these systems, a vacuum pulls dust from the cutting point through special fittings connected directly to the saw (fixed-blade saws) or, alternatively, through a dust collection device connected to the back of the saw (plunge-cut saws) (Cruz et al., 2009). A dust collector (externally mounted) to the back of a saw requires a high exhaust airflow to ensure good dust capture between the saw blade and dust collector.

Under experimental conditions, a VDC system for a fixed-blade saw reduced short-term (15-minute) exposures by 80 to 95 percent when compared to uncontrolled masonry cutting. Because the saw
Hand-Operated Grinders

This section covers electric and pneumatic hand-operated grinders used for surface finishing and cutting slots. Angle grinders used for tuckpointing are addressed in a separate section. The term "silica" used in this document refers to respirable crystalline silica.

Introduction

Employees produce dusts containing silica when they grind on concrete and similar materials. The grinder's abrasive action generates fine particles that easily become suspended in the air and, when inhaled, penetrate deep into employees' lungs. Exposure to fine particles of silica has been shown to cause silicosis, a serious and sometimes fatal lung disease. Construction employees who inhale fine particles of silica may be at risk of developing this disease. This section discusses the methods available to reduce employee exposure to silica during grinding activities.

Data compiled by the Occupational Safety and Health Administration (OSHA) indicate that, among employees who grind concrete, most are exposed to silica at levels that exceed OSHA's benchmark of 0.1 mg/m³ (milligrams of silica per cubic meter of air) as an 8-hour time-weighted average (TWA), an exposure approximately equivalent to OSHA's general industry permissible exposure limit (PEL). In fact, on average, grinder operators' silica exposures (along with those of tuckpointers) are among the highest in the construction industry. More than half of all grinder operators experience silica exposures above 0.2 mg/m³ (milligrams per cubic meter of air). During periods of intensive grinding, concrete finishers' exposures can exceed 1.2 mg/m³ outdoors and 4.5 mg/m³ indoors (Lofgren, 1993; OSHA Case Files).

Vacuum dust collection systems are used to reduce silica dust during concrete grinding operations. Vacuum methods can significantly reduce dust emissions, but thus far have not been shown to reliably keep silica levels below 0.1 mg/m³ as an 8-hour time-weighted average (TWA).

Wet grinding is highly effective in reducing silica exposures. Handheld water-fed grinding equipment is commercially available for concrete applications, granite grinding, and polishing operations. Conventional grinding equipment can be retrofitted to add a water-feed capability.

Visible and Respirable Dust

Visible dust contains large particles that are easy to see. The tiny, respirable-sized particles (those that can get into the deep lung) containing silica pose the greatest hazard and are not visible. Most dust-generating construction activities produce a mixture of visible and respirable particles.

Do not rely only on visible dust to assess the extent of the silica hazard. There may be airborne respirable dust present that is not visible to the naked eye.

Silica Dust Control Measures

Vacuum Dust Collection Systems

Vacuum dust collection (VDC) systems for grinders include a shroud, which surrounds the grinding wheel, hose, filters and a vacuum to pull air through the shroud. Many manufacturers offer grinders with dust collection options. Employers
Grinder with attached YDC system. (Photo courtesy of OSHA Directorate of Construction.)

Fans
Fans are not effective dust control devices when used as the sole control method and should not be used as the primary method for managing dust. Fans can, however, be useful as a supplement to other control methods. Use fans in enclosed areas, such as bathrooms, where dust may build up due to poor air circulation.

For the best effect, set an exhaust fan (the bigger, the better) in an open window or external doorway. Position the grinder nearby, so the fan captures dust and blows it outside. Avoid positioning employees between the grinder and the fan. Also, avoid positioning employees near the exhausted air. An exhaust fan works best if a second window or door across the room is opened to allow fresh air to enter.

Example: A four-foot square fan is placed in a window exhausting to outside the building at maximum fan speed. The fan will have the strongest capture capability directly in front of the fan face, but this quickly drops off. At two feet away from the fan the capture capability is reduced to 50 percent and at four feet the capture capability is reduced to 7 percent of the capture capability at the fan face. If the distance between the grinding point and fan face is greater than the length of the fan side (4 feet), dust capture would probably not be effective (ACGIH, 2001).

Wet Grinding
Water provides excellent dust control during tasks involving abrasive action on concrete. When applied at the point where dust is generated, water wets the dust particles before they can become airborne.

Water-fed equipment is regularly used to control dust during granite and concrete grinding and polishing operations, as well as during concrete and masonry cutting with abrasive wheels. The wet methods consistently keep employee exposures below OSHA limits (Simcox et al., 1998; NIOSH, 1999). These tools include a nozzle or spout that provides a stream of water to the grinding wheel. For example, some equipment provides water through a hole in a hollow shaft or a nozzle at the edge of the wheel.

The National Institute for Occupational Safety and Health (NIOSH) reported that an employee reduced respirable dust levels by fitting an automatic water feed to a conventional handheld grinder and exhaust shroud system used for tuck pointing (NIOSH, 2000a). Alternatively, a helper can apply water by hand using a spray nozzle (NIOSH, 1998). To be effective, the source must constantly supply water to the point of operation.

The use of water systems on similar tools used in the cut stone and stone products manufacturing industry has shown a reduction of exposures well below 0.1 mg/m³ (NIOSH, 2000d and 2000e; and OSHA Case Files). It is reasonable to assume that such reductions can be achieved in the construction industry while using similar tools and control methods.

Wet methods have advantages, but require advance planning. The stone processing industry has shown that water-fed grinders function well to control dust even on uneven surfaces and near corners and edges (problem areas for vacuum dust collection equipment). Employees need training, however, to become comfortable working with water-fed grinders. A wet surface looks different from a dry one, and visibility during grinding may be obscured by water spray and slurry (OSHA Case Files). Slurry removal also requires an extra step in the cleaning process (for example, use of a wet-dry shop vacuum or rinsing the surface). Nevertheless, wet methods offer reliable dust control during grinding.

Some surfaces might require extra cleaning (for example, with a pressure washer or hose and brush) after employees use wet methods. Avoid splashing concrete slurry on vehicles or other objects with specialty finishes.

Freezing Temperatures. Freezing temperatures complicate the use of water. Consider heating the local work area, if practical, to prevent ice from forming in the water-feed system. Large portable heating units are commonly used to heat commercial and sometimes road and highway projects. Drain the system when not in use. If water freezes on the ground, chip away the ice or use...


**Electrical Safety.** Use ground-fault circuit interrupters (GFCIs) and watertight, sealable electrical connectors for electric tools and equipment on construction sites (OSHA, 1996). These features are particularly important to employee safety in wet or damp areas, such as where water is used to control dust. Although an assured equipment grounding conductor program is an acceptable alternative to GFCIs, OSHA recommends that employers use GFCIs where possible because they afford better protection for employees. (See 29 CFR 1926.404(b)(1) for OSHA’s ground-fault protection requirements.)

**Adjustments in Work Methods**

**Employee Positioning.** Where possible, exposures can be reduced if employees work at a greater distance from the grinding point. These reductions have been demonstrated for employees grinding on ceilings and for employees sanding drywall. Dust tails on employees who stand directly below the grinding point. If the grinder is attached to an adequately supported pole, the employee can manipulate the grinder at a distance from one side where the dust is less concentrated. While this method does not eliminate exposure, it can help reduce the amount of dust in the employee’s breathing area (NIOSH, 1995; OSHA Case Files).

**Grinding Wheel Size.** A study comparing construction employees’ respirable silica exposure at nine construction sites found that short-term exposure levels were about 30 percent higher for employees operating grinders with 7-inch wheels than for operators grinding with 4-1/2-inch wheels. Additionally, diamond wheels used for rougher, more aggressive grinding were associated with exposure levels approximately 60 percent higher than those associated with abrasive wheels used for fine finishing (Flanagan et al., 2003). Therefore, whenever possible, use a smaller rather than a larger wheel, and use the least aggressive tool that will do the job.

**Construction Work Methods.** Where practical, employers can reduce employees’ silica exposures by utilizing construction methods and techniques that minimize the amount of grinding required. Examples include taking steps to minimize pouring/casting flaws and defects by ensuring tighter fitting forms, improved finishing, grinding on pre-cast panels outdoors before installation inside, or using factory installed chases and grooves on pre-cast structural concrete (ERG, 2002; OSHA Case Files). Silica exposures may also be reduced if grinding is done while the concrete is still “green” (NIOSH, 2000c, NIOSH, 2000d). Additionally, for a given amount of material removed from a surface, less airborne dust will be generated if some of the material can be removed as larger chips instead of finely ground particles. An employee might use a hammer and chisel or power chopping equipment to remove most of the mass before using a grinder to smooth the surface.

**Case Studies.** The following case studies indicate silica exposure levels found under certain uncontrolled conditions, and show the effectiveness of controls in reducing silica exposures.

**Case Studies - Silica Exposure Levels.** Studies have shown that employees grinding concrete are exposed to potentially harmful levels of silica unless dust levels are controlled.

**Indoors. Case Study I:** Among data obtained by OSHA, grinder operators’ silica exposures exceeded 1.0 mg/m³ during OSHA inspections reported for indoor construction sites. NIOSH reported an exposure level of 2.8 mg/m³ for a grinder operator finishing the walls, columns and floor inside an open-sided parking garage (NIOSH, 2001).

Some of the highest indoor results are associated with overhead work (grinding on ceilings). For example, OSHA reported exposures of 4.5, 4.5, 5.9, and 7.3 mg/m³ for four construction employees grinding slabs and smoothing the ceiling of a mostly enclosed building (OSHA Case Files).

**Outdoors. Case Study II:** Exposures are somewhat lower outdoors, where dust can disperse more quickly, but results still indicate potentially harmful employee exposures. For example, data compiled by OSHA included results for three construction employees who primarily performed concrete grinding during the evaluation. The results indicate that the employees’ silica exposures ranged from nearly 0.4 to 1.2 mg/m³ during the air sampling period. Even when results were averaged over their full shift, exposures were still 0.15 mg/m³ to 0.3 mg/m³ (LeFevre, 1993; OSHA Case Files).

**Other Employers in the Area. Case Study III:** Silica dust released during uncontrolled grinding can affect other employees in the area. NIOSH collected area samples in the center of a room measuring 13
may also purchase equipment to retrofit grinders for vacuum dust collection. The effectiveness of vacuum systems depends on several factors, including the user’s technique, the surfaces being finished, and the efficiency of the dust collection system.

The addition of the shroud and vacuum hose may make it more difficult to work effectively while reaching overhead.

**Recommendations for Vacuum Dust Collection Systems.** The American Conference of Governmental Industrial Hygienists (ACGIH) recommends airflow of 25 cubic feet per minute (CFM) per inch of blade diameter (for example, a 4-inch grinder would need a vacuum with airflow of 100 CFM). If airflow is too low, the hose may clog with particulate matter. However, employers should be aware that rated airflows provided by manufacturers may be different from actual airflow once attached to the tool. A study by Croteau et al. (2002), which tested an abrasive wheel saw, found a 2-inch diameter vacuum hose and a flow rate of 75 CFM achieved an air velocity of 4,000 feet per minute (FPM). Achieving this air velocity prevented particulate matter from settling in the hose.

VDC systems can be purchased as a kit. These kits should include a grinder shroud (exterior hood), vacuum, vacuum hose, and filter(s). The components of a VDC system are discussed below.

- **Grinder shroud (exterior hood):** Employees should use a shroud appropriate for the grinder and wheel size.

- **Vacuum:** Choose a vacuum with the appropriate power and capacity for your job. Croteau et al. (2002) found a flow rate greater than 70 CFM to be effective.

- **Vacuum hose:** A 1½- to 2-inch diameter hose is usually best for smaller vacuums. If the diameter is larger, the airflow velocity of the vacuum will be reduced. If the diameter is smaller, airflow resistance will be higher. Airflow resistance also increases with hose length; excessively long hoses should be avoided.

- **Filters:** Double filtration is important. The use of a high-efficiency particulate air (HEPA) filter is critical to prevent the escape of respirable silica dust from the vacuum exhaust. HEPA filters are at least 99.97 percent efficient in removing fine dust particles from the air. A prefilter or cyclonic separator in addition to a HEPA filter will improve vacuum efficiency and extend the service life of the more costly HEPA filter. A cyclonic separator removes large particles that are capable of overloading or clogging the filter (Heitbrink and Collingwood, 2005).

- **System Maintenance.** For optimal dust collection, the following measures are recommended:
  - Keep the vacuum hose clear and free of debris, kinks and tight bends. Maintain the vacuum at peak performance to ensure adequate airflow through the shroud and ducts.
  - On vacuums with back-pulse filter cleaning systems, activate the system frequently (several times per day). Empty collection bags and vacuums as frequently as necessary. Dispose of collected dust in a way that prevents it from becoming resuspended in the air.
  - For best results, set up a regular schedule for filter cleaning and maintenance. For example, institute a rule to clean the filter or change the bag at each break. This will prevent pressure loss and ensure that exhaust airflow stays constant on the VDC system.
  - Remember, the absence of visible dust does not necessarily mean that employees are adequately protected from silica exposure.
feet by 23 feet, while an employee used a grinder on the concrete walls. The area samples indicated that, over the course of a shift, a person (for example, an employee from another trade) could experience a silica exposure level of nearly 0.2 mg/m³ by simply standing in the center of the room (NIOSH, 1998).²

Fortunately, bystander exposure can generally be reduced to levels well below OSHA limits by managing the dust. NIOSH found that when the grinder operator’s exposure is reduced, bystander exposure drops as well. At the site mentioned above, the silica concentration in the middle of the room fell below the limit of detection when grinder operator exposures were reduced using either vacuum dust collection or wet-grinding methods (NIOSH, 1998).

Case Studies - Vacuum Dust Collection

Several case studies provide insights about employees’ silica exposure when VDC systems are used to control dust emissions. These examples show that such systems significantly lower levels of airborne silica, but may not reliably reduce the grinder operator’s exposures to levels below allowable limits.

Case Study IV: OSHA evaluated employee grinding on outdoor concrete pier structures for about 3 hours during bridge construction. Without controls, their daily average exposures to silica were 0.16 and 0.30 mg/m³ as 8-hour TWA’s.³ OSHA then tested a shrouded grinder connected to a backpack vacuum with a HEPA filter. The silica exposure dropped to 0.02 mg/m³ as an 8-hour TWA⁴ (OSHA Case Files).

Case Study V: At another construction site, an employee operated a 7-inch grinder fitted with a dust collection shroud connected to a drum vacuum. Full-shift air samples collected on two days indicated a silica exposure level of 0.06 mg/m³ on the first day and 0.11 mg/m³ on the second day (OSHA Case Files). Exposure levels typically exceed these values when dust controls are not used.

Case Study VI: Researchers collected air samples for five days while one employee used various grinders fitted with a vacuum dust-collection shroud. The shroud was connected to a portable electric vacuum, which included a high-efficiency filter.⁵ While the operator performed grinding on concrete walls inside a parking garage, breathing area exposure levels ranged from 0.06 to 0.2 mg/m³ (Echt and Sieber, 2002; NIOSH, 2002b).

NIOSH (2001) obtained similar results from another employee testing various grinders, shrouds, and vacuums while smoothing concrete at a parking garage site. The three 6-hour samples collected on separate days indicated employee exposure levels of 0.17, 0.18, and 0.26 mg/m³.⁶ The results reported in these case studies are notably lower than the exposure levels typically associated with uncontrolled concrete grinding. However, even when using a vacuum dust collection system, grinder operators’ exposures often exceed 0.1 mg/m³.

Case Studies - Fans

Case Study VII: A fan set up in the doorway of a small room was not adequate to remove the dust generated during grinding. No other methods were used to control dust. As a result, the grinder operator’s exposure to silica was 1.4 mg/m³ during a 2-hour period. In another indoor space where employees on a scaffold were grinding on a concrete wall, fans helped keep exposures at around 0.5 mg/m³ for the periods evaluated (1.5 to 4 hours) (Lofgren, 1993).

Case Studies - Wet Methods

Case Study VIII: The results from two air samples for a grinder operator and helper showed that employees had low silica exposure when using water spray while smoothing concrete walls. The helper applied a spray of water from a hand-pump garden sprayer can filled with tap water. The investigators concluded that by constantly spraying the concrete just ahead of the grinder wheel, the employees reduced their exposure levels by 90 percent (NIOSH 1998).⁷

Case Studies - Employee Repositioning

Two studies suggest that employee positioning is an important determinant of silica exposure levels. The following examples show a tenfold difference in exposure recorded for employees using grinders attached to poles while grinding concrete ceilings at two (mostly enclosed) building sites. While employee position was a large factor, the type of work and the silica content of the concrete also accounted for some of the difference.

Case Study IX: At the first site, two grinder operators smoothed seams in a concrete ceiling using grinders on long extension jigs. The jigs were supported at an angle on rolling scaffolds. The operators manipulated the grinders from the bottom end
of the jigs and were exposed to silica at levels of 0.184 and 0.416 mg/m³ (OSHA Case Files).\textsuperscript{14}

**Case Study X:** Four operators at the second site ground utility slots and smoothed junctions in concrete ceilings, holding the grinders above their heads on short extensions fabricated from PVC pipe. The employees' exposure was exceptionally high, ranging from 4.5 to 7.2 mg/m³. In this case, the operators were removing more material (making more dust) and were positioned so that most of the dust fell directly onto them (OSHA Case Files).\textsuperscript{15}

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**Compressed Air**

The use of compressed air to clean surfaces or clothing is strongly discouraged. Using compressed air to clean work surfaces or clothing can significantly increase employee exposure, especially in enclosed and semi-enclosed spaces. Cleaning should be performed with a HEPA-filtered vacuum or by wet methods.

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**Respiratory Protection and Engineering Control Evaluation**

Using a hand-operated grinder without engineering controls can cause exposures to respirable crystalline silica to reach 1.2 mg/m³ or higher while working outdoors and 4.5 mg/m³ or higher while working indoors. Effective wet methods are invaluable in keeping silica levels below 0.1 mg/m³ as an 8-hour TWA. When using effective wet methods, it is unlikely that respiratory protection will be needed.

In situations where wet methods may not be appropriate or feasible, VDC systems may be an alternative control option. Current data suggest that most grinding operations that utilize VDC systems usually exceed 0.1 mg/m³, but generally do not exceed 1.0 mg/m³. Therefore, to supplement the use of a VDC system, employees should wear a properly fitted, NIOSH-approved half-facepiece or disposable respirator equipped with an N-, R-, or P-95 filter. A half-facepiece or disposable respirator can be used for protection at silica concentrations up to 1.0 mg/m³.

In any workplace where respirators are necessary to protect the health of the employee, or whenever respirators are required by the employer, the employer must establish and implement a written respiratory protection program with worksite-specific procedures and elements. This should include the selection of respirators, medical evaluations of employees, fit testing, proper usage, maintenance and care, cleaning and disinfecting, proper air quality/quantity and training (see 29 CFR 1926.103).

Where VDC systems and/or wet methods are not feasible, the employee may be subject to wearing a full-facepiece respirator equipped with an N-, R-, or P-95 filter in conjunction with a respiratory protection program, which is also outlined in and must correspond with 29 CFR 1926.103. A full-facepiece respirator equipped with an N-, R-, or P-95 is adequate for silica concentrations up to 5.0 mg/m³.

Other employees in close proximity to the work operations where silica dust is generated may also need respiratory protection if effective controls are not implemented. The level of respiratory protection is dependent on the employee’s silica exposure, which varies depending on factors in the work environment (such as enclosed, semi-enclosed, or open spaces and/or multiple operations generating silica dust), environmental conditions (such as wind direction and speed), and the percentage of silica found in the material.

Construction sites often involve many operations occurring simultaneously that can generate respirable silica dust. Therefore, it is important and necessary to utilize effective controls (such as wet methods or VDC systems) in order to minimize total exposures to silica-exposed tool operators or potential exposures to other employees.

Employers should conduct exposure monitoring periodically while controls are being used to ensure that the controls are working properly and that the appropriate level of respiratory protection is being used.

For more information on how to determine proper respiratory protection, visit OSHA’s Web site at www.osha.gov. NIOSH's Web site also provides information on respirators at www.cdc.gov/niosh.

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**References**


ACGIH. 2008. Threshold limit values for chemical substances and physical agents and biological exposure indices. American Conference of Governmental Industrial Hygienists, Cincinnati, OH.


18.0 **Hearing Conservation Program**

18.1 Introduction

Hearing conservation is an important aspect of the overall safety and health program. Workplace noise can cause hearing loss, create physical and psychological stress, and contribute to accidents by making it difficult to communicate. An estimated 14 million employees throughout the United States are exposed to hazardous noise.

Fortunately, noise exposure can be controlled. Every effort is made to use quieter processes, machinery, and equipment. When feasible engineering controls do not reduce the noise level to or below the OSHA permissible exposure limit (PEL) of 90 dB, proper hearing protectors are used. Also, all employees exposed to noise levels above 85 dB are included in a hearing conservation program. There are many reasons for providing an effective hearing conservation program, including: protecting the organization’s most important resource - employees, providing a safe and healthful workplace, and complying with governmental regulations. Management, supervisory, and employee commitment to hearing conservation and positive attitude are important aspects of the overall hearing conservation program. The key elements of the organization’s hearing conservation program are:

1. Noise exposure measurements
2. High exposure areas or jobs
3. Audiometric testing and follow-up
4. Employee Education
5. Engineering and administrative noise exposure control
6. Personal hearing protection
7. Recordkeeping

The Safety Administrator has been designated as the program administrator for Hearing Conservation.

18.2 Noise Exposure Measurement

The success of the company's hearing conservation program depends on an accurate knowledge of the existing noise environment. Accurate surveys define areas within acceptable guidelines for noise exposure and those areas where potentially harmful noise exposure exists. Effective noise exposure measurement prevents possible loss of hearing by detecting work areas where employees must wear hearing protectors and must be tested.

Detailed noise surveys have been performed for the following areas or processes:

- Area/Process Date
- Fabrication Area
- Water Jet Area
These surveys were conducted using Type II Noise Dosimeters worn by employees working in the area. Noise Dosimeters were worn for the duration of the work shift or at least long enough to establish a conservative average noise exposure. All affected employees have been notified regarding these results. Additional monitoring will be conducted whenever changes in work practices or methods may change workplace noise exposures including addition of new equipment or a change in the workplace layout.

18.3 HIGH EXPOSURE AREAS OR JOBS
Based on the results of the noise exposure measurements, the following areas/jobs have been designated as "High Exposure". "High Exposure" refers to work areas or jobs where employees' noise exposure may exceed the action level of (85 dBA).

- Area/Job
- Water Jet Area
- Hearing Protection
- Required

"Monitoring results above the action level (85 dBA) indicate areas where hearing protection is "encouraged" and monitoring results above the Permissible Exposure Limit (90 dBA) indicate areas where hearing protection is "required".
19.0 **BLOOD BORNE PATHOGENS**

19.1 Purpose

This policy pertains to spills of blood or other body fluids. It is not a first aid/emergency response procedure. This policy is specific to *clean-up* of such fluids.

19.2 Procedure

1. In the event of a serious injury resulting in release of blood or other body fluids which could contain pathogens (e.g., HIV or HBV), the first step is to treat the injured party. Personnel should familiarize themselves with Brekhus Safety Committee and Emergency Managers for this purpose.

2. Spilled body fluids should **not** be cleaned up without the appropriate protective equipment and materials specifically designated for such fluids. In the case where spilled body fluids need clean-up, this procedure **must be followed** by all personnel:

   I. Advise the Supervisor on duty. The supervisor should be aware of the individual(s) doing the actual clean-up and the purpose of the cleanup.

   II. Clean up the spilled fluids as follows:

      a. Put on protective gloves.

      b. Spread the absorbent material on the spilled body fluids, (e.g., paper towels) or use the Emergency First Responder Pack kit located in the medical supply cabinet.

      c. **Neutralize** the potential pathogens with a 10% bleach-with-water solution or use the solution provided in the Emergency First Responder Pack. Cover the spill for 15 minutes.

      d. Use paper towels to pick up material as best possible. Place all potentially contaminated materials in a **leak-proof** plastic bag.

      e. Sweep/mop-up any additional neutralized/absorbed fluids and place in the **leak-proof** bag.

      f. Clean sweep/mop materials with hot, soapy water. Lastly, remove gloves from inside-out and place in the bag.

      g. Secure the bag and discard it as other trash.

      h. Wash hands thoroughly in hot, soapy water.

3. After all activity is completed and checked by the supervisor; the supervisor should complete an accident/near miss investigation form or incident report, whichever is appropriate.
20.0 **LOCKOUT/TAGOUT - CONTROL OF HAZARDOUS ENERGY**

20.1 Policy
It is the policy of Brekhus to implement and maintain a successful Lockout/Tagout program, in order to protect our people, property, and processes.

20.2 Purpose
To establish a program and utilize procedures for affixing appropriate lockout/tagout devices, and to otherwise disable machines or equipment from unexpected energization, start-up or release of stored energy, in order to prevent needless deaths or serious injury.

20.3 Scope
This program covers the servicing and maintenance of machines and equipment in which the unexpected energization or release of stored energy could cause injury to employees or outside personnel.

Servicing and/or maintenance which take place during normal production operations are covered by this standard if:

1. An employee is required to remove a guard or other safety device
2. An employee is required to place any part of his or her body into an area on a machine or piece of equipment where work is actually performed upon the material being processed (Point of operation) or where an associated danger exists during a machine operation cycle.

*Note: The exception to paragraph (b) is: Minor tool changes and adjustments, and other minor servicing activities, which take place during normal production operations, are not covered by this program if they are routine, repetitive, and integral to the use of the equipment for production, provided that the work is performed using alternative measures which provide effective protection.*

This program does not apply to the following:

1. Work on cord and plug connected electrical equipment for which exposure to the hazard of unexpected energization is controlled by unplugging of the equipment from the energy source and by the plug being under the exclusive control of the employee performing the servicing or maintenance.
2. Hot tap operations involving the transmission and distribution of substances such as gas, steam, water or petroleum product, when they are performed on pressurized pipelines.

20.4 **GENERAL PROCEDURES**
Separate procedures are relevant for the application of control devices and removal of control devices. These procedures are defined in more detail below.
20.5 APPLICATION OF CONTROL PROCEDURE

Energy isolation and lockout/tagout are to be applied only by trained employees authorized to perform service and maintenance. The goal of this control procedure is to achieve "Zero Energy State" and "Zero Mechanical State." The 8-step control procedure listed below must be followed.

1. NOTIFICATION - Notify all affected employees that servicing or maintenance is required on a machine or piece of equipment and that the machine or equipment must be shut down and locked out to perform the servicing.

2. PREPARATION - Authorized employees shall be knowledgeable of and the use the energy isolation procedures to prepare for shutdown. This procedure includes the identification of all energy sources (types, magnitudes), the hazards of the energy to be controlled, and the method (energy isolation devices) to control energy.

3. EQUIPMENT SHUTDOWN - Shut down the system by using the proper shutdown procedure. Insure that no personnel are endangered during the shutdown.

4. EQUIPMENT ISOLATION - De-activate the energy isolation device(s) so that the machine or equipment is isolated from the energy source(s). Be sure to isolate all energy sources, including secondary power supplies. Energy can come from many different sources including: electrical, mechanical, hydraulic, pneumatic, chemical, and thermal.

5. ISOLATION DEVICES - All energy isolation devices are to be locked out with the use of an attached lock, and tag. The tag must display the authorized person's name. Only standardized devices supplied by the company are to be utilized. More than one employee can lock out a single device by using a multiple lock hasp. Use an appropriately designed lockout providing "attachment device" if a lock cannot be placed directly on the energy control. The authorized employee that applied the lock shall maintain the key (to the lock) in his or her possession during the time the lockout is under their control. Safety Committee shall be responsible for the integrity of the lockout, in the event of shift or personnel changes. The integrity of the lockout/tagout protection must not be interrupted!

6. STORED ENERGY - All potentially hazardous stored or residual energy shall be dissipated and restrained. This includes stored energy in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure etc. The dissipation process shall include methods such as grounding, repositioning, blocking, bleeding down etc.

7. VERIFICATION - Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate. This process is otherwise known as "Tryout." Caution: Return operating controls to neutral or "off" position after verifying the isolation of the equipment.

SUCCESSFUL VERIFICATION - The machine or equipment is now effectively locked out.
20.6 RELEASE FROM CONTROL PROCEDURE

When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following 5 steps must be taken.

1. AREA SURVEY - Check the machine or equipment and the immediate area around the machine or equipment to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
2. PREPARATION - Check the work area to ensure that all employees have been safely positioned or removed from the area.
3. VERIFICATION - Verify that the controls are in neutral.
4. DEVICE REMOVAL - Remove the lockout devices and reenergize the machine or equipment. Removal of the lockout device shall be removed from each energy isolating device by the employee who applied the device.

When the authorized employee who applied a lockout device is not available to remove it, that device may be removed only under the agreement and direction of the Safety Committee. It is also necessary to adhere to all of the following minimum criteria.

A. Verification that the authorized employee who applied the device is not at the facility.
B. Making all reasonable efforts to contact the authorized employee to inform him/her lockout has been removed.
C. Ensuring that the authorized employee has this knowledge before he/she resumes work at that facility. Note: The removal of some forms of blocking may require re-energization of the machine before safe removal.

5. NOTIFICATION - Notify all affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use. (Energy must not be restored to any equipment, until this notification has been successfully completed.)

20.7 SPECIFIC PROCEDURES

The General Procedures listed (in the previous section) are supplemented, where applicable, with equipment or machine specific procedures listed on a separate Lockout/Tagout Data Sheet.

Note: Equipment or machine specific procedures are not required or provided when all of the following exist:

1. The machine or equipment has no potential for stored or residual energy or Re-accumulation of stored energy after shutdown which could endanger employees.
2. The machine or equipment has a single energy source, which can be readily identified and isolated.
3. The isolation and locking out of that energy source will completely de-energize and deactivate the machine or equipment.
4. The machine or equipment is isolated from that energy source and locked out during servicing or maintenance.
5. A single lockout device will achieve a locked-out condition.
6. The lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance.
7. The servicing or maintenance does not create hazards for other employees.
8. In utilizing this exemption, no accidents have occurred involving the unexpected activation or re-energization of the machine or equipment during servicing or maintenance.

20.8 LOCKOUT/TAGOUT TRAINING & RETRAINING
Training shall be provided to ensure that the purpose and function of the energy control program is understood by employees and that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees. All training and retraining requirements shall be conducted and fulfilled by Safety Administrator.

I. Training shall include the following:
1. Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.
2. Each affected employee shall be instructed in the purpose and use of the energy control procedure.
3. All other employees whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure, and about the prohibition relating to attempts to restart or reenergize machines or equipment which are locked out or tagged out.
4. Supervisors shall receive training on their supervisory responsibilities.

II. Retraining shall include the following:

1. Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment or (process that presents a new hazard, or when there is a change in the energy control procedures.
2. Additional retraining shall also be conducted whenever a periodic inspection reveals, or there is a reason to believe that there are deviations from inadequacies in the employees' knowledge or use of the energy control procedure.
3. The retraining shall reestablish employee training has been accomplished and is being kept up to date. The certification shall contain each employee's name and dates of training.
4. The trainer shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain each employee’s name and dates of training.

20.9 ENFORCEMENT
Enforcement is necessary to make sure workers do their part in protecting their own safety.

1. In addition to the required annual inspections, informal or random inspections will be conducted regularly as a part of the supervisory responsibilities of the Safety Committee. These inspections shall verify that energy control procedures are being carried out.

2. Enforcement of safety rules shall be fair and uniform.

3. The penalties for failure to comply with our energy control procedures will result in disciplinary steps taken against the non-complying employee, (up to and including immediate termination).

4.

20.10 PROGRAM EVALUATION & MAINTENANCE
At least annually, a review of the complete energy control program and an inspection of all equipment or machine specific lockout/tagout procedures shall be conducted by the Safety Committee and/or Safety Administrator.

When additions or modifications are made with regard to facilities, equipment, or machinery, it shall be the responsibility of the Safety Committee to provide or update the Lockout/tagout Data Sheet, where applicable, and insure that timely and accurate information is provided before releasing the equipment or machine into service.

20.11 OUTSIDE PERSONNEL
Whenever outside servicing personnel (contractors, etc.) are to be engaging in activities covered by the scope and application of this program BREKHUD and the outside employer shall inform each other of their respective lockout or tagout procedures. The outside employer shall meet the minimum requirements set forth by BREKHUD. If deviations in our normal procedures are approved, adequate communication of such changes must occur with all employees affected, prior to initiating the lockout.
21.0 **HOT WORK PROGRAM**

21.1 **General**

This standard shall provide guidance for persons, including outside contractors and project managers, who manage, supervise, and perform hot work. This standard shall cover the following hot work processes:

- Cutting
- Welding/Soldering
- Grinding
- Similar applications producing a spark, flame, or heat

21.2 **Roles and Responsibilities**

Management shall be responsible for the safe operations of hot work activity and shall establish permissible areas for hot work. Management shall ensure that only approved apparatus, such as torches, manifolds, regulators or pressure reducing valves, and acetylene generators, be used. Management shall ensure that all individuals involved in the hot work operations, including contractors, are familiar with the provisions of this standard. These individuals shall be trained in the safe operation of their equipment and the safe use of the process. These individuals shall have an awareness of the inherent risks involved and understand the emergency procedures in the event of a fire. Management shall advise all contractors about site-specific flammable materials, hazardous processes and conditions, or other potential fire hazards.

21.3 **Permit Authorizing Individual (PAI)**

In conjunction with the management, the PAI shall be responsible for the safe operation of hot work activities. The PAI shall determine site-specific flammable materials, hazardous processes, or other potential fire hazards present or likely to be present in the work location. The PAI shall ensure the protection of combustibles from ignition by the following means:

1) Ensure the work is moved to a location free from combustibles.
2) If the work cannot be moved, ensure the combustibles are moved to a safe distance or have the combustibles properly shielded against ignition.
3) Ensure hot work is scheduled such that operations that could expose combustibles to ignition are not started during hot work operations.
4) The PAI shall determine that fire protection and extinguishing equipment are properly located at the site. Where a fire watch is required, the PAI shall perform the fire watch at the site. Where a fire watch is not required, the PAI shall make a final checkup ½ hour after the completion of hot work operations to detect and extinguish possible smoldering fires.
5) The PAI shall be familiar with the facilities and procedures for sounding an alarm in the event of a fire. They shall be aware of the inherent hazards of the work site and of the hot work and ensure
that safe conditions are maintained during hot work operations. The PAI shall have the authority to stop the hot work operations if unsafe conditions develop.

6) The PAI shall have fire extinguishing equipment readily available and be trained in its use. Watch for fires in all exposed areas and try to extinguish them only when the fires are obviously within the capacity of the equipment available. If the fire is not within the capacity of the equipment, sound the alarm immediately.

21.4 Hot Work Operator
1) The hot work operator shall handle the equipment safely and use it as follows so as not to endanger lives and property.
2) The operator shall have the PAI’s approval before starting hot work operations.
3) The operator shall cease hot work operations if unsafe conditions develop and shall notify management, or the PAI for reassessment of the situation.

21.5 Fire Watch
A fire watch shall be required when hot work is performed in a location where other than a minor fire might develop, or where the following conditions exist:
1) Combustible materials in building construction or contents are closer than 35 ft (11 m) to the point of operation.
2) Combustible materials are more than 35 ft (11m) away but are easily ignited by sparks.
3) Wall or floor openings within a 35 ft (11m) radius expose combustible materials in adjacent areas, including concealed spaces in walls or floors.
4) Combustible materials are adjacent to the opposite side of partitions, walls, ceilings, or roofs and are likely to be ignited.
5) A fire watch shall be maintained for at least ½ hour after completion of hot work operations in order to detect and extinguish smoldering fires. More than one fire watch shall be required if combustible materials that could be ignited by the hot work operation cannot be directly observed by the initial fire watch.

21.6 Hot Work Areas
i. Permissible Areas
• Hot work shall be allowed only in areas that are or have been made fire safe. Hot work shall be performed in either designated areas or permit-required areas.
• A designated area shall be a specific area designed or approved for such work, such as a maintenance shop or a detached outside location that is of noncombustible or fire-resistive
construction, essentially free of combustible and flammable contents, and suitably segregated from adjacent areas.

- A permit-required area shall be an area that is made fire safe by removing or protecting combustibles from ignition sources.

### ii. Non-permissible Areas

Hot work shall not be allowed in the following areas:

- In areas not authorized by management.
- In sprinkled buildings while such protection is impaired.
- In the presence of explosive atmospheres (that is, where mixtures of flammable gases, vapors, liquids, or dusts with air exist)
- In explosive atmospheres that can develop inside unclean or improperly prepared drums, tanks, or other containers and equipment that have previously contained such materials.
- In explosive atmospheres that can develop in areas with an accumulation of combustible dusts.

#### 21.7 Hot Work Permit

A. Before hot work operations begin in a permit required location, a written hot work permit by the permit authorizing individual (PAI) shall be required.

B. Before a hot work permit is issued, the following conditions shall be verified by the PAI:

1. Hot work equipment to be used shall be in satisfactory operating condition.
2. Where combustible materials are on the floor, the floor shall be swept clean for a radius of 35 ft. (11m). Combustible floors shall be protected by noncombustible or fire-retardant shields.
3. All combustibles shall be relocated at least 35ft (11m) horizontally from the work site. If relocation is impractical, combustibles shall be protected with fire-retardant covers or otherwise shielded with metal or fire-retardant guards or curtains. Edges of covers at the floor shall be tight to prevent sparks from going under them, including where several covers overlap when protecting a large pile.
4. Openings or cracks in walls, floors, or ducts within 35 ft (11m) of the site shall be tightly covered with fire-retardant or non-combustible material to prevent the passage of sparks to adjacent areas.
5. If hot work is done near wall, partitions, ceilings, or roofs of combustible construction, fire-retardant shields or guards shall be provided to prevent ignition.
6. If hot work is to be done on a wall, partition, ceiling, or roof, precautions shall be taken to prevent ignition of combustibles on the other side by relocating combustibles. If it is impractical to relocate combustibles, a fire watch on the opposite side from the work shall be provided.
7. Hot work shall not be attempted on a partition, wall, ceiling, or roof that has a combustible covering or insulation, or on walls or partitions of combustible sandwich-type panel construction.

8. Hot work that is performed on pipes or other metal that is in contact with combustible walls, partitions, ceilings, roofs, or other combustibles shall not be undertaken if the work is close enough to cause ignition by conduction.

9. Fully charge and operable fire extinguishers that are appropriate for the type of possible fire shall be available immediately at the work area. If existing hose lines are located within the hot work area defined by the permit, they shall be connected and ready for service, but shall not be required to be unrolled or charged.

10. If hot work is done in close proximity to a sprinkler head, a wet rag shall be laid over the head and then removed at the conclusion of the welding or cutting operation.

11. Special precautions shall be taken to avoid accidental activation of automatic fire detection or suppression systems (for example smoke detection, special extinguishing systems or sprinklers).

12. Nearby personnel shall be suitably protected against heat, sparks, slag, and so on.

21.8 Hot Work Permit-Not Required

Floor Tiles
When repairing floor tiles by heating the tile with a hand-held heating torch, a hot work permit and fire watch is not required if the following conditions are verified:

- Ensure combustible materials are moved away from the heat source.

21.9 Hot Work Training and Recordkeeping

It is the responsibility of each department to ensure that their employees receive the required training. Training can be provided by the Environmental Health and Safety department. Training records will be retained by the Environmental Health and Safety office.
22.0 ASSURED EQUIPMENT GROUNDING CONDUCTOR PROGRAM

It is the policy of Brekhus to establish and implement an assured equipment grounding conductor program on construction sites covering all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and equipment connected by cord and plug which are available for use or used by employees. This policy shall apply to all construction sites not equipped with ground fault circuit interrupters in accordance with OSHA standard 1926.400 (h). Supervisors are designated to implement the assured equipment grounding conductor program: 1926.32 (f) defines competent person as one who is capable of identifying existing and predictable hazards in the surrounding area or working conditions which are unsanitary, hazardous or dangerous to employees, and who is authorized to take prompt corrective measures to eliminate them. Supervisors will be responsible and accountable for the following: Each cord set, attachment cap, plug and receptacle of cord set and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, shall be visually inspected before each day’s use for external defects, such as deformed or missing pins, or insulation damage, and for indication of possible internal damage. Equipment found damaged or defective may not be used until repaired. Supervisors are responsible for tests on all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and cord and plug connected equipment repaired to be grounded. Tests shall be documented on the log for assured equipment grounding conductor program and shall be on the jobsite for inspection by OSHA officials and any affected employee. Equipment that does not meet prescribed test shall not be put into service. The following tests shall be performed: A. All equipment grounding conductors shall be tested for continuity and shall be electrically continuous. B. Each receptacle and attachment cap or plug shall be tested for correct attachment of the equipment grounding conductor. The equipment grounding shall be connected to its terminal. In accordance with OSHA Construction Safety and Health Standards 1926.21 Safety Training and Education, supervisors shall attend such training sessions as the company may deem necessary. A copy of this policy shall be at the jobsite for inspection and copy by OSHA officials and any affected employee. Management retains the authority to designate that certain jobs comply with regulation 1926.400 (h) by use of ground fault circuit interrupters in lieu of the program established above. A copy of the completed forms will be kept on each applicable jobsite for inspection purposes.

22.1 WRITTEN DESCRIPTION ASSURED EQUIPMENT GROUNDING CONDUCTOR PROGRAM

Scope This procedure describes the requirements to assure the installation and maintenance of equipment grounding conductors for temporary wiring on construction sites in accordance with
paragraph (c) (30 of part 1910.309 of the Occupational Safety and Health Standard and paragraph (h) (3) of part 1926.400 of the Safety and Health regulations for construction. II. Policy Ground fault circuit interrupters (GFCI's) are not required for 120 volts, single phase, 15- and 20- ampere receptacles outlets where all the requirements of this procedure are implemented at the construction site. Employees shall not use any equipment which has not met the requirements of this procedure.

III. Jobsite Information
A. Name or description of construction site: ______________________________________
B. Employer complying with this procedure is ______________________________________
C. Person designated to implement the procedure is ________________________________

22.2 Requirements
Equipment grounding conductors shall be installed and maintained in accordance with this procedure. An Installation - Equipment grounding conductors shall be installed as follows:

i. All 120 volts, single phase, 15- and 20- ampere receptacles shall be of the grounding type and their contacts shall be grounded by connection to the equipment grounding conductor of the circuit supply the receptacle I accordance with the applicable requirements of the National Electrical Code.

ii. All 120-volt cord sets (extension cords) shall have an equipment grounding conductor which shall be connected to the grounding contacts of the connector(s) on each end of the cord.

iii. The exposed concurrent-carrying metal parts of the 120-volt cord and plug connected tools and equipment that are likely to become energized shall be grounded in accordance with the applicable requirements of the National Electrical Code.

A. Visual Inspection Employees shall be instructed to visually inspect receptacle, flexible cord sets (extension cords), except those that are fixed and not exposed to damage, and equipment connected by cord and plug before each day's use for external defects such as deformed or missing pins or insulation damage and for indication of possible internal damage. Where there is evidence of damage, the damaged item shall be taken out of service and tagged until tested and any required repairs have been made.

B. All 120 volt, single phase, 15 and 20- ampere receptacles which are not a part of the permanent wiring of the building or structure, 1220-volt flexible cord sets, and 120-volt cord and plug connected equipment required to be grounded shall be tested as follows:

- All equipment grounding conductors shall be tested for continuity and shall be electrically continuous.
- Each receptacle and attachment ca or plug shall be tested or correct attachment of the equipment grounding conductor.
- The equipment grounding conductor shall be connected to its proper terminal. D. Testing Schedule All required tests shall be performed:
  1. Before first use
2. Before equipment is returned to service following any repairs.
3. Before equipment is used after any incident which can be reasonably suspected to have caused damage (for example, when a cord set is run over)
4. At intervals, not to exceed 3 months, except that cord sets and receptacle which are fixed and not exposed to damage shall be tested at intervals not exceeding 6 months. E. Test Records Test verification shall be by means of numeric or color coded marking tape ion the receptacle, cord set or equipment to identify that it has passed the test and to indicate the date (month or quarter) in accordance with section 5.0 Coding Scheme.
5. Color Scheme Coding schemes for assured equipment grounding conductor test record.

| MONTH OR COLOR CODING SCHEME NUMERIC QUARTERLY MONTHLY MONTHLY JANUARY WHITE WHITE 1 FEBRUARY WHITE/YELLOW 2 MARCH WHITE/BLUE 3 APRIL GREEN GREEN 4 MAY GREEN/YELLOW 5 JUNE GREEN/BLUE 6 JULY RED RED 7 AUGUST RED/YELLOW 8 SEPTEMBER RED/BLUE 9 OCTOBER ORANGE ORANGE 10 NOVEMBER ORANGE/YELLOW 11 DECEMBER ORANGE/BLUE 12 REPAIR OR INCIDENT BROWN BROWN 0. |
23.0 **Subcontractor Management Plan**

23.1 Purpose

The purpose of this program is to ensure that Brekhus continues to improve subcontractor health, safety and environmental performance and to establish a standard for pre-qualification, evaluation/selection and development of our subcontractors.

23.2 Scope

This program applies to all subcontractors and all Brekhus locations.

23.3 General Requirements

All Brekhus subcontractors are to be managed in accordance with this program. The use of subcontractors must be pre-approved by BREKHUS. Approval requirements include:

- A formal safety review of the subcontractor being performed by BREKHUS safety committee.
- The scope of the review was commensurate with the hazards and risk exposure.
- Subcontractor has been/will be oriented to the safety policies, expectations and requirements of BREKHUS.
- The subcontractor agrees to abide by our Drug and Alcohol policy and onsite safety rules throughout the duration of the work.

*Any subcontractor that has a “Non-Approved” safety status will not be used on any BREKHUS site.*

23.4 Pre-Qualification of Subcontractors

Subcontractors will be pre-qualified by reviewing their safety programs, safety training documents and safety statistics.

23.5 Evaluation Safety Metrics

Acceptable safety metrics will be used as criteria for prequalifying and selecting subcontractors. The safety metrics and scoring will consider:

- BREKHUS Subcontractor Safety Pre-Qualification Form responses and subcontractor safety program documents review 60% (Rated from 0-60 total points)
- Subcontractor safety training documents review 20% (Rated from 0-20 total points)
- Subcontractor safety statistics review 20% (Rated from 0-20 total points)

23.5.1 Evaluation Rating and Acceptance

The subcontractor rating system will have five designations:

- Equal to or Greater than 90 points = A – no restrictions.
- Between 85 and 89 points = B – Mitigation plan must be documented and approved by BREKHUS Safety.
• Between 81 and 84 points = C – Mitigation plan must be documented and approved by BREKHUD Safety; management approval in writing.
• Between 71 and 80 points = D – Mandatory commitment meeting with senior subcontractor management present; mitigation plan documented and approved by BREKHUD Safety; management approval in writing; trained subcontractor safety personnel on site during work regardless of number of workers.
• Less than 70 points = F – not to be used.

Once each subcontractor has been evaluated and scored, BREKHUD safety will provide management the scores/ranking.

**BREKHUD reserves the right to change a subcontractor’s status to “Non-Approved” if the subcontractor shows insufficient progress towards accepted mitigation plan or other agreed upon criteria.**

### 23.5.2 Subcontractor Involvement

Contractors are required to follow or implement the work practices and systems described below while performing work at BREKHUD worksites:

- Attend a safety orientation, pre-job meeting or kick-off meeting provided by BREKHUD prior to any work beginning
- Monitor employees for substance abuse and report nonconformities to BREKHUD
- Ensure personnel have the required training and competency for their work
- Participate in BREKHUD tailgate safety meetings, job safety analysis or hazard assessments and on the job safety inspections.
- Perform a pre-job safety inspection that includes equipment
- Participate in the BBS hazard reporting system
- Report all injuries, spills, property damage incidents and near misses
- Comply with onsite and Owner Client safety rules
- Implement BREKHUD safety practices and processes as applicable
- Clean up and restore the worksite after the job is over
- Ensure compliance with regulations always
- Post job safety performance reviews shall be conducted for subcontractors.