



SAFETY MANUAL

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Safety Statement

The employees of Quality Underground LLC are our greatest assets. Each of us must work together for the common goal of providing a safe place to work for all employees. Management will provide a safe working environment by providing each employee with safe equipment, proper training, and safe methods and procedures. We will comply with every applicable standard and government regulation.

The order of precedence is Safety, Quality, and then Production. Never sacrifice safety for gains in quality or production. Never sacrifice quality of work for gain in production. Strive for perfection in safety, excellence in quality of work, and good production.

Our work is dangerous. Be aware of your surroundings and look out for others. Our work place is only as safe as the least safe person onsite. Know who that person is and reach out him.

By following the policies in this handbook and exhibiting general safe practices, we can make Quality Underground LLC a safe and enjoyable place to work.

Sincerely,

Donald L. Gillis

Donald L. Gillis
President

Responsibilities for Safety

Management Responsibilities

1. Provide means to accomplish the above stated policy.
2. Enforce this policy.
3. Require that all subcontractors comply with these policies.
4. Encourage all other prime contractors to abide by this policy.
5. Conduct and document safety inspections, utilizing other consulting services when necessary.
6. Investigate all accidents and document immediately.
7. Establish procedures for treatment of injuries.
8. Establish and provide safety training for all necessary personnel.

Superintendent Responsibilities

1. Lead by example to the crews under their direction.
2. Be responsible for all on-site safety.
3. Ensure that all necessary personal protective equipment (PPE), job safety materials, and first aid equipment is immediately available for their crews.
4. Instruct foremen on job specific safety procedures.
5. Instruct foremen to lead by example and follow safe practices and procedures at all times.
6. Ensure that foremen understand their responsibilities as the “Responsible Person” for their crew for all safety practices and procedures.
7. Require all subcontractors to adhere to all Quality Underground LLC safety regulations.
8. Review all accidents with foremen, file full reports complete with photographs to the Quality Underground LLC safety representative and ensure that corrective actions are immediately implemented as required.
9. Maintain current Federal, State and Local Safety Regulations to include Safety Data Sheets (SDS).
10. Adhere to all laws and guidelines pertaining to on-the-job safety.

Foreman Responsibilities

1. Lead by example to the crews under their direction.
2. Ensure that all safety practices and procedures are implemented at the work site.
3. Ensure that employees commit no unsafe practice.
4. Ensure no unsafe conditions exist in their work area.
5. Ensure necessary protective equipment is available and used.

6. Instruct all workers in safe procedures and job safety requirements; follow up and insist on compliance.
7. Discuss safety in personal contacts with workers on every operation.
8. See that all injuries are cared for properly and reported promptly.
9. Investigate all accidents, file complete reports, and correct the causes immediately.
10. Adhere to all laws and guidelines pertaining to safety and its basic requirements.

Employee Responsibilities

1. Perform your duties in a safe manner.
2. Learn the approved safe practices that apply to your work and observe them at all times.
3. Ask for assistance from a co-worker, supervisor, or the management when you are unsure of any potentially unsafe condition.
4. Maintain an active interest in the company Safety Program. Give your undivided attention to safety discussions, which your supervisor may introduce from time to time to prepare you for new or different work, and request explanation of points that you do not thoroughly understand.
5. Always be alert to safety and health hazards. Whenever possible, correct or eliminate an obvious hazard yourself. Report all hazards and any corrective measures you have taken to your supervisor.
6. Never bypass the function of a safety device. Report all safety device malfunctions and unsafe equipment to your supervisor as soon as possible and flag the device immediately to warn others of the hazard.
7. Report promptly to your supervisor any injury you sustain while at work, no matter how slight you may consider the injury to be.
8. Never attempt to do a job alone when common sense and safe work practices tell you assistance is required.
9. Use all protective equipment provided for the work that you are performing.
10. Never engage in scuffling, practical joking, or horseplay of any kind on the job. Such conduct will not be tolerated.
11. Be cautious in walking or moving about the work area so-as-to avoid slipping, tripping, or falling. Be especially cautious when weather conditions create or aggravate hazardous situations. Running on the job is prohibited.
12. Always plan your work and try to anticipate any hazards you might encounter.
13. Never consume alcoholic beverages or illegal drugs prior to reporting to work.
14. Never consume alcohol or drugs at any time on Quality Underground job sites or in Quality Underground owned equipment or vehicles.
15. Do not possess alcohol, illegal drugs, weapons, ammunition, or chemical spray on the jobsite.
16. Make management aware of your use of any legally prescribed drugs which may affect your job performance.

Superintendent Safety Review

Project superintendents will conduct an in-depth safety review that enables the superintendent to quickly assess his project's overall compliance with both State and Federal regulations, as well as company policies. Any deficiencies noted as a result of this review should receive prompt corrective action.

Safety Meetings

Toolbox Talks

A toolbox meeting is a short safety meeting conducted by the immediate supervisor with his entire crew. Everyone present must sign an attendance sheet. Toolbox meetings are held weekly at the start of the workday. Each weekly meeting will cover one subject. When appropriate, demonstrations are provided.

General Safety Meetings

Management shall hold safety meetings at various times during the year. These meetings will be for the primary reason to instruct employees on specific safety rules and/or precautions. Everyone present must sign attendance sheets.

Superintendent Regular Safety Meetings

Quality Underground LLC superintendents conduct regular safety meetings with each of their foremen and subcontractors. While on-the-job safety will be the primary focus during such meetings, work schedules and review of communications may also be made a part of this meeting. At this time, both superintendents and foremen will discuss any accidents, unsafe conditions, or unsafe acts which may have occurred on the project since the last meeting. In addition, these discussions will include work planned for the next jobsite and any particular areas of safety considerations that must be watched. Foreman and Independent Operators will be reminded of their responsibility as "responsible persons" for the safety of each person under their immediate supervision.

Safety Rules

General

- A. All injuries, no matter how minor, will be reported to your supervisor immediately.
- B. Follow all rules outlined in the Virginia Work Area Protection Manual.
- C. Follow all rules outlined in the VOSH and OSHA Manuals.
- D. Fighting, horseplay or scuffling is prohibited at all times.
- E. All unsafe acts or conditions, regardless of how minor, shall be reported to your supervisor.
- F. Broken or defective tools and/or equipment will NOT be used at any time.
- G. Do not attempt to lift or move heavy or cumbersome loads without adequate assistance. Learn to lift with your leg muscles and not with your back. Never twist at your waist while moving loads; turn your whole body or point your lead foot in the direction of movement. Supervisors will instruct all their employees on correct lifting procedures. When possible, all heavy or cumbersome equipment will be moved with mechanical equipment (i.e., track or rubber-tire loaders).
- H. All protruding nails or sharp objects, which could cause injury, will be removed or bent down immediately.
- I. If you do not feel safe within the immediate work area of the jobsite, express such concerns to your supervisor immediately. Use common sense -- DO NOT PROCEED WITH WORK IF YOU FEEL UNSAFE.
- J. If asked to complete any work assignment for which you are unsure how to do properly or safely, inform your supervisor immediately.
- K. The use or possession of intoxicants or illegal drugs is forbidden.
- L. When it becomes necessary for an employee to use prescription medication during working hours, the employee must provide the supervisor with a letter from his/her physician verifying the type of medication; and, verify that it will not impair the employee's ability to perform all the tasks associated with his/her job. The supervisor will compare the name of the medication referred to in the doctor's letter with the name of the medication on the employee's prescription container to ensure that both names are the same.
- M. Employees will not consume alcoholic beverages prior to reporting for work.
- N. Quality Underground employees will not consume alcoholic beverages on jobsites nor in any Quality Underground owned/leased equipment or vehicle.
- O. Do not jump from or to any elevated surfaces. Either turn around and climb down or use the proper ladder. Examples of elevated surfaces are: walls, banks, equipment, vehicles and excavations.
- P. All employees will make themselves aware of the location of the OSHA Safety and Health Poster, Emergency Telephone Number Poster, Hazard Communication Program Poster, the location of the first aid treatment.
- Q. The operation of machinery, power tools or construction equipment without

proper training and instruction is prohibited.

Personal Protective Equipment (PPE)

- A. Hard hats will be worn at all times where there is the potential for head injury from impact.
- B. For all digging and trenching operations, hard hats will be worn by all employees.
- C. For all work zones within the clear zone as specified in the VA Work Area Protection Manual, hard hats, reflective vests and steel toe shoes will be worn by all employees.
- D. Shirts must provide upper body protection from scrapes, cuts, and sunburn; with a minimum of four-inch sleeves. Shirts help keep your body cool during hot weather and must be worn at all times. No tank-tops or muscle shirts are permitted.
- E. Eye protection will be worn when performing operations that present eye hazards. Such operations include, but are not limited to: chipping concrete, cutting bricks or concrete blocks, driving nails into concrete or masonry units, mixing mortar or concrete, pouring concrete, operating powder-actuated tools, operating a jackhammer, operating a bush hammer, operating a power-saw or power-drill, operating oxygen/acetylene torch.
- F. Protective eye and face devices shall comply with ANSI Z87.1-1968 regulations (available upon request).
- G. Hearing protectors shall be provided and worn in high noise situations. Your supervisor will advise you when to wear hearing protectors. Situations include, but are not limited to: the use of noisy equipment such as jackhammers, the use of pneumatic or high pitch tools in confined spaces, and any areas where noise levels exceed 85 decibels for long periods of time.
- H. Goggles or a welder's hood of correct lens density will be worn while welding or cutting by gas or electricity.
- I. Only ankle high, lace type, leather work-boots with soles capable of avoiding puncture shall be allowed. These boots must be worn by all crew members. Steel-toe boots or metatarsal protectors must be worn when there is a danger of foot injury; examples of this are tampering, jack hammering, and setting concrete pipe.
- J. Gloves suitable for the type of work being performed will be worn.
- K. Clothing shall be snug fitting to reduce the possibility of catching on projections.

Heavy Construction Equipment

- A. The safe operation of construction equipment is required.
- B. The operation of any equipment without authorization from your supervisor is prohibited.
- C. Equipment MUST NOT be operated within 10 feet of overhead high voltage

power lines.

- D. Warning signs no less than 5 x 7 inches, with yellow background and black lettering stating "WARNING UNLAWFUL TO OPERATE THIS EQUIPMENT WITHIN TEN FEET OF OVERHEAD HIGH VOLTAGE LINES" must be affixed to any mechanical equipment or hoisting equipment, any part of which is capable of vertical, lateral, or swinging motion that could be operated within 10 feet of an overhead high voltage line; including, but not limited to cranes, derricks, power shovels, drilling rigs, excavating equipment, etc. Decals should be installed on three sides of the equipment, plus one inside the operator's cab of the equipment in plain view of the operator. Signage must be on all company equipment and heavy trucks.
- E. Do not climb onto or off equipment that is in motion.
- F. Do not start equipment until you are in the driver's seat.
- G. Do not work under suspended loads.
- H. Equipment operators shall wear seat belts while operating equipment provided with roll over protective structures (ROPS).
- I. Heavy equipment operators shall inspect the equipment they are assigned to each day before beginning work. Make sure brakes, backup alarms, front horn, lifting mechanisms, hydraulics, warning signals, and lights (if needed) are in proper working order. Fire extinguishers should be properly tagged. Glass inspected for cracks and cleaned when necessary.
- J. No riders are permitted in heavy equipment unless the rider has a seat with a seatbelt.

Flammables and Fire Extinguishers

- A. Fire extinguishers will be obtained prior to starting welding or open flame operations and will be kept in the area of such operations.
- B. Know the location of fire extinguishers and how to use them. Tampering with fire extinguishers is prohibited.
- C. Do not smoke while using or working near flammable materials. Obey all posted signs.
- D. Gasoline, and all other flammable liquids, shall be stored only in approved UL safety cans, which are properly labeled. No plastic containers without a pressure relief lid and flash arrestor will be allowed on job sites.
- E. Do not bring personal gasoline containers on site that do not meet these requirements.
- F. Do not store or use an acetylene gas cylinder lying down. It must always be upright.
- G. Always shut down equipment and let it cool down before refueling. If necessary, use a funnel to prevent spillage.

Ladders

- A. Prior to ascending or descending a straight or extension ladder, the employees shall ensure that the ladder is secured against displacement and extends at least 36 inches above the landing.
- B. Ladders shall not be used in a horizontal position as platforms, runways, and scaffolds or for other than their intended purpose.
- C. Metal ladders shall not be used where they may contact energized electrical conductors.
- D. Ladders shall not be placed in passageways, doorways, driveways, or any location where they may be displaced by other work, unless protected by barricades or guards.
- E. Portable ladders shall be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is about one quarter of the working length of the ladder.
- F. The areas around the top and bottom of the ladder must be kept clear of debris, cords, welding leads and other tripping hazards.
- G. Portable ladder feet must be placed on a firm substantial base. Do not use ladders on slippery surfaces unless secured or provided with slip-resistant feet to prevent movement.
- H. Do not set a ladder on top of boxes, scaffold, or other objects that may move.
- I. Never stand any higher than the third rung from the top of any ladder.
- J. Always use stepladders with spreader or locking device in an open position while being used.
- K. Never climb a ladder with an object in your hands.
- L. Do not over reach to the side.
- M. Do not climb a ladder with shoe soles covered with sand, oil, mud snow, etc.
- N. Do not “jump” the ladder to a new location. Get off and move it.
- O. Always inspect ladders before using them. Any defective ladder should be removed from service immediately until repaired or replaced. All defective ladders should be tagged “DO NOT USE” or equivalent.
- P. While ascending or descending a ladder, always face the ladder.
- Q. Do not carry an object or load that could cause you to lose balance and fall.
- R. Do not store tools or materials on top of stepladders.

Power Tools

- A. Only employees who have been trained in the operation of the particular power tool in use will be allowed to operate such tools.
- B. Employees will not operate equipment that has had guards removed or other safety devices made inoperative.
- C. Employees will not remove guards from tools or equipment or make such devices inoperative.
- D. Electrical cords with broken insulation, exposed wires, or defective ends will not be used.

- E. Three-wire electrical cords without a ground pin will not be used.
- F. Ungrounded electric tools will not be used. This does not apply to double insulated tools.
- G. A ground fault circuit interrupter (GFCI) will be used ahead of extension cords used to supply current to power tools.
- H. Safety clips or retainers shall be securely installed and maintained on pneumatic impact tools to prevent attachments from being accidentally expelled.
- I. Compressed air shall not be used for cleaning purposes except where reduced to less than 30 PSI. And then, only with effective chip guarding and personal protective equipment.
- J. Stop all fuel-powered tools while fueling, servicing, or maintaining.
- K. Do not use fuel-powered tools in confined spaces unless proper ventilation is maintained. Consult with your supervisor.
- L. Use of abrasive wheels (bench mounted or hand held) will not be used without hood guards or safety flanges (half-moon guards).
- M. Safety goggles or full-face shields and safety gloves must be worn at all times while using bench mounted or hand held abrasive wheels.

Excavations

- A. Employees will not work in excavations, 5 feet or more in depth, which have not been sloped to the proper soils classification, shored / shielded, provided with other means of protection to prevent cave-ins, and certified for entry by competent person.
- B. Employees will not work in excavations 4 feet or more in depth, that are not provided with ladders, steps, ramps or other safe means of climbing into and out of so as to require no more than 25 feet of lateral travel.
- C. Do not enter excavations or trenches until the competent person has identified soil classification and slope, shoring or shielding, and declared the excavation safe.
- D. Do not enter excavations or trenches that you feel are unsafe. Report unsafe conditions to your supervisor immediately.
- E. Before entering any excavation, which has been left open overnight, make sure your supervisor has inspected it.
- F. Never work outside shield (trench box) or shoring system.
- G. All materials (including spoil pile) will be stored at least 2 feet from the edge of excavations.

For more information on Excavations, see OSHA Subpart P at the following link: <https://www.osha.gov/trenching-excavation>
The most up-to-date link is also available on our website.

Operations in Traffic

- A. Superintendents and foremen will refer to the Virginia Work Area Protection Manual prior to commencing any work activity in the Right Of Way or clear zone of any travel-way.
- B. Superintendents and foremen will know and understand all requirements of the Virginia Work Area Protection Manual prior to commencing any work activity in the ROW or clear zone of any travel-way.
- C. Foremen will instruct all crew members regarding all requirements of the Virginia Work Area Protection Manual prior to commencing any work activity in the ROW or clear zone of any travel-way.
- D. Employees will not enter any ROW or clear zone of any travel-way without reviewing the requirements of the Virginia Work Area Protection Manual with a foreman or superintendent.
- E. Superintendents, foremen and employees will know and understand all project specific MOT plan requirements and VDOT permit requirements.
- F. Do not enter any work zone that you feel is unsafe. Report unsafe conditions to your supervisor immediately.
- G. Employees will not enter any ROW or clear zone of any travel-way without the proper PPE including hard hats, safety vests, and steel toe shoes.

For more information on Operations in Traffic, see the Virginia Work Area Protection Manual at the following link:

https://www.virginiadot.org/business/resources/traffic_engineering/workzone/2011_WAPM_Rev_2.pdf

The most up-to-date link is also available on our website.

Confined Spaces

A “confined space is a space that is large enough and so configured that an employee can bodily enter and perform assigned work; and has limited or restricted means for entry or exit (for example, tanks, vessels, silos, vaults, pits, excavations, etc.); and is not designed for continuous employee occupancy.

- A. Do not enter any confined space until the area has been tested and declared safe by your supervisor or his designated competent person and you have been authorized to enter the confined space.
- B. Upon entry of a confined space, continue testing the space until you have exited.
- C. Never take compressed gas tanks into a confined space. A leak could be disastrous.
- D. Never take flammable liquids or chlorinated solvents into confined spaces.
- E. Do not smoke in confined spaces.

Permit Required Confined Space (PRCS)

A PRCS is any space:

- Containing or having the potential to contain a hazardous atmosphere
- Containing a material that has the potential to engulf the person
- Has an internal space such that the person could be trapped or asphyxiated (such as sloping walls or floors that reduce to the point of constriction)
- Containing any other serious safety or health hazard
- Can include: pipe, manholes over four feet deep or with a cone in place, sand filters, and excavations.

If management has declared a particular project to be a PRCS, there must be a written entry permit before anyone can enter. This permit will list the following:

- Name/location of the PRCS
- Purpose for entering the PRCS
- Date and duration of entry
- Names of those entering
- Names of those attending on the outside
- Supervisor's name
- List of the expected hazards
- Means by which you intend to isolate or control the hazards
- Conditions under which you deem it acceptable to enter (levels of oxygen, combustibles, toxic materials, etc.)
- Test results of hazards in the atmosphere in the PRCS before and during the entry
- Provisions for rescuing someone from the PRCS along with methods of summoning the rescue
- Communication methods such as phones, radios, hand signals, etc., to allow entrants and attendants to communicate with each other
- Equipment needed, including all the personal protective equipment, retrieval lines, harnesses, alarm systems, rescue/first aid gear, etc., for a safe entry/exit
- Other special precautions or considerations specific to the particular space
- Additional permits you may need for welding or using cleaning solvents

Never enter a PRCS until you have been properly trained and authorized to do so; your name should be entered on the entry permit.

For more information on Confined Spaces, see OSHA Subpart AA at the following link:

<https://www.ecfr.gov/cgi-bin/text-idx?SID=5ecbcb14dbf065688e2b6ba24b4c229d&mc=true&node=sp29.8.1926.aa&rgn=div6>

The most up-to-date link is also available on our website.

Fall Protection

- A. Where you can fall 6 or more feet to a lower level, guardrails, scaffold, or personal fall arrest equipment must provide 100 percent protection.
- B. Body harness shall be worn well snugged around waist and legs.
- C. Keep lanyards as short as possible. Select lanyard length based on objects below that may be struck when falling.
- D. Do not use personal fall arrest equipment unless you have been trained and authorized to use it.
- E. Inspect all personal fall arrest equipment before using it.
- F. Body belts shall not be used as part of a fall arrest system - only a body harness will be used.
- G. All holes two or more inches in diameter will be securely covered and identified to prevent materials from falling onto someone below, someone tripping, or someone falling through that hole.

Lockout/Tagout

“Lockout/Tagout” (LOTO) is intended to protect workers from the accidental release of energy. LOTO is most commonly used when a piece of machinery needs to be repaired. The first step in LOTO is to disengage the wires or literally turn OFF the circuit, and apply a padlock so that no one can turn the power back on until you remove your lock (LOCKOUT). The second step is to apply a tag with your name and the reason the lock was applied (TAGOUT).

The steps outlined below should be followed:

- A. Notify other workers affected by the equipment shutdown.
- B. Turn OFF all primary power sources to the equipment. Lock them and tag them with your name and appropriate message, such as:
 - a. DO NOT START
 - b. DO NOT OPEN
 - c. DO NOT CLOSE
 - d. DO NOT ENERGIZE
 - e. DO NOT OPERATE
- C. Release all energy from secondary sources - capacitors, residual pressure, mechanical, hydraulic, pneumatic, chemical, thermal, counterweights, etc.
- D. Try to operate the equipment to verify that the power is OFF.
- E. Keep the LOTO in force until the work is completed.
- F. Notify affected workers that the equipment will be reactivated.
- G. Remove tags and locks (First ON is Last OFF)
- H. Use the same type locks and tags in order for all employees to understand the process.
- I. Apply only your own lock. Complete and attach your own tags. Never share your lock, key or combination.

- J. If someone else has locked out a piece of equipment whose reactivation could negatively affect you, apply your own lock in addition to his or hers.
- K. If locked out equipment may be repaired and reactivated on the next shift when you're not there, take your lock and tag off before you go, but after your replacement on the next shift puts his/her lock and tag out in your place.

Cell Phone and Personal Electronics

For purposes of this policy, the term "cell phone" is defined as any handheld electronic device with the ability to receive and/or transmit voice, text, or data messages without a cable connection (including, but not limited to, cellular telephones, digital wireless phones, radio-phones/walkie-talkies, telephone pagers, PDAs., ext.).

Use of Cell Phones

(a) General Use at Work. While at work, employees are expected to exercise discretion in using cell phones for excessive personal calls during the workday. Personal calls should be made during non-work time whenever possible.

(b) Unsafe Work Situations. The Company prohibits the use of cell phones or similar devices while at any work site at which time the operation of such device would be a distraction to the user and/or could create an unsafe work environment. This is especially important when operating heavy machinery and driving Company vehicles.

Disciplinary Actions

If found to be using a cell phone during unsafe work situation, disciplinary actions may be taken.

1st Offense - Sent home for the rest of the workday with no pay for remaining hours.

2nd Offense - Sent home for three days without pay.

3rd Offense - Termination of employment from Quality Underground.

Hazard Communication Program

During the normal course of completing your job, you may be exposed to hazardous materials. It is the intention of management to lower the risk of working with these materials by outlining the safety procedures involved:

- A. Quality Underground LLC shall maintain a list of all hazardous materials used on

site.

B. Containers received for use will:

- Be clearly labeled as to the contents
 - Note the appropriate hazard warning
 - List the name and address of the manufacturer or responsible party
- No container will be released for use until the above data is verified.*

B. SDS (Safety Data Sheets) from suppliers of hazardous materials will be maintained by the Quality Underground LLC safety representative, all superintendents, and all foremen. The SDS is available for review by anyone.

C. All containers of hazardous materials will be labeled properly.

D. Never eat or drink when working with hazardous materials.

E. Any chemical spills are to be cleaned immediately as directed on the SDS.

F. Always wear protective equipment when handling chemicals, or other substances, which may have adverse effects.

G. Prior to working with any material which you suspect to be asbestos, contact management for further instructions.

Alcohol/Drug Testing - Drug Free Workplace

The use or possession of alcohol or illegal drugs or substances during working hours is forbidden. When it is determined that a Quality Underground LLC employee or subcontractor is under the influence of any drug or controlled substance which adversely affects his or her ability to perform duties in any way or poses a threat to his/her safety or the safety of others, his/her employment will be subject to disciplinary action, including termination.

Quality Underground LLC has chosen to participate in drug testing procedures administered by the Virginia Associated Contractors Self Insurance Group (VACO) "Drug-Free Workplace Program".

Employees will submit to the procedure in the following circumstances:

- A. Pre-employment testing: prior to being hired, each employee must successfully pass a drug screening test. Employees returning to work after an extended absence are also subject to pre-employment drug testing. Quality Underground LLC may use a refusal to submit to a drug test or a positive confirmed drug test as a basis for refusing to hire the applicant.
- B. When directed to do so by management with or without prior announcement, with or without cause.
- C. During routine periodic physicals. Employees who hold a CDL are subject to the terms set forth by the Department Of Transportation, including alcohol and drug testing.

- D. Random drug testing will be done throughout the year.
- E. Any employee involved in an accident will be referred for alcohol/drug testing. Failure to comply may result in immediate dismissal and may negate any worker compensation claim.
- F. All employees may be subject to “reasonable suspicion” alcohol and drug testing. This is applicable when management has reasonable cause to believe an employee is under the influence of drugs or alcohol while on the job.

Use of Legal Drugs

It is the responsibility of the employee to notify management when he/she is under the influence of a legally prescribed drug. Management will make a decision if an employee under the use of legal drugs may continue to work.

Fleet Safety

Within Quality Underground LLC, safe operation of both equipment and vehicles will always precede expediency or shortcuts. Collectively speaking, as a company, we are dedicated to preventing vehicle accidents and controlling insurance costs. Our goal is to reduce injuries to our employees and to reduce damage to both our equipment and vehicles, to include materials being transported by them. The following points will be adhered to by all drivers/operators of Quality Underground LLC owned equipment or vehicles:

- A. Consumption of alcoholic beverages is prohibited while operating or riding in company equipment or vehicles.
- B. Do not operate a motor vehicle when drugs, alcohol, fatigue, bad vision or other physical impairment reduces your ability and good judgment, or if your mood or attitude does not permit making prudent driving decisions.
- C. Seatbelts will be worn at all times by both equipment operators and vehicle drivers and passengers (if applicable).
- D. Be familiar with the vehicle you are operating and be specially trained and properly licensed if operating larger vehicles.
- E. Obey all traffic laws and posted signs.
- F. Drive defensively to avoid other driver's carelessness. Use headlights in daytime. In accordance with Virginia Department of Motor Vehicles, headlights must be turned on whenever the windshield wipers are operating (except in the intermittent mode).
- G. Do not operate a motor vehicle that is defective in any functional way.
- H. Do not exceed the capabilities/capacities of the vehicle.
- I. As a driver, take the responsibility for regular checks of the vehicle's tire pressure, oil and coolant levels, lights, wipers, back up alarm and regular

servicing for proper mechanical functioning. In addition, verify the vehicle is properly licensed and tagged before operating.

- J. Unless authorized, do not operate a motor vehicle belonging to Quality Underground LLC.
- K. DO NOT USE COMPANY VEHICLES FOR PERSONAL USE unless you have specific authorization to do so from Quality Underground LLC management.
- L. Both the dashboard and floorboard (drivers side) of all company vehicles will be kept clean so nothing can strike you in the face or get caught under the feet of the vehicle operator to cause an accident.
- M. Do not give rides to hitchhikers or strangers.
- N. Report all accidents immediately to management.
- O. Drivers must report all arrests and traffic convictions to management. Repeated traffic convictions or failure to report traffic accidents or convictions may result in disciplinary action.
- P. Never follow another vehicle so closely that you will be unable to make a safe stop under any conditions. Maintain at least a 4 second interval behind vehicles while traveling highway speeds. Longer intervals will be necessary for larger vehicles.
- Q. Do not use cell phones while operating motor vehicles.

Accident Reporting

Work Related Injuries

Report all injuries, no matter how minor, to your supervisor immediately. As soon as practical, report the injury to office personnel.

The foreman of each crew is designated as the primary “responsible person” and is responsible to ensure that any employee under his or her supervision who becomes injured on the job is afforded necessary medical care and/or treatment. The foreman should call 911 immediately for serious or life-threatening injuries. In addition, each foreman will report such injuries to the Quality Underground LLC safety representative as soon as possible. If additional treatment beyond first aid at the jobsite is required, employees will be sent to the doctor. A first aid kit should be maintained at each jobsite. For your own health and safety reasons, exercise extreme caution when a co-worker has been injured. If you are not certified as having completed an OSHA approved CPR or First Aid Class and are knowledgeable in the proper administration of first aid, do not attempt to render assistance to or move the victim, before competent medical authority arrives on the scene.

Vehicle Accident

If you are involved in an accident while operating or are a passenger in a vehicle owned or leased by Quality Underground LLC, take the following steps:

- A. Remain calm.
- B. Contact supervisor and office personnel.
- C. Contact the police department, which has jurisdiction.
- D. Follow procedures as instructed.
- E. Do not argue, accuse or admit blame.
- F. Do not attempt to make any promises as to settlement on the company's behalf.

Osha Checklist

Safety is a continuing process that requires attention to detail every day. Because of the nature of our work, it only takes an instant to become “unsafe,” where an accident or personal injury may result. Each employee, foreman, supervisor and member of the management team must remain totally committed to comply with the safety policies contained herein.

The following checklist is offered to assist you in your daily safety efforts. Additional copies are available upon request.

- ☐ Do you have an OSHA poster properly displayed in a conspicuous place on each worksite?
- ☐ Are emergency telephone numbers posted near the telephone?
- ☐ Is your first aid kit properly stocked?
- ☐ Are all personnel properly equipped with personal protective equipment? Do you insist that this equipment be utilized?
- ☐ Is there a trained first aid person present at all times? If so, does this first aid person possess an up-to-date card?
- ☐ Is fire protection adequate? Are extinguishers properly charged?
- ☐ Are appropriate caution signs, etc., properly posted (i.e., “hard hat area”)?
- ☐ Are petroleum storage containers properly marked? Are they the approved type?
- ☐ Are ladders and hand tools in good condition? Do ladders comply with OSHA regulations?
- ☐ Are electrical extension cords of the three-wire type? Are they in good condition? Is all power supply panels properly grounded? Is temporary lighting properly rigged to comply with OSHA regulations?
- ☐ Are all excavations and/or trenches properly constructed? Are protective railings provided where required by OSHA regulations? Are holes properly

covered?

- ❑ Are motorized vehicles in good working order? Are they serviced regularly?
- ❑ Are open trenches properly shored? Sloped?
- ❑ What about housekeeping? Is the site clean and orderly, free from debris, trash or other hazards?
- ❑ Are required records available and up-to-date?
- ❑ Do you have a Safety Awareness Program within your project?
- ❑ Do you have a positive attitude about safety?

Disciplinary Action

We expect All of our employees to put safety first. Safety is not to be compromised for time or profit. In order to enforce our safety rules, we must reprimand infractions of the aforementioned Safety Procedural policies for Quality Underground LLC.

The following disciplinary actions will be invoked. Management reserves the right to determine the severity of infractions of our safety policies and adjust violations, as they deem necessary.

- | | |
|----------------|--|
| 1st Violation: | A verbal warning will be issued to the employee and documented in the employee's personnel file. |
| 2nd Violation: | A written warning will be issued to the employee with a copy placed in the employee's personnel file. Disciplinary action may include suspension, time off without pay, depending on the severity of the infraction. |
| 3rd Violation: | Employment termination. |

Specialized Areas of Safety

Excavation

Competent Person Duties

Sloping

- A. Be available when any conditions change to reevaluate excavation.
- B. If no soils classification is performed, slope for type C Soil - 1 1/2:1 or 3 x depth of trench plus width of bottom.
- C. If soils classification is performed and you have type B Soil - Slope 1:1 or 2 x

- depth of trench plus width of bottom.
- D. May elect to fill out soils classification/inspection checklist prior to start of work or when condition changes.
- E. If soils classification is performed and you have Type C Soil use #3 above.
- F. Sloping/trench box configuration.
 - 1) follow manufacturers data on box.
 - 2) slope for correct soil type starting 18" below lip of box.
- G. Type B Soil only - you may leave a vertical cut up to 4 feet then cut over horizontal 4 feet and slope off of the back of the horizontal 1:1.
- H. Spoil always toes out at 2 feet back.
- I. Work materials kept 2 feet back.
- J. Never let employees work under any load.
- K. Use parameter barrier when leaving the jobsite.
- L. Never slope a trench or excavation that exceeds 20 feet without an engineered design.
- M. Always use ladder in trenches/excavations 4 feet or more in depth.
- N. Air test if hazardous atmosphere is possible.
- O. Utilities marked and supported and hand exposed.

Shoring

- A. Always classify the soil.
- B. Use proper timber shoring or aluminum hydraulic shoring chart.
- C. Use parameter barrier when leaving the jobsite.
- D. Spoil materials always toe out at 2 feet back.
- E. Work materials always kept 2 feet back.
- F. Never let employee work under loads.
- G. Never enter trench to assemble shoring.
- H. Never shore trenches that exceed 15 feet wide.
- I. Never shore a trench that exceeds 20 feet in depth without an engineered design.
- J. Inspect shoring materials for visible signs of defects.
- K. Be available when any conditions change to reevaluate excavation.
- L. Always use ladder in trenches/excavations 4 feet or more in depth.
- M. Air test if hazardous atmosphere is possible.
- N. Utilities marked, supported and hand exposed.

Trench Boxes

- A. Always have tabulated data for the box being used on site.
- B. Read and be familiar with the data on box.
- C. Use parameter barrier when leaving the jobsite.
- D. Spoil materials always toe out at 2 feet back.
- E. Work materials always kept 2 feet back.
- F. Never leave box off of bottom of trench unless manufacturer allows you to.

- G. Always classify the soil.
- H. Inspect box for visible signs of defects.
- I. Be available when any conditions change to reevaluate excavation.
- J. Always use ladder in trenches/excavations 4 feet or more in depth.
- K. Air test if hazardous atmosphere is possible.
- L. Utilities marked, supported and hand exposed.
- M. Always use ladder inside box.

Designs by a Registered Professional Engineer

- A. Always have the tabulated data for the system on the jobsite.
- B. Never deviate from the tabulated data.
- C. Use parameter barrier when leaving the jobsite.
- D. Spoil materials always toe out at 2 feet back.
- E. Work materials always kept 2 feet back.
- F. Air test if hazardous atmosphere is possible.
- G. Always use ladder in trenches/excavations 4 feet or more in depth inside protective system.
- H. Utilities marked, supported and hand exposed.

****REMEMBER - ANY EXCAVATION/TRENCH SHALL BE PROTECTED AT ANY DEPTH IF THE COMPETENT PERSON SEES VISUAL SIGNS OF POTENTIAL CAVE-IN.***

For more information on Excavations, see OSHA Subpart P at the following link:

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926SubpartPAppB>

The most up-to-date link is also available on our website.

Do's and Don'ts in the Event of a Cave-In

Don'ts:

- X Don't jump into the trench to try to get someone out until proper safety procedures have been followed, or you may also become a victim.
- X Don't panic and try to stay as calm as possible. Those trapped need help and if you panic you won't be much help.
- X Don't move anything from the edge of the trench that might help locate the victim.
- X Don't try to use a backhoe to dig the victims out. You don't know where the victim is located, and you could seriously injure or cause the victims death.
- X If you decide to jump in the trench to help, without making the trench safe, someone might have to dig you out also.

Do's

- ✓ Look to see if someone is trapped. They might not be trapped.
- ✓ Get help at once. One or two people can't do much alone during a rescue.

- ✓ Start looking for shoring equipment such as lumber and tools that can be used in the rescue.
- ✓ Control the area. People rushing in or equipment can cause a secondary cave-in. They can also move or destroy location or mark that can tell the rescue party where to look.
- ✓ Give the rescuers all the information you can. They need to know how many people are trapped, how deep they are and the area they were working in.
- ✓ If the victim is not covered completely, you must try to help without exposing yourself to danger. Use something to move dirt away from his head and chest. Many times, this can be done without entering the trench. A shovel or board will do the job.

Virginia Confined Space Standards

Definitions

The following words and terms, when used in these regulations, shall have the following meaning, unless the context clearly indicates otherwise.

"Attendant" means an individual with no other duties assigned to remain immediately outside the entrance to the confined space and who may render assistance as needed to employees inside the space.

"Blind" or **"Blinding"** or **"blanketing"** means the absolute closure of a pipe, line or duct, to prevent passage of any material (e.g., by fastening a solid plate or "cap" across the pipe).

"Calibration" or **"Recalibration"** means a laboratory or bench-top re-setting of alarm points, spans and zeros, if applicable, according to manufacturer's specifications. "Calibration" or "recalibration" shall be conducted by a factory authorized service center, a factory trained technician, or a trained company technician.

"Confined Space" means any space not intended for continuous employee occupancy, having a limited means of egress, and which is also subject to either the accumulation of an actual or potentially hazardous atmosphere as defined in this subsection. Confined spaces generally include, but are not limited to, storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, manholes, underground utility vaults, acid tanks, digesters, ovens, kilns, pulpers, tunnels, and pipelines. Open top spaces more than 4 feet in depth such as pits, tubs, vaults and vessels may also be confined spaces if the three criteria above are met.

"Engulfment" means the surrounding and effective capture of a person by finely divided particulate matter or a liquid. There is a potential for engulfment when such particulate matter or liquid exists in a sufficient quantity or at a sufficient pressure to surround a person before normal exit can be effected.

"Entrant" means any employee who enters a confined space. **"Entry"** means any action resulting in any part of the employee's face breaking the plane of any opening of the confined space, and includes any ensuing work activities inside the confined space.

"Entry Permit" means the employer's written authorization for employee entry into a confined space under defined conditions for a stated purpose during a specified time.

"Field Checked" means a method of checking an instrument for a proper response in the field. It is a check of the instrument's functionality and is a pass-fail or go-no-go check. When an adequate response is not obtained then the equipment should be removed from service and adjusted or repaired by a factory authorized service center, or a factory trained technician, or a trained company technician.

"Ground-Fault Circuit Interrupter" means a device whose function is to interrupt the electric circuit to the load when fault current to ground exceeds a predetermined value that is less than that required to operate the overcurrent protective device of the supply circuit.

"Hazardous Atmosphere" means an atmosphere presenting potential for death, disablement, injury, or acute illness from one or more of the following causes:

- A. A flammable gas, vapor, or mist in excess of 10% of its lower explosive limit (LEL);
- B. An oxygen deficient atmosphere containing less than 19.5% oxygen by volume or an oxygen enriched atmosphere containing more than 23% oxygen by volume;
- C. An atmospheric concentration of any substance listed in Subpart Z of Part 1910 Standards above the listed numerical value of the permissible exposure limit (PEL); or
- D. A condition immediately dangerous to life or health as defined in this subsection.

"Immediately Dangerous to Life or Health (IDLH)" means any condition that posed an immediate threat to life, or which is likely to result in acute or immediately severe health effects. See **Appendix A** for concentrations at which several chemicals exhibit IDLH effects.

"Immediate Severe Health Effects" means that an acute clinical sign of serious, exposure-related reaction is manifested within 72 hours of exposure.

"Lockout or Tagging" means placing locks or tags on the energy isolating device in accordance with Paragraph 3(B) of this standard. Tags shall indicate that the energy isolated device shall not be operated until the removal of the tag.

"Qualified Person" means a person who is trained to recognize the hazard(s) of the confined space and how to evaluate those anticipated hazards and shall be capable of specifying necessary control measures to assure worker safety. The employer may designate an employee as employer representative for the purpose of assuring safe confined space entry procedures and practices at a specific site. The qualified person may also be the entrant when permissible according to paragraph 5(A) of this standard.

"Rescue Team" means those persons whom the employer has designated prior to any confined space entry to perform rescues from confined spaces. A rescue team may consist of outside emergency personnel, provided the training requirements of paragraph 7(A)(2) of this standard have been met.

"Retrieval Line" means a line or rope secured at one end to a worker's safety belt, chest or body harness, or wristlets with the other end secured to an anchor point or lifting device located outside the entry portal. The anchor point shall not be a motor vehicle. Retrieval lines must be of sufficient strength to remove an entrant when necessary.

"Zero Mechanical State" means that the mechanical potential energy of all portions of the machine or equipment is set so that the opening of the pipe(s), tube(s), hose(s) or actuation of any valve, lever, or button, will not produce a movement which could cause injury.

Scope and Application

This section prescribes basic mandatory practices and procedures which employers must establish and use for employee entry into and work within confined spaces.

This section applies to all employers with employees covered by Virginia Standards for General Industry (Part 1910) and Virginia Standards for Construction Industry (Part 1926) except for employers with employees covered by the telecommunication standards in 1910.268.

Preparation For Entry Into A Confined Space

The qualified person shall assure that the following procedures have first been completed before entry into a confined space:

- A. All pumps or lines which may convey flammable, injurious, incapacitating or oxygen deficiencies substances shall be blinded, doubled blocked or bled in such a manner that the line or pump could not be inadvertently opened or reconnected. Closing of valves alone is not acceptable without blinding, double blocking or bleeding.
- B. All fixed mechanical equipment capable of causing injury shall be cut off so it will not produce any movement. All electrical, excluding lighting shall be locked out in the off position with a key-type pad lock. The key shall remain with the person working in the confined space.
- C. All confined spaces shall be flushed or otherwise purged of flammable, injurious or incapacitating substances to the extent feasible. The initial cleaning shall be done from outside the confined space to the extent feasible.
- D. Where the existence of a hazardous atmosphere is demonstrated by tests performed by the qualified person, mechanical ventilation shall be used to reduce the hazardous substance(s) to a safe level and shall be used continuously as long as the recurrence of the hazard is possible, or appropriate personal protective equipment is used.

Atmospheric Testing

The qualified person shall assure that each confined space into which an employee may be required to enter is tested immediately prior to entry by a qualified person using direct reading instruments with remote sampling capacity for the following conditions:

- Oxygen level;
- Potential flammable hazard; and
- Toxic materials known or expected to be present.

When an attendant has been assigned, a qualified person shall perform atmospheric testing during occupancy at intervals dependent on the possibility of changing conditions, but in no case less frequently than hourly. Atmospheric test results must be recorded on the permit at least hourly.

When a non-attendant entry is permitted, at least one entrant shall wear a continuous monitoring device equipped with an alarm and capable of evaluating oxygen concentrations and combustible gas concentrations in the confined space. When large confined spaces are entered, a sufficient number of monitoring devices shall be either worn or located in the work area to adequately monitor the atmosphere. The qualified person shall assess the need for mechanical ventilation in all confined spaces in accordance with the written permit system.

Each atmospheric testing instrument shall be calibrated, according to the manufacturer's specifications, at least yearly, and field checked immediately prior to its use. Instruments which are out of calibration or fail a field check cannot be used until they are properly calibrated.

Attendants and Rescue Teams

The qualified person shall evaluate each confined space that an employee may be required to enter by identifying and evaluating the hazards and potential hazards of that space. The qualified person then may allow an employee to make an unaccompanied, non-attendant entry into a confined space which had no potential for engulfment or immediately dangerous to life or health atmosphere, and only low potential for hazardous atmosphere, provided at least one entrant wears a continuous monitoring device equipped with an alarm and capable of evaluating oxygen and combustible gas concentrations.

An attendant shall be stationed immediately outside every confined space which has been found to have an immediately dangerous to life and health atmosphere, a hazardous atmosphere or a potential for engulfment. The attendant shall be trained in the use of rescue equipment, basic first aid, CPR, and yearly practice rescue techniques, be within sight or call of the entrant, and have the means available to summon assistance.

Rescue teams shall be available where the confined space has been found to have an immediately dangerous to life and health atmosphere, a hazardous atmosphere or a potential for engulfment. Outside emergency personnel may be used provided they have been annually trained on how to use rescue equipment, CPR, basic first aid and yearly practiced rescue techniques.

Permit Systems

The Company shall develop and implement a written entry permit system for all confined space entries which includes a written permit procedure that provides the following minimum information:

- A. The minimum acceptable environmental conditions which are acceptable to the employer for entry work in the confined space;
- B. A record of atmospheric test results conducted prior to entry and at least hourly thereafter when an attendant is required;
- C. The last calibration date(s) for the oxygen detector and combustible gas indicator being used;
- D. The signature of the qualified person responsible for securing the permit and

- reviewing conditions prior to entry;
- E. A written description of the location and type of work to be done;
- F. Each permit shall be dated and carry an expiration time of not more than 12 hours; the permit may be extended for another 12-hour period pending recertification of acceptable conditions.

Entry permit forms shall be retained until the corresponding entry has been successfully completed. A copy of The Companies current form can be found in *Appendix C*.

Training

The employer shall ensure that the qualified person and all employees who may be required to enter a confined space have received training covering the following subjects:

- A. Hazard recognition;
- B. Use of respiratory protection equipment if the use of such equipment will be required.
- C. Use of atmospheric testing devices for those employees required to perform atmospheric tests. Training shall cover field checks as specified by the manufacturer, normal use, and specific limitations of the equipment;
- D. Lockout and tagging procedures;
- E. Use of special equipment and tools;
- F. Emergency and rescue methods and procedures.

Rescue Teams

Rescue teams shall be trained to use the equipment they may need to perform rescue functions assigned to them.

- A. At least annually rescue teams shall practice removing victims through openings and portals of the same size, configuration and accessibility as those spaces from which an actual rescue could be required.
- B. The attendant or at least one member of each rescue team shall hold current certification in basic first aid and CPR (Cardiopulmonary Resuscitation).

The employer shall maintain the records of the most recent training program conducted. These records shall include the date(s) of the training program, the instructor(s) of the training program, and the employee(s) to whom the training was given.

Special Equipment and Tools

No sources of ignition shall be introduced into a confined space until it has been determined by proper testing that dangerous air contamination due to flammable and/or explosive substances does not exist.

All electrical cords, tools, and equipment shall be inspected for visually detectable defects before use in a confined space. In the absence of low voltage circuits or double insulated tools, equipment shall be of the heavy-duty insulation type or ground fault circuit interrupters shall be used. Temporary lighting shall conform with 1926.405 (a)(2)(ii)(G). Portable electric lighting used in wet and or other conductive locations, shall be operated at 12 volts or less. 120-volt lights may be used if protected by a ground fault circuit interrupter.

No fan or other equipment used for removing flammable gases or vapors shall create an ignition hazard.

Cylinders of compressed gases shall never be taken into a confined space and shall be turned off at the cylinder valve when not in use. When to be left unattended the torch and hose shall be removed from the confined space. Open end fuel gas and oxygen hoses shall be immediately removed from enclosed spaces when they are disconnected from the torch or other gas consuming device.

Exempt from this rule are cylinders that are part of self-contained breathing apparatus or resuscitation equipment.

Tripods, Safety Harnesses, Retrieval Lines, and Respirator Protection

Where the existence of an immediate dangerous to life or health atmosphere or potential for engulfment has been demonstrated by the qualified person, the following requirements shall also apply:

- A. An appropriate retrieval device with retrieval line shall be used by any entrant(s), except where the retrieval lines themselves could cause a hazard because of structures, equipment, or becoming entangled with other lines inside the confined space. Where a retrieval line is used, the free end of the retrieval line shall be secured outside the entry opening either by another person holding the line or by securing it in some other manner.
- B. When entry is made through a top opening, a hoisting device such as a tripod shall be provided for lifting employees out of the space.

When a person is required to enter a confined space which has either an immediately dangerous to life or health atmosphere or a hazardous atmosphere there shall be either a positive pressure self-contained breathing apparatus or a combination

positive pressure air line respirator with an auxiliary self-contained air supply immediately outside the entrance of the confined space.

When a person(s) must enter a confined space which contains either an immediately dangerous to life or health atmosphere or a hazardous atmosphere without a retrieval line attached, then each entrant shall be supplied with and wear a MSHA/NIOSH approved positive pressure self-contained breathing apparatus.

For more information on Confined Spaces, see OSHA Subpart AA at the following link: <https://www.ecfr.gov/cgi-bin/text-idx?SID=5ecbcb14dbf065688e2b6ba24b4c229d&mc=true&node=sp29.8.1926.aa&rgn=div6>

The most up-to-date link is also available on our website.

Employees Using Respirators

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard. You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

Respirable Crystalline Silica

Specified exposure control methods. (1) For each employee engaged in a task identified on **Appendix B**, the employer shall fully and properly implement the engineering controls, work practices, and respiratory protection specified for the task on

Appendix B, unless the employer assesses and limits the exposure of the employee to respirable crystalline silica in accordance with paragraph (d) of this section.

Appendix

Appendix A – Concentrations

Concentrations at Which Some Common Substances Exhibit Immediately Dangerous to Life or Health (IDLH) Effects

Appendix A is a non-mandatory appendix. According to the National Institute for Occupational Safety and Health (NIOSH) the levels listed below represent a maximum concentration from which one could escape within 30 minutes without any escape impairing symptoms or any irreversible health effects. These levels were published by NIOSH in September 1985 and are subject to frequent change. This list is not meant to be all inclusive but rather is meant to list some of the more frequently encountered chemicals in confined spaces.

CONCENTRATIONS AT WHICH SUBSTANCES

EXHIBIT IDLH EFFECTS

<u>CHEMICAL NAME</u>	<u>IDLH LEVELS*</u>	
Ammonia	500	ppm
Benzene	2000	ppm
Butadiene	20,000	ppm
2 - Butanone	3,000	ppm
Carbon Dioxide	50,000	ppm
Carbon Monoxide	1,500	ppm
Chlorine	300	ppm
Chlorobromomethane	5,000	ppm
Chloroform	1,000	ppm
Cresol	250	ppm
Cyclohexane	10,000	ppm
Dichlorodifluoromethane	50,000	ppm
Dichloromonofluoromethane	50,000	ppm
Ethyl Acetate	10,000	ppm
Fluorotrichloromethane	10,000	ppm
Heptane	4,250	ppm
Hexane	5,000	ppm
2 - Hexanone	5,000	ppm

Hydrogen Chloride	100	ppm
<u>CHEMICAL NAME</u>	<u>IDLH LEVELS*</u>	
Hydrogen Sulfide	300	ppm
Isopropyl Alcohol	20,000	ppm
Liquified Petroleum Gas	19,000	ppm
Methyl Alcohol	25,000	ppm
Methyl Cellosolve	2,000	ppm
Methyl Cellosolve Acetate	4,500	ppm
Methyl Chlorform	1,000	ppm
Methylene Choride	5,000	ppm
Nitric Oxide	100	ppm
Octane	50	ppm
Ozone	3,750	ppm
Pentane	5,000	ppm
Petroleum Distillates Mixture	10,000	ppm
Phenol	100	ppm
Phosgene	2	ppm
Propane	20,000	ppm
Sodium Hydroxide	200	mg/m3
Stoddard Solvent	5,000	ppm
Styrene	5,000	ppm
Sulfur Dioxide	100	ppm
1,1,2,2, - Tetrachlor-12 - Difluoroethane	15, 000	ppm
Toluene	2,000	ppm
Toluene - 2,4 - diisocyanate	10	ppm
Trifluoromonobromomethane	50,000	ppm
Turpentine	1,900	ppm
Xylene	10,000	ppm

*Reference NIOSH/OSHA Pocket Guide to Chemical Hazards DHEW (NIOSH Publication No. 78-210)

Appendix B – Silica Tables

Equipment / Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours /shift	> 4 hours /shift
(i) Stationary masonry saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions	None	None
(ii) Handheld power saws (any blade diameter)	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. – When used outdoors. – When used indoors or in an enclosed area.	None APF 10	APF 10 APF 10
(iii) Handheld power saws for cutting fiber- cement board (with blade diameter of 8 inches or less)	For tasks performed outdoors only: Use saw equipped with commercially available dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency.	None	None
(iv) Walk-behind saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. – When used outdoors. – When used indoors or in an enclosed area.	None APF 10	None APF 10
(v) Drivable saws	For tasks performed outdoors only: Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions	None	None

Equipment / Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours /shift	> 4 hours /shift
(vi) Rig-mounted core saws or drills	Use tool equipped with integrated water delivery system that supplies water to cutting surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None
(vii) Handheld and stand-mounted drills (including impact and rotary hammer drills)	Use drill equipped with commercially available shroud or cowl with dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes	None	None
(viii) Dowel drilling rigs for concrete	For tasks performed outdoors only: Use shroud around drill bit with a dust collection system. Dust collector must have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes.	APF 10	APF 10
(ix) Vehicle-mounted drilling rigs for rock and concrete	Use dust collection system with close capture hood or shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector.	None	None
	OR Operate from within an enclosed cab and use water for dust suppression on drill bit	None	None

Equipment / Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours /shift	> 4 hours /shift
(x) Jackhammers and handheld powered chipping tools	Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact. – When used outdoors. – When used indoors or in an enclosed area. OR Use tool equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism	None APF 10	None APF 10
	– When used outdoors. – When used indoors or in an enclosed area.	None APF 10	None APF 10
(xi) Handheld grinders for mortar removal (i.e., tuckpointing)	Use grinder equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism	APF 10	APF 25

Equipment / Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours /shift	> 4 hours /shift
(xii) Handheld grinders for uses other than mortar removal	For tasks performed outdoors only: Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. OR Use grinder equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism. – When used outdoors. – When used indoors or in an enclosed area.	None None None None	None None None APF 10
(xiii) Walk-behind milling machines and floor grinders	Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. OR Use machine equipped with dust collection system recommended by the manufacturer. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions Dust collector must provide the air flow recommended by the manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes.	None None	None None
(xiv) Small drivable milling machines (less than half-lane)	Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant Operate and maintain machine to minimize dust emissions.	None	None

Equipment / Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours /shift	> 4 hours /shift
(xv) Large drivable milling machines (half-lane and larger)	For cuts of any depth on asphalt only: Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust. Operate and maintain machine to minimize dust emissions.	None	None
	For cuts of four inches in depth or less on any substrate: Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust. Operate and maintain machine to minimize dust emissions.	None	None
	OR Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant. Operate and maintain machine to minimize dust emissions.	None	None
(xvi) Crushing machines	Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (e.g., hoppers, conveyers, sieves/sizing or vibrating components, and discharge points). Operate and maintain machine in accordance with manufacturer's instructions to minimize dust emissions Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote control station.	None	None
(xvii) Heavy equipment and utility vehicles used to abrade or fracture silica- containing materials (e.g., hoe-ramming, rock ripping) or	Operate equipment from within an enclosed cab.	None	None
	When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions.	None	None
(xviii) Heavy equipment and utility vehicles for tasks such as grading and excavating but not including: demolishing, abrading, or fracturing	Apply water and/or dust suppressants as necessary to minimize dust emissions.	None	None
	OR When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab.	None	None

Appendix C – Confined Space Permit

PERMIT CONFINED SPACE ENTRY						Form is to be	
completed by Superintendent, reviewed with entrants and attendants and then posted.							
Purpose of Entry: _____				Physical Address: _____			
Acceptable conditions before entry checklist		Space Indication →		1.	2.	3.	4.
Air monitors used constantly.				Y N N/A	Y N N/A	Y N N/A	Y N N/A
All electrical power switches locked off, otherwise, electrical switches locked out.				Y N N/A	Y N N/A	Y N N/A	Y N N/A
Mechanical isolation achieved by disconnecting linkages or removing drive belts or chins, otherwise equipment with mechanical parts blocked blinded, lockout/tagout to prevent rotation.				Y N N/A	Y N N/A	Y N N/A	Y N N/A
Confined space vented with blowers; all available ventilation operating and maintaining safe conditions.				Y N N/A	Y N N/A	Y N N/A	Y N N/A
Space is barricaded to prevent accidental entry by crew, pedestrians or vehicles.				Y N N/A	Y N N/A	Y N N/A	Y N N/A
Only hazard posed by the permit space is an actual or potential hazardous atmosphere.				Y N N/A	Y N N/A	Y N N/A	Y N N/A
If ventilation system stops working, entrants can exit the space safely.				Y N N/A	Y N N/A	Y N N/A	Y N N/A
Monitor batteries charged. Replacement batteries charged and available.				Y N N/A	Y N N/A	Y N N/A	Y N N/A
Entrance cover can be safely removed.				Y N N/A	Y N N/A	Y N N/A	Y N N/A
Personal protective equipment.				Y N N/A	Y N N/A	Y N N/A	Y N N/A
If a hazard is detected during entry, employees must exit the space immediately, the space reevaluated prior to re-entry.				Y N N/A	Y N N/A	Y N N/A	Y N N/A
Other:				Y N N/A	Y N N/A	Y N N/A	Y N N/A
Monitoring Result							
Space 1.	Initials of Tester: _____	Time	O ₂ %	LEL%	Toxicity ppm or mg/m ³		
	Before Entry						
	During Entry						
	Notes:						
Space 2.	Initials of Tester: _____	Time	O ₂ %	LEL%	Toxicity ppm or mg/m ³		
	Before Entry						
	During Entry						
	Notes:						
Space 3.	Initials of Tester: _____	Time	O ₂ %	LEL%	Toxicity ppm or mg/m ³		
	Before Entry						
	During Entry						
	Notes:						
Space 4.	Initials of Tester: _____	Time	O ₂ %	LEL%	Toxicity ppm or mg/m ³		
	Before Entry						
	During Entry						
	Notes:						
Name of Entry Supervisor: _____		Signature: _____			Date: _____	Time: _____	
Name of Entry Supervisor: _____		Signature: _____			Date: _____	Time: _____	
Name of Entry Employee: _____		Signature: _____			Date: _____	Time: _____	
Name of Entry Employee: _____		Signature: _____			Date: _____	Time: _____	

Safety Manual Acknowledgement

I have read the policies and procedures outlined in the Quality Underground Safety Manual. I understand that willful violation of safety policies and procedures may result in immediate termination.

I further understand that Quality Underground may modify, revise and update the Safety Manual at any time. I am also aware that this updating may include additions or deletions.

I also certify that I have had ample time to discuss the manual and its contents with Company representatives and I fully understand the contents.

I understand that the Safety Manual is available online at:

<https://www.qualityunderground.com/safety>

With this knowledge I accept the policies outlined herein as a condition of employment.

Print Employee Name: _____

Employee Signature: _____

Date: _____