

**S
A
F
E
T
Y

M
A
N
U
A
L**

TriCo Regional Sewer Utility



Revised June 2019

TABLE OF CONTENTS

	Page
Appendices	I
Introduction	II
1.0 Responsibilities	
2.0 Job Safety Training Program	
3.0 Driver Safety Program	
4.0 Personal Protection Equipment (PPE)	
5.0 Work Related Injuries	
6.0 Safety Inspections	
7.0 Confined Space Entry Written Program	
8.0 Excavation Protection (Trenching)	
9.0 Rules on Machine Use	
10.0 Working in Public Right of Way	
11.0 Proper Lifting Procedure	
12.0 Work Area Safety Guide	
13.0 Respirable Crystalline Silica Dust	
14.0 Bloodborne Pathogens Program	
15.0 Energy Control Written Program	
16.0 Arc Flash Program	
17.0 Hazard Communications Program (HAZCOM)	
18.0 Emergency Action Plan	
APPENDIX	

APPENDICES

- A. Vehicle Use Acknowledgment Form
- B. OSHA Injury and Illness Incident Report (Form 301)
- C. OSHA Log of Work-Related Injuries and Illnesses (Form 300)
- D. Report of Injury Form
- E. Accident Reporting Form (in-house)
- F. Driver's Report of Accident (insurance)
- G. Refusal for Hepatitis B Vaccination
- H. Employee Exposure Incident Report to a Bloodborne Pathogen
- I. Employee Refusal of Post Exposure Medical Evaluation
- J. Lockout Checklist / Safe Startup Checklist
- K. References
- L. Revisions and Amendments
- M. Acknowledgment Form

TRICO REGIONAL SEWER UTILITY

SAFETY MANUAL

Purpose/Mission Statement

Purpose

The primary purpose of the TriCo Safety Program is to provide a safe work environment for employees by giving them the information necessary to prevent accidents. The second function of the manual is to establish guidelines for TriCo departments to use in order to prevent or respond to accidents. General information, as well as interpretations of state/federal regulations, and TriCo policies relating to safety, insurance, and workers' compensation, are all included in this manual. And while this manual does not cover all TriCo's risk managing activities (certain departments may have risk management and safety procedures that are more detailed and not included herein), the written guidelines contained in this manual must be adhered to in all work areas of TriCo Regional Sewer Utility.

Department Managers are required to know, reference, and use this manual. They are also ultimately responsible for conveying this information to employees whenever such information is relevant to an employee's job. In addition, Managers must develop and implement department specific safety programs which include regular safety meetings, job specific training, provisions for safety equipment, and record keeping procedures. Most importantly, department Managers must understand and convey that safety is an important component of every employee's job performance.

Mission

All employees are responsible for cooperating with and supporting the safety activities of TriCo. Every employee is expected, as a condition of employment, to be concerned with personal safety, safety of fellow workers, safety of the public, and timely reporting of accidents. In affirmation of this, all TriCo employees should share in the values of the TriCo Director and Department Managers which are as follows:

To protect TriCo from loss by:

- Promoting the health and physical well-being of employees and citizens who come in contact with utility operations,
- Preventing the disruption of services, and
- Minimizing financial risk.

Accidents don't just happen by themselves. They are "caused." An effective safety program led by a safety conscious work force, can prevent accidents. Therefore, TriCo is committed to providing an environment where all employees are expected to be safety conscious and every Manager is required to follow, promote, and enforce safe work practices and procedures. Cooperation and communication are essential to creating such an environment. So, for your own safety and personal risk management, as well as for the safety of others, talk about safety issues, read this manual, follow the written procedures, and always consider the "safest" way to do the job.

RESPONSIBILITIES

1.0 TriCo Director

TriCo Director is responsible for the safety in the organization's daily operations. However, for practical purposes, the authority for safe operations is delegated down to department management.

1.1 Management

Each department at TriCo is unique in its expertise, services provided and organizational structure. The Department Manager is responsible for assuring that safety is communicated effectively throughout the department. Managers understand the specific competencies and tasks to be performed safely and they are responsible for making sure that:

- Employees understand the department's Safety Rules and Procedures and how to perform the work safely.
- Employees receive on-the-job instructions on the practices and procedures necessary to perform job assignments safely and correctly.
- Employees have the correct tools and equipment along with knowledge of the proper use of those tools and equipment to do their job safely.
- Employees are provided with the proper personal protective equipment and instructed on its safe use and care. Specifically, Managers must make sure all employees are familiar with:
- The chemicals and other hazards they work with, procedures for handling those hazards in a safe manner, emergency procedures to use in case of an accidental exposure, and location of safety data sheets (SDS).
- Emergency procedures including evacuation, the location of emergency showers and eye wash units (if applicable), the location of First-Aid kits and the identification of individuals trained in First Aid
- Applicable OSHA standards and when to contact your Manager for help.
- How to investigate reported hazards and prepare Incident Reports for future preventative measures.
- Responsibilities for participation in regular safety meetings.
- How to self-inspect TriCo job sites.

1.2 Chief Operator

It is the responsibility of Chief Operator to serve as the primary back-up to TriCo Director/Human Resource. Chief Operator is to help promote employee health and safety. Chief Operator acts as a resource and a support consultant to various TriCo's departments on issues relating to health and safety. Chief Operator is responsible for:

- Administers TriCo's safety program including scheduling training for staff, conducting weekly safety meetings, purchasing PPE and maintaining safe working conditions.
- Observes and enforces safety precautions as set forth in TriCo's safety manual policies.
- Reviews and evaluates safety processes and advises management if changes are needed.
- Responds to inquiries on unsafe working conditions, investigating and making corrections, as needed.
- Researches, develops, maintains, and implements changes to the safety manual.
- Participates in the Indiana Environmental Association (IWEA) Safety Committee.
- Collaborates with other organizations/agencies on safety training.
- Conducts annual safety inspections of the wastewater treatment plant.

- Maintains the required safety and health document including the OSHA 300A log of occupational injuries and illnesses.
- Assists in accident/injury investigations.
- Conducts investigations into employee inquiries, suggestions, and complaints.
- Maintains Safety Data Sheets (SDS) by updating and retiring as required.
- Participates in regulatory agency inspections and investigations to ensure compliance with federal and state regulations.
- Performs periodic inspections of all motorized vehicles

1.3 Employee Responsibilities

- Familiarize yourself with TriCo's Safety Rules and Procedures. Get answers to your questions through your Manager.
- Coordinate and cooperate with your co-workers to identify hazards, and to prevent potential accidents.
- Learn and observe all safe practices governing your work.
- Offer safety suggestions that contribute to safer work within your environment.
- Properly use and care for all personal protective equipment and safety devices.
- Report any injury or incident immediately to your Manager or by the end of your shift as appropriate.
- Work diligently to keep yourself, your co-workers and TriCo's customers safe.

Disciplinary Actions

Violations of this policy are subject to the same disciplinary action outlined in the Employee Handbook. TriCo reserves the right to terminate an employee for any severe or willful unsafe act. **Failure to report injuries or near misses are considered a violation of this policy and will follow the disciplinary actions as outlined in the Employee Handbook.**

2.0 JOB SAFETY TRAINING PROGRAM

2.1 Safety training will be conducted on an ongoing basis for members of the various Departments. Appropriate training will be given to all employees (new, transfer and current) on an annual basis. Specific training will be given according to the appropriate job skill areas. Additionally, training periods will be scheduled whenever a change occurs in safety procedures or equipment.

2.2 All training activities shall be recorded through minutes and certificates. Records will be maintained at the Administrative Office and Water Resource Recovery Facility.

2.3 Areas of training will include but are not limited to:

- A. Orientation
- B. Confined Space Entry
- C. Fire Extinguishers
- D. First Aid
- E. Defensive Driving
- F. Personal Protection - Eye
- G. Personal Protection - Foot and Hand
- H. Personal Protection - Head
- I. Personal Protection - Ear
- J. Personal Protection - Respiratory
- K. Trenching/Excavating
- L. Welding Equipment
- M. Working in a Public Right-of-Way

- N. Right to Know - On Hazardous Materials - Safety Data Sheets
- O. Flammable Liquids
- P. Ladders
- Q. Proper Lifting Procedure
- R. Accident Reporting and Worker's Compensation
- S. Rules on Machine Use
- T. Emergency Action Plan
- U. Fire Prevention Plan
- V. Storage of Flammable and Combustible Liquids
- W. Lockout / Tag out
- X. Electrical safety
- Y. Bloodborne Pathogens

2.4 Job Safety Training Procedures

No Manager should assume that a newly hired, newly assigned, or reassigned employee clearly knows all the safe job procedures. All employees shall participate in the job-specific training provided by TriCo.

3.0 DRIVER SAFETY PROGRAM

3.1 Purpose

This policy has been developed to define standards of conduct for staff who operate motor vehicles and power industrial trucks (relating to fire protection, design, maintenance, use of fork trucks, tractors, platform lift trucks, motorized hand trucks, and other specialized industrial trucks powered by electric motors or internal combustion engines) while conducting TriCo business. The primary goal of this policy is to help prevent accidents and minimize the risk of personal injury associated with those incidents.

3.2 Scope

This policy applies to individuals who, in the course of their employment, are frequently required to operate a motor vehicle, TriCo-owned or personally owned, to conduct TriCo business.

3.3 Definitions

For the purpose of this policy, "motor vehicle operator" refers to any staff, 18 years of age or older, who frequently operates a motor vehicle while conducting TriCo business. "Frequently" shall be defined as once a week or more. Individuals who are under 18 years of age may not operate a motor vehicle to conduct TriCo business.

3.4 Policy

Driving History Review. A review of the driving history of all individuals will be conducted prior to hire, transfer or promotion into a position that requires the frequent operation of a motor vehicle for TriCo business.

Driver's License. All TriCo motor vehicle operators must be in possession of a valid driver's license from the state of Indiana. They must also sign the Vehicle Use Acknowledgment Form (Appendix A) that allows TriCo Office to obtain state driving records. In the event that an employee's job description requires him or her to drive a "commercial vehicle," the employee will be required to obtain and maintain a valid Indiana Commercial Driver's License.

Vehicle Operator Responsibility. Motor vehicle operators must report all traffic citations received while on TriCo business to their Supervisor. They must also report the onset of any physical or mental condition that may impair their ability to drive.

Motor vehicle operators are required to conduct a vehicle safety inspection prior to the operation of the vehicle. Windows and mirrors must be scraped and defrosted during inclement weather. Deficiencies or any mechanical defect that would jeopardize the safe operation the vehicle (such as a leaking gas line or overheating engine) must be corrected immediately. Vehicles found to be in unsafe condition are not to be operated until repairs are made. It is the responsibility of all motor vehicle operators to drive in a safe manner and conform to all applicable laws and regulations.

Motor vehicle operators must:

1. Wear seat belts/shoulder harnesses as provided in the vehicle.
2. Wearing radio headsets shall not be allowed while driving. The radio volume shall not interfere with hearing of traffic warning devices.
3. Cell phones shall not be used while operating a TriCo vehicle. If the call must be taken, the employee must pull off to the side of the road and take the call.
4. Utilize mechanical and/or hand signals at all times to inform others of their intentions.
5. Ensure that the vehicle is secured when parked by:
 - Turning the ignition switch off and removing the key.
 - Making sure that vans and all other vehicles equipped with automatic transmissions are placed in "park" and that vehicles equipped with manual transmissions are placed "in gear."
 - Setting the hand brake.
 - Chocking the rear wheels of the vehicle or turning the front wheels toward the curb when the vehicle is parked on an incline.
6. Ensure the safe transport of all materials and goods by:
 - Securely fastening all loads, regardless of weight or height, to prevent rolling, pitching, shifting or falling. No one will be allowed to physically "steady" a load while riding in the back of the vehicle.
 - Securely fastening all doors while the vehicle is in operation.
 - Securing tailgates in an upright position while the vehicle is moving, except when the load exceeds the length of the vehicle bed.
 - Affixing a red flag to the end of any load that extends two feet or more beyond the end of the vehicle.
 - Ensuring that loads do not extend beyond the width of the vehicle.
7. Ensure the safety of all passengers by:
 - Requiring them to use seat belts.
 - Not allowing passengers to routinely ride in the bed of a truck. However, when any passenger must ride in the bed of a vehicle, they must be seated at all times. **Passengers will not be allowed to sit on the tailgate or sides of the vehicle nor extend their arms or legs beyond the vehicle while it is moving.**
 - Prohibiting any passenger from riding on a trailer while it is being towed.
 - Prohibiting more than two passengers in the front seat of any vehicle unless additional seat restraints have been installed.
 - Prohibiting any passenger from riding between bucket-type seats, on the engine cowling or placing a chair between the seats while the vehicle is moving.
8. Drive defensively at all times.

Management Responsibility. Management is responsible for ensuring that TriCo- owned vehicles are operated by authorized TriCo motor vehicle operators only. TriCo Director is

required to conduct an **annual** driver's license review to verify that each motor vehicle operator holds a valid license and is complying with all restrictions.

Managers must also:

1. Immediately notify TriCo Office if an Employees operator's license has been suspended or revoked.
2. Review the Vehicle Safety Policy with each new employee before authorizing the employee to operate a TriCo-owned vehicle.
3. Schedule additional training as required to ensure the safe operation of special purpose vehicles, such as sweepers, snowplows, riding mowers, etc.

Chief Operator or TriCo Director will document all training and maintain copies.

TriCo Responsibility. TriCo is responsible for equipping each TriCo-owned vehicle with safety equipment necessary for safe operation during inclement weather. TriCo will also equip each of its vehicles with a first aid kit and fire extinguisher.

Accident Reporting. It is the responsibility of all TriCo motor vehicle operators to report all accidents, regardless of damage. Accidents that occur on TriCo property must be reported immediately to their Managers. Accidents that occur off TriCo property must be reported immediately to the appropriate law enforcement agency and to TriCo Office as soon as practical.

If an accident occurs on TriCo property:

- Depending on the extent of the injuries, you may need to call emergency personnel (911).
- Assist injured persons, but **do not** attempt to move them unless a threat to life exists.
- Call or have someone call a Manager and provide information about the accident. **Do not** leave the scene or move the vehicle until advised to do so by a Manager.
- Obtain the names of witnesses, and other pertinent facts. Forward the information to TriCo Director as soon as possible. An accident report form will be placed in the glove box of all TriCo-owned vehicles.
- Notify a Manager if you strike an unattended vehicle or object while on the property. **Do not** leave the scene until given permission by the Manager.
- Complete a written report of the accident for your Manager immediately.

If an accident occurs off TriCo property:

- Contact the appropriate law enforcement agency and or emergency personnel.
- Obtain the name, address and insurance company of any and all drivers and witnesses involved in the incident.
- Request a copy of the incident report or obtain the case number associated with the accident if a copy is not immediately available.
- Report the incident to your Supervisor immediately.

Accident Review and Driving Record: TriCo Office will review each accident that involves a TriCo-owned vehicle and each incident where a vehicle operator has been cited for a violation of Motor Vehicle Law, or TriCo Vehicle Safety Policy, while operating a vehicle on TriCo business. TriCo will maintain a driving record on each employee driver.

4.0 PERSONAL PROTECTION EQUIPMENT (PPE)

4.1 Inventory of PPE

It shall be the responsibility of the Chief Operator to ensure an adequate inventory of PPE at all times. Employee input as to style and type of equipment shall be taken into consideration so

long as proper safety protection is provided. PPE is defined in the Code of Federal Regulations (CFR), Title 29, Chapter XVII, Part 1910, 36 FR 10466, May 29, 1971, as amended.

4.2 PPE Requirements

PPE is not to be used as a substitution for the elimination of unsafe acts or conditions, but rather as a supplement safety measure. When job requirements dictate the wearing of protective equipment, this requirement then becomes both a part of the accident prevention effort, and a condition of employment.

Required PPE is provided for the employees' use and safety. Each employee is expected to maintain and use this equipment. All PPE should be left at work, including boots, to reduce the risk of taking home contaminants. In instances where employees furnish their own personal equipment, the Supervisor is responsible to ensure adequacy and to ensure the equipment is properly maintained. Supervisors also have the responsibility for the proper use of PPE.

The following listing of when to use personal protection is not intended to be all-inclusive:

A. Eye and Face Protection

1. Protective eyewear, safety glasses, goggles, and face shields are important to preventing dust, debris, or liquids from causing injury to the eyes and face. Safety glasses must be used anytime there is risk of dust or debris from being thrown into the user's eyes. Face shields are to be worn when cutting, grinding, or performing any other task where larger debris can injure an employee's face. When using a face shield, safety glasses or goggles must also be worn.
2. Safety glasses, goggles, and/or face shield shall be used in the following specific instances:
 - a. When operating metal or woodworking machines.
 - b. When handling electrolyte batteries.
 - c. When working overhead.
 - d. When using striking tools such as chisels or punches.
 - e. When using power activated tools.
 - f. During jackhammer operations.
 - g. When using air to clean an area (reduced to 30 PSI or less).
 - h. When using hazardous liquids.
 - i. And any other occasion as necessary.
3. Other specialized eye/face protection is required when performing welding or cutting operations. This equipment is necessary to prevent exposure to radiant light energy which can damage the eyes. The tint level of these protective devices will be dependent on the work activity taking place.
4. Eye wash must be available in areas where corrosive materials are used. Eye wash stations must be capable of providing 15 minutes of continuous flow of water. Several showers are located onsite and may be used to assist with removing corrosive materials.

B. Foot Protection

Many of the operations conducted by this organization expose the employee to foot injuries. Therefore, all employees engaged in field and shop work will wear work boots with a I or C rating of 75. All work boots shall be left at work.

C. Hand Protection

1. Gloves are required on many of the jobs performed by the various Departments. Those employees that need gloves will have a suitable pair available for use.
 - a. Cut resistant or heavy-duty gloves will be worn where potential for laceration or abrasion exists
 - b. Chemical resistant gloves, such as neoprene or nitrile, will be used to prevent contact with chemical hazards including solvents and caustic chemicals.
 - c. Latex gloves will be used to protect against biological material or as a general

- hygiene practice when necessary.
 - d. Welding gloves will be used when performing a heat producing process in which temperature extremes can cause burns.
 - e. Electrically insulated gloves used by employees engaged in working with live electrical components where the NFPA 70E standard calls for such protection. Electrically Insulated gloves must be recertified to ensure the glove has not been compromised in a way to allow current to pass through to the wearer.
2. Any gloves not available to the employee may be obtained by speaking with a supervisor or the safety coordinator.

D. Head Protection

Many activities performed by TriCo employees involve working below ground level with material overhead or working near construction machinery. Hard hats are provided to prevent head injuries: from being struck by falling objects, electrical shock, and bumps on the head from working in confined spaces. The proper protection is provided when the head harness is adjusted so that there is approximately 1-1/2" clearance, (plus or minus 1/8"), between the skull and the inside of the hat when it is worn. When the harness becomes worn to the extent that it no longer can be adjusted to maintain that clearance, hard hats should be turned in for repair or replacement. A hard hat is a personal item and shall be for the exclusive use of the person to whom it is issued. Plastic hard hats should be kept clean, and only cleaned as per the manufacturer's specifications.

Use common sense: Always wear the hard hat where there is any overhead danger, large machinery in operation, whenever you are four feet below the surface of the ground or deeper. The hard hat is required when doing tank painting or repair, when mowing in a gang, whenever there is a bumping hazard, in a confined space, operating VAC and/or JET trucks, while working under power lines, or instructed by your supervisor.

E. Ear Protection

1. Protection against the effects of occupational noise exposure shall be used when the sound exceeds the criteria in Table 1.

Table 1 - Permissible Noise Exposure

<u>Duration per day, hours</u>	<u>Sound level, DBA Slow Response</u>
8	90
6	92
4	95
3	97
2	100
1-1/2	102
1	105
1/2	110
1/4 or less	115

Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure. In all cases where the sound levels exceed the values shown in Table 1, a continuing, effective hearing conservative program shall be initiated.

2. Examples of specific cases where hearing protection is required are:
- a) During tasks involving the operation of jackhammers
 - b) When working around high capacity pumps
 - c) Working on or near a running generator
3. Work areas will be monitored to ensure compliance with this section and signs will be posted in areas where hearing protection is required.

F. Respiratory Protection

1. Employees who are exposed to hazardous atmospheres which cannot be controlled

- through ventilation or other methods will be required to utilize appropriate respiratory protection.
2. The type, style, and cartridges will be determined by a hazard assessment of the atmosphere and the appropriate assigned protection factor (APF) will be identified.
 3. Employees required to use respirators will be required to undergo the OSHA required questionnaire (to be reviewed and approved by a PLHCP) to ensure they are healthy enough to wear the respirator.
 4. The use of a tight-fitting respirator also requires the user to undergo a fit test for the specific brand, style, and size. The test ensures an adequate fit so that the employee is not exposed to respiratory hazards. The sealing surfaces on the employee's face must be clean shaven to ensure proper fit.
- G. Full Body Harness, Life-Lines and Lanyards
1. All life safety equipment, including Fully Body Harness, lifelines, lanyards, and anchorage devices will be inspected on a daily basis before use. All equipment and use will comply with ANSI 359.
 2. Anchorage connections will be rated for the loads placed on them. Non-certified anchorage will be capable of holding 5,000 lbs for fall arrest and 3,000 lbs for fall restraint. Certified anchorages will be rated based on the certification available for the anchorage.
 3. All fall equipment will be inspected on an annual basis by a qualified person and removed from service based on age, condition, or functionality.
 4. Fall protection equipment will not be used to hoist or lower equipment and will only be used according to the manufacturer's intended purpose.
- H. Ring Buoys
1. Ring buoys are located on each tank and working platform where the risk of drowning exists. Buoys will be inspected on an annual basis and replaced as needed.
 2. Particular attention must be made to the housing and ropes of the ring buoys to ensure the buoys are protected from the elements and the ropes have not been damaged by the sun's UV rays.

5.0 WORK RELATED INJURIES

Each employee has a personal responsibility to prevent accidents/injuries and to observe and practice safety rules and instructions relating to their daily work environment. Each employee should caution fellow workers when they perform unsafe work habits and remind them on the proper safety procedures. Accident/injury prevention is everyone's responsibility.

5.1 Emergency Medical Treatment

If emergency medical treatment is necessary, contact 911 for medical assistance and transportation. Medical personnel are responsible for transportation decisions.

5.2 Non-Emergency Treatment

First aid kits are available at TriCo Maintenance Building, TriCo vehicles, and the Government Center. For non-emergency, non-life-threatening treatment, injured employees should be taken to

Community MedCheck
11911 N Meridian St, Suite 150
Carmel, IN 46032
(317) 621-6702

5.3 Follow-up Medical Treatment Work Related Injuries

Following the accident, the injured employee shall be responsible for notifying the

Supervisor on an ongoing basis of his/her condition.

5.4 TriCo Reporting Procedure

In the wastewater industry, where exposures to various microorganisms in the wastewater stream is a routine occurrence, even the most minor scratch, cut, and abrasion should immediately be reported to a Supervisor. All accidents, involving injury or not and including near misses must also be reported to supervision.

All accidents involving death will be reported to TriCo Director immediately and to IOSHA (317-232-2693) within 8 hours. In cases where an employee is hospitalized, suffers any amputation, or loss of an eye, the injury must be reported to IOSHA within 24 hours.

The results of each investigation will be documented in writing and submitted to TriCo Director by the end of the shift.

All accidents/injuries require follow-up investigations to learn of the problems in the work place that caused the injury and to avoid recurrences. This should occur within 24-48 hours.

Records must be maintained in each establishment for 5 years following the end of the year to which they relate, and maintained by TriCo for 30 years past the final employment date.

5.5 Written Documentation

The Managers and the Chief Operator will investigate the circumstances of the accident/injury. A written report will be prepared from the accident information with complete and accurate documentation.

TriCo Personnel & Benefits Committee may review any accident or investigation report.

The accident report should include the following information:

1. The investigation report should include the date, time and location of the accident; describe the accident, any injury, and include as much information as can be obtained.
2. Information from the injured party, photographs, diagrams, eyewitness names, addresses, and their statements, and notes may add key details in a written report. If a police report is made, this should be included in the documentation for the accident.
3. Tell the circumstances of why this accident occurred. State the cause of the accident. Sometimes the cause of the accident will not be revealed until all the data are compiled and analyzed.
4. After the cause is determined, document a solution for avoiding future accidents. The supervisor of the area and the Safety Coordinator should make this decision and make efforts to implement the solution. Consultation with TriCo administrators and Personnel & Benefits Committee may be needed.

5.6 Follow-up Report

A follow-up report should be issued by HR within 30 days of the accident to determine if the solution to prevent further accidents was implemented and if a recurrence of the accident was preventable from the proposed solution.

5.7 Prevention of Accidents

All accidents are summarized in a monthly report developed by HR from written reports and reviewed by the Board and Staff.

5.8 Documentation and Record Keeping

In order to comply with city, state and federal regulations, current and accurate record keeping of all TriCo accidents and incidents relating to safety matters must be documented and maintained by Human Resources. In addition, HR keeps and maintains all records of employee training and hazard identification. All records must be maintained for their specified retention time.

5.9 OSHA Requirements

OSHA required recordkeeping steps, which are performed by TriCo Director and Chief Operator:

1. Each recordable case must be entered on OSHA Form 301 (or equivalent) within seven (7) calendar days after learning of its occurrence.
2. The Log of Work-Related Injuries and Illnesses (Form 300) is used to classify work-related injuries and note the extent and severity of each case. Logs must be maintained for five (5) years following the year to which they pertain. A log must be kept for each establishment or site. Logs must be available for inspection and copying by representatives of the Department of Labor, or the Department of Health and Human Services, or States accorded jurisdiction under the Act. Access to the log is also provided to employees, former employees and their designated representatives.
3. The Summary (Form 300A) is a separate form that shows the totals for the year in each category. A copy of the Summary must be posted at each establishment in the place or places where notices to employees are customarily posted. This copy must be posted no later than February 1st and remain in place until April 30th of the following year. Even though there were no injuries or illnesses during the year, zeros must be entered on the totals line, and the form posted.

6.0 SAFETY INSPECTIONS

6.1 General

Safety inspections are designed to uncover unsafe acts or conditions, determine their causes, and recommend action to eliminate the unsafe acts or conditions.

6.2 Types of Inspections

- A. Formal Safety Inspections of TriCo's buildings, Plant and grounds shall be conducted on a formal basis (annually) with a follow-up correction inspection to be conducted by the Plant Superintendent and Chief Operator.
- B. Managers shall conduct informal inspections on a quarterly basis, to ensure that hazards are kept at a minimum, and that safe work practices are enforced. Emphasis shall be placed upon the condition of facilities, equipment and machines, as well as the following:
 1. Good housekeeping.
 2. Use of prescribed protective equipment (PPE).
 3. Adequacy of job procedures.
 4. Qualification of drivers and condition of vehicles.
 5. Proper storage of flammable liquids.
 6. Proper guarding of open pits, tanks, etc.
 7. Proper maintenance of electrical equipment, power tools, and hand tools.
 8. Administrative compliance with this manual and other pertinent directive.
- C. Employees and supervisors should conduct regular visual inspections of their work areas on a daily basis, taking corrective action when necessary. Issues which may require a more involved solution should be brought to the attention of the immediate supervisor for the area. Until a permanent solution is devised, the supervisor and Chief Operator shall determine if an

alternate procedure can be developed to minimize the hazard(s) to employees, contractors, and visitors.

6.3 Documentation

All inspections, formal and informal, will be documented by a written report. Copies of all inspections will be distributed to TriCo Director and the Chief Operator.

Each Supervisor will receive a copy of an inspection, formal or informal, made in his/her Department.

7.0 CONFINED SPACE

7.1 Purpose

The purpose of this plan is to establish a program and procedures for the safe entry into confined spaces at TriCo Regional Sewer TriCo. TriCo has evaluated all of its confined spaces and has deemed them all to be Permit Required.

This program supports compliance with Occupational Safety and Health Administration Permit Required Confined Space Entry Program as found in 29 CFR 1910.146. This plan applies to all TriCo employees. Contractors working at TriCo facilities will be covered by the contractor procedures of this program and will be expected to follow all requirements.

7.2 Definitions

Confined Space: An area which:

- Has a size and shape large enough for employees to enter
- Has limited or restricted means of entrance and exit
- Is not designed for people to work in continuously

Permit Required Confined Space: According to the OSHA Standard, this is a space, which meets all of the above conditions and has one or more of the following hazards:

- *Atmospheric hazards*, which can be asphyxiating, toxic, flammable or explosive
- *Engulfment hazard*, which occur when someone is trapped or enveloped by a dry, bulk material such as sand, soil, or gravel
- *Configuration hazards*, in which the size or shape of the space can trap an employee or make escape or rescue difficult
- *Energy hazards*, which can happen if there is contact with electrical equipment, steam, or other sources of heat inside the space. (Equipment such as augers or mixers must be locked out)
- *Other serious hazards*, such as falls, burns, or high noise levels

Entry into a Confined Space: OSHA defines entry as any part of an employee's body going through the opening into the space. Even just a hand going into the space is considered entry.

IDHL: An OSHA hazard classification – "Immediately Dangerous To Life & Health". Toxic atmospheres that are immediately fatal are considered IDLH.

Intrinsically Safe: A designation on the manufacturer's label placed on equipment, indicating that it is designed to be safely used for a specific hazard or within a specific kind of confined space.

7.3 Responsibilities

The Safety Coordinator is responsible for keeping an up to date roster of those employees who have been trained on Confined Space Entry. The roster must be made available to all team members.

The Program Administrator is the Safety Coordinator

This person is responsible for issuing and administering this program and making sure that the program satisfies the requirements of all applicable Federal, State or Local confined space entry requirements.

The Entry Supervisor

This person is responsible for verifying the purpose for each entry into a confined space and issuing permits to protect entrants assigned to perform work. The permit will be issued according to the permit procedures listed, including the following:

- Ensuring that all assigned entrants have current training in the procedures and precautions for work to be performed
- Informing contractors of TriCo's confined space entry program requirements and of the potential hazards of each space to be entered
- Verifying that all entry equipment is maintained and/or calibrated according to the manufacturer's specifications and TriCo's preventative maintenance procedures
- Knowing how to calibrate and operate air monitoring equipment
- Understanding what airborne hazards exist or have the potential to exist at the site
- Identifying equipment and methods for testing at the site
- Determining when equipment is malfunctioning
- Provide appropriate equipment maintenance

The Authorized Entrants

These people are responsible for:

- Knowing the hazards that may be faced during entry, including information on how hazardous exposure may occur, and the signs, symptoms and severity of exposure
- Properly using any equipment needed to safely enter the space
- Maintaining communication with the attendant outside of the space, following warnings given by the attendant and exiting the space immediately when told to do so

The Authorized Attendants

This person is assigned to monitor the entrants while they are working in the space and is responsible for:

- Knowing the hazards that may be faced during entry
- Knowing symptoms and health effects if exposure occurs
- Ordering the entrants to evacuate the space if the attendant detects a new hazard or unusual behavior in the entrants
- Maintaining an accurate count of the number of authorized entrants in the space
- Remaining outside the space during entry operations until relieved by another attendant
- Maintaining communications with the authorized entrants to monitor their work activities and to alert them if evacuation is necessary
- Calling for rescue and other emergency service as soon as the attendant recognizes that the entrants may need assistance to escape from the space
- Keeping unauthorized persons from entering the space or interfering with the entry process
- Initiating or performing non-entry rescues as outlined in the rescue plan
- Performing no other activities which may interfere with the primary job of monitoring the safety and condition of those people inside the confined

space

7.4 **Program Activities**

Identifying Confined Spaces

- All permit required confined spaces and the hazards involved are identified in the confined space entry evaluation form.
- Since placing signs on all confined spaces would not be practical, confined spaces shall be identified through definition and training.
- Employees will be notified where the confined spaces are located during confined space entry training.

Hazard Testing Before and During Entry into Confined Spaces

- All confined spaces will be tested before and during entry, using properly calibrated and approved equipment.
- The air in the confined space will be tested for oxygen levels, flammable gases and vapors, and toxic substances.
- Continuous air monitoring will be maintained for oxygen, flammable gases and vapors, and the following toxic substances HYDROGEN SULFIDE and CARBON MONOXIDE
- If the hazard level cannot be determined by testing, an Immediately Dangerous to Life and Health (IDLH) situation shall be assumed, and appropriate protective measures shall be used during the entry.

Eliminating Hazards

- Mechanical ventilation will be provided when necessary.
- Protective equipment is to be used only when normal cleaning and ventilation procedures fail to reduce the hazard to safe levels.

Confined Space Entry Team

- The Entry Supervisor will determine the size of the Entry Team, based on the size of the job, hazards potential or present, and or the “routineness” of the entry.
- During a confined space entry, there will always be a minimum of one attendant and one entrant.
- One attendant must be trained in First Aid and CPR.
- One attendant must be able to physically remove an injured entrant from the confined space in case of emergency, without entry to the space.

Non-Entry Rescue

- A hoist or other mechanical device for personnel removal will be used for all spaces in excess of four (4) feet in depth.
- First aid and any necessary rescue equipment shall be readily available at the site.

Lockout/Tagout

- Connecting pipelines will be blanked off or separated prior to entry.
- All lockout/tag out procedures shall be followed in securing electrical systems, machinery, pressure systems and rotating equipment.

Other

- If welding or cutting is to be performed in a confined space, local exhaust ventilation will be provided. A hot work permit will be completed and attached to the confined space entry permit.
- The SDS for hazardous materials being used in a confined space will be

incorporated in the confined space entry permit.

- Explosion-proof lighting shall be used in confined spaces unless atmospheric tests have proven that the space is non-explosive.

Training

- Training will be provided for all employees involved with confined space entries.
- Training will be updated as necessary to ensure safe entries.
- Training records will be maintained on forms found at the Maintenance Building.

7.5 Procedures for Entry

Evaluate the Job

- Identify the work to be performed
- Identify who will perform the work
- Determine when the work will be performed
- Determine the type of hazards associated with the space
- Determine the type of equipment needed to control hazards
- Prepare for entry by completing the Confined Space Entry

Permit Brief the Entry Team

- Review the entry requirements
- Verify the rescue methods to be used and procedures to be followed
- Confirm that rescue personnel are available
- Review the communication procedures to be used
- Notify office of the specific amount of time and location for the entry.

Isolate the Space

- Inspect and set up safety equipment
- Initiate the appropriate lockout/tagout
- Clean and/or purge the space
- Ventilate the space when required (e.g., low oxygen)
- Initial atmospheric test should be taken every two (2) feet until the bottom of the space is reached.
- Verify atmospheric conditions according to the permit

Perform the Work

- Continue to monitor both inside and outside the space
- Record air readings at appropriate intervals
- Attendant must stay in contact with the entrant at all times

Conclude the Entry and Debrief the Team

- Exit the space and account for all entrants
- Cancel the permit
- Notify office of canceled permit
- Provide appropriate maintenance to equipment used
- Evaluate the entry for problems or any opportunities for improvement

7.6 Rescue

Non-Entry Rescue

The only method TriCo permits employees to perform confined space rescue, is in instances where rescue does not require entering into the confined space.

Procedures:

1. Never enter a confined space to perform a rescue. The attendant will prevent untrained and unauthorized personnel from entering the space.
2. Sound local alarm to alert employees of emergency (e.g., shout for help, contact fire and rescue, etc.)
3. Assess the emergency. Determine the type of injury to the entrant.
4. Verify that retrieving the employee will not result in inflicting additional injury to the person being rescued.
5. Retrieve injured employee using the safety retrieval system.
6. Administer First Aid/CPR as necessary. Contact outside emergency responders as necessary.
7. Terminate the confined space entry.
8. Complete company accident investigation reports and workers compensation reports for injured employees.

Entry Rescue by Non-Employees

When entry rescue is required, a local fire-rescue or other third-party must be contacted prior to entry activities to assure rescue services are available. If rescue services become unavailable at any time during the entry activity, the provider must contact TriCo to notify of the lapse in rescue coverage and all confined space operations must end until service is available.

Procedures:

1. Never enter a confined space to perform a rescue. The attendant will prevent untrained and unauthorized personnel from entering the space.
2. Sound local alarm to alert employees of emergency (e.g., shout for help, contact fire and rescue, etc.)
3. Assess the emergency. Determine the type of injury to the entrant.
4. Contact Confined Space Rescue in order of appearance on the Confined Space Rescue List, which will be provided by the Safety Coordinator.
5. Delegate an employee (if available) to guide the emergency responders to the site.
6. Assist emergency responders as needed to facilitate the rescue.

7.7 Special Situations

TriCo Responsibilities

When TriCo arranges to have employees of another employer (contractor) perform work that involves confined space entry, TriCo shall:

- Inform the contractors that the workplace contains permit required confined spaces and that permit space entry is allowed only through compliance with a permit space program. The Contractor may use TriCo's permit space program or may provide their own if TriCo has reviewed and approved their program.
- Apprise the contractor of the elements, including the hazards identified and TriCo's experience with the space that makes the space in question a permit required space.
- Apprise the contractor of any precautions or procedures that TriCo has implemented for the protection of employees in or near permit spaces where contractor personnel will be working.
- Coordinate entry operations with the contractor, when both TriCo's personnel and contractor personnel will be working in or near permit spaces.
- Debrief the contractor at the conclusion of the entry operations regarding the permit space program followed and regarding any hazards confronted or created in permit spaces during entry operations.

Contractors Responsibilities

In addition to complying with permit space requirements that apply to all employers, each contractor who is retained to perform permit space entry operations shall:

- Obtain any available information regarding permit space hazards and entry operations from TriCo.
- Coordinate entry operations with TriCo, when both TriCo's personnel and contractor's personnel will be working in or near permit spaces.
- Inform TriCo of the permit space program that the contractor will follow and of any hazards confronted or created in permit space, either through a debriefing or during the entry operation.

8.0 EXCAVATION PROTECTION (TRENCHING)

8.1 General

The procedures in the following sections are designed to reduce the risk and severity of accidents by providing employees and supervisors with the necessary information to prevent cave-ins through proper shielding, shoring, and sloping. These minimum guidelines must be followed by all TriCo employees, contractors, and their subcontractors.

- A. The general criteria to be reviewed for any work involving trenching or excavation activities:
1. Job Site
Prior to starting job, was an underground services contacted and locates identified?
Were overhead transmission lines noted and precautions taken to avoid contact by equipment onsite?
Is spoil bank placed at least 2 feet from edge of excavation?
 2. Excavation or Trench
If over 5-feet deep, is it sloped to the angle of repose, or shored, or is a trench box used?
If under 5-feet deep, but soil is unstable, is it sloped, supported or shored?
Is shoring system inspected regularly by a competent person?
Has the excavation been evaluated for potential hazardous atmospheres?
 3. Exits
If trench is 4 feet or more in depth, is ladder provided?
Are ladders in good condition?
Do they extend from the floor of the trench to 3 feet above the top of the excavation?
Are ladders secured at the top?
 4. Completion of Job
Is trench backfilled as the shoring (if used) is dismantled?
Is shoring removed from the bottom up, the jacks and braces removed slowly?
In unstable soil, are ropes used to pull out jacks or braces from above?
Has backfill been sufficiently compacted to prevent sinking or displacement?

8.2 Factors That Increase/Decrease the Probability of a Cave-In

The factors that increase or decrease the probability of a cave-in are related to the effects of soil strength and downward force. Any soil has a certain amount of cohesive strength holding particles of soil together. But where a trench or excavation has been dug, the force of gravity acts against the natural strength of the soil. When the downward pressure caused by gravity overcomes the soil strength, the trench wall caves in.

- A. Soil strength can be affected by:
- Type of soil
 - Moisture

- Freezing
- Recent excavation

In determining the soil strength, the first factor to consider is the type of soil. Loose grained, sandy soils have little cohesion and tend to cave into the excavation when unsupported. A second factor affecting soil strength is moisture. Water can drastically reduce any soil's ability to hold together, causing it to slide or cave in more easily. A trench that is safe in the morning may suddenly become unsafe in the afternoon, after a rain or a spring thaw.

While thawing weakens the soil, freezing can strengthen it. But water expands as it freezes, and this movement can affect shoring, the earth behind the trench wall, or the entire trench. Although the soil near the surface may be frozen solid, it may be mud below the frost line.

Another factor that will reduce a soil's ability to support trench walls is a recent excavation. Soil that has never been distributed will usually have greater strength than soil that has been excavated for pipe laying, road building, or some other purpose. Generally, the more recent the excavation, the weaker the soil.

B. The downward force is affected by:

- Trench depth
- Soil weight (which is again related to moisture)
- Weight of the spoil bank
- Weight of adjacent equipment
- Vibration

Under any conditions, cave-in protection is required for trenches or excavations 5-feet deep or more. Where soil is unstable, protection may be advisable even in more shallow trenches. Wet soils can be more than twice as heavy as dry soils. Since wet soils may also have less cohesive strength, moisture from any source is a major factor affecting the likelihood of a cave-in. The weight and location of the spoil bank (the material removed from the trench) is another factor adding to the downward forces. The spoil bank, if properly placed, can easily add 50% or more to the weight of the soil subject to a cave-in. Spoil should be placed 2 feet or more away from the edge of any excavation, and it must be stored in a way that will prevent it from falling or sliding back into the excavation. Lastly, operating compacting equipment in the trench, or nearby blasting, or the presence of people and equipment near the edge of the trench can cause vibration that will loosen the soil and make a cave-in more likely.

8.3 Procedure

Prior to opening an excavation, determine whether underground installations (sewer, telephone, water, fuel, electric lines, etc.) will be encountered. Locates must be identified before the start of actual excavation.

If the trench is 5-feet deep or more, a protective system is required, no matter what the soil condition. There are three basic ways to prevent cave in or protect yourself from cave-ins:

A. Sloping - Sloping requirements vary depending on the type of soil. For deep trenches, sloping will take up more room than you may have available. But it is an easy and effective protective measure for many excavations. Sloping involves excavating the walls of the trench at an angle so the downward forces on the soil are never allowed to exceed the soil's cohesive strength.

For any section of an excavation, there will be a certain angle, called the angle of repose, where the surrounding earth won't slide or cave back into the trench. The angle of repose varies with the type of soil, the amount of moisture it contains, with surrounding earth that won't slide or cave back into the trench, and with surrounding conditions, especially vibration from machinery.

In all excavations, a ladder must be provided. It should be located so workers will always be

able to reach one within 25 feet, and it must extend at least 3 feet above the top edge of the trench. This allows workers to exit the trench quickly in case of emergency.

Solid Rock	Compact Gravel	Average Soil	Compact Sand	Loose Sand
(90*)	½:1 (63*)	1:1 (45*)	1-1/2:1 (33*)	2:1 (26*)

- B. **Shielding** - Shielding involves the use of a steel box, open at the top, bottom, and ends. The box is placed into the ditch, so workers can work inside it. As the work progresses, the protective box is moved or towed to provide a continuing shield from any caving in of the walls. This open-ended box is called a trench shield, a portable trench box, a sandbox, or a drag shield.

Shielding does not prevent a cave-in. The shield cannot fit tightly enough in the trench to hold up the trench walls. However, if a cave-in does occur, the worker within the shield is protected. Shielding is constructed of steel plates and bracing, welded or bolted together. It is important that the shield extend above ground level, or that the trench walls above the top of the shield be properly sloped. A major disadvantage of the shield is that workers have a tendency to leave its protection in order to check completed work, or to help adjust pipe placement, or just to get out of the way of the job in progress. The shield only protects those workers actually within it.

- C. **Shoring** - The third method protecting workers in trenches is shoring. If properly installed, shoring will actually prevent the caving in of excavation and trench walls. Basically, shoring is a framework support system of wood, metal, or a combination of both.

Excavations in which employees will not be entering are not required to have a protective system installed. It is up to the competent person to determine the best method to protect the excavation from collapse.

Employees in an excavation will wear hard hats

8.4 **Emergency Procedure**

Don't work in a trench if you are alone. If a cave-in does occur, you could be trapped. Having someone nearby to dig you out or go for help can mean the difference between life and death. If, in spite of all your precautions, you are caught in a cave-in, there are a few things you can do to increase your chances of survival.

- If it looks like you are about to be buried, yell. This will increase the chances of someone will notice the cave-in and start to work getting you out immediately. It also makes it likely that someone will be watching as you go under, which could be critically important when rescuers try to find you in the dirt.
- As you go under, try to cover your face with your arms. The space between your arms and your face can help you breathe while you wait for rescuers to dig you out.
- If you are buried under very much dirt, you won't be able to dig yourself out so don't struggle. Your best course of action is to wait calmly for rescue.

9.0 **RULES ON MACHINE USE**

9.1 **General Machine Guarding**

WHERE MECHANICAL HAZARDS OCCUR

Dangerous moving parts in these three basic areas need safeguarding:

- **The point of operation:** That point where work is performed on the material, such as cutting, shaping, boring, or forming of stock.
- **Power transmission apparatus:** All components of the mechanical system which transmit

energy to the part of the machine performing the work. These components include flywheels, pulleys, belts, connecting rods, couplings, cams, spindles, chains, cranks, and gears.

- **Other moving parts:** All parts of the machine which moves while the machine is working. These can include reciprocating, rotating, and transverse moving parts, as well as feed mechanisms and auxiliary parts of the machine.

GENERAL MACHINE GUARDING REQUIREMENTS

- One or more methods of machine guarding shall be provided to protect employees in the machine area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks.
- Guards shall be affixed to the machine where possible and secured elsewhere if not possible.
- A guard shall not offer an accident hazard in itself.
- The point of operation of machines whose operation exposes an employee to injury shall be guarded.
- Revolving drums, barrels, and containers shall be guarded by an enclosure which is interlocked with the drive mechanism.
- When the periphery of the blades of a fan is less than 7 feet above the floor or working level, the blades shall be guarded with a guard having openings no larger than ½ inch.

REQUIREMENTS FOR SAFEGUARDS

What must a safeguard do to protect workers against mechanical hazards? Safeguards must meet these minimum general requirements:

- **Prevent contact:** The safeguard must prevent hands, arms, or any part of a worker's body or clothing from making contact with dangerous moving parts.
- **Secure:** Personnel should not be able to easily remove or tamper with the safeguard, because a safeguard that can easily be made ineffective is no safeguard at all. Guards and safety devices should be made of durable material and must be firmly secured to the machine.
- **Protect from falling objects:** The safeguard should ensure that no objects can fall into moving parts. A small tool which is dropped into a cycling machine could easily become a projectile that could strike and injure someone.
- **Create no new hazards:** A safeguard defeats its own purpose if it creates a hazard of its own such as a shear point, a jagged edge, or an unfinished surface which can cause a laceration.
- **Create no interference:** Any safeguard which impedes a worker from performing the job quickly and comfortably might soon be overridden or disregarded.
- **Allow safe lubrication:** If possible, one should be able to lubricate the machine without removing the safeguards.

ANCHORING FIXED MACHINERY

Machines designed for a fixed location shall be securely anchored to prevent walking or moving.

METHODS OF MACHINE SAFEGUARDING

There are many ways to safeguard machinery. The type of operation, the size or shape or stock, the method of handling, the physical layout of the work area, the type of material, and production requirements or limitations will help to determine the appropriate safeguarding method for the individual machine.

As a general rule, power transmission apparatus is best protected by fixed guards that enclose the danger area. For hazards at the point of operation, where moving parts actually perform work on stock, several kinds of safeguarding are possible.

Safeguards are under five general classifications:

- **Guards:** Fixed, Interlocked, Adjustable, and Self-adjusting.
- **Devices:** Presence Sensing (Photo electrical-optical, Radio frequency- capacitance, and Electromechanical), Pullback, Restraint, Safety Controls (Safety trip control-Pressure-sensitive body bar-Safety tripod-Safety tripwire cable, Two-hand control, and Two-hand trip), Gates,

and Interlocked.

- **Location/Distance**
- **Potential Feeding and Ejection Methods:** Automatic feed, Semi-automatic feed, Automatic ejection, Semi-automatic ejection, and Robot
- **Miscellaneous Aids:** Awareness barriers, miscellaneous protection shields, and hand-feeding tools and holding fixtures.

TRAINING

Even the most elaborate safeguarding system cannot offer effective protection unless the worker knows how to use it and why. Thorough operator training should involve instruction or hands-on training in the following:

- A description and identification of the hazards associated with particular machines.
- The safeguards themselves, how they provide protection, and the hazards for which they are intended.
- How to use the safeguards and why.
- How and under what circumstances safeguards can be removed, and by whom (in most cases, repair or maintenance personnel only).
- What to do (e.g., contact the supervisor) if a safeguard is damaged, missing, or unable to provide adequate protection

9.2 Heavy Mobile Equipment/Machine Use

- A. Equipment operators shall be qualified for the type and style of equipment they will be using. Training and evaluation of employee's ability to operate equipment will take place prior to use. Employees may forgo on-the-job training due to their level of experience and qualifications.
- B. The machine shall never be oiled, greased, or fueled while the motor is running. The gasoline tank shall be filled from approved safety type cans or pumps.
- C. Operators shall keep other employees and bystanders a safe distance from the machine while the machine is in operation.
- D. An employee shall not attempt to clear the buckets or discharge chute while the machine is in operation.
- E. When an end-loader is being loaded by hand, the machine operator shall keep his hands and feet free of all controls except the brakes.
- F. Machines shall not be used on slopes or inclines greater than those specified in the owner's manual.
- G. Employees other than the operator shall not stand with hands or feet resting on a machine while it is running and shall keep clear of the discharge side.
- H. All digs should be scheduled ahead with a two-day minimum to allow locate services time to contact the proper utilities to have the affected area marked.
- I. Machines parked or operating on streets or highways shall be protected by proper warning devices.
- J. When it is necessary to leave excavating equipment unattended, the blade, bucket, or scoop shall be lowered to the ground, and the ignition system locked.
- K. Ground openings such as trenches, shafts, and obstructions, shall be protected by suitable barricades or covers.
- L. All material removed from excavations shall be piled at least 2 feet from the edge of the excavation, preferably on the side next to traffic.

10.0 WORKING IN A PUBLIC RIGHT OF WAY

TriCo employees are often required to work in or along a right of way normally used for vehicle or pedestrian traffic. It is desirable that, whenever possible, some continued flow of traffic is maintained with the least possible interference to normal traffic patterns. There are two safety considerations involved:

1. Protecting employees from being struck by vehicular traffic.
2. Helping the public to safely avoid hazardous obstructions, excavations, etc. that interrupt the flow of both vehicle and pedestrian traffic.

The federal highway administration has approved and issued the "Manual on Uniform Traffic Control Devices for Streets and Highways" as the national standard for all highways open to public travel. The state manual is adopted as the official manual for a uniform system of traffic control devices for the TriCo Regional Sewer TriCo.

When road surfaces are being repaired, manholes opened, or excavations dug, it is necessary that adequate warning of the hazard be posted, that a minimum amount of the right-of-way be blocked off consistent with safety requirements, and that traffic be efficiently re-routed.

If repair work obstructs a traffic lane in a street and thus compresses several lanes of traffic into fewer lanes, warning by signs and barricades must be given to motorists well in advance of the obstruction. If manhole openings and excavations constitute a hazard to pedestrians, then adequate barricades and re-routing of walkways should be provided.

Maintenance activities may include such minor interferences as utility locates, inspections along easements, standing or slow-moving vehicles and equipment, or occasional movements into the normal right of way. The feature of simultaneous flashing of all turn signal lights should be used, augmented by oscillating rotating lights, or flashing arrow signs mounted on the vehicle. When maintenance or construction activities exceed 15 minutes duration, adequate signs and barricades must be set up.

The following safety procedures are recommended:

1. No street should be closed without proper approval of TriCo Director (or his designee), and notice given to the Police and Fire Departments.
2. The traffic control scenario should adhere closely with the traffic control scenario which most closely matches the scenarios outlined in the MUTCD Section 6.
3. All open excavations will be blocked or barricaded from vehicular traffic to prevent vehicles from entering the excavation. This may be performed using equipment, concrete barriers, or stop logs. If an open excavation is left in a posted traffic lane when work is stopped or suspended for any reason, signs and lighted barricades shall not be sufficient. An excavation must be covered with plating adequate to support the loading placed on them during normal traffic flow or the excavation must be barricaded.
4. Protection of persons working on roadway:
 - A. "Men Working" signs should be placed in advance of the work in both directions during maintenance operations. Use traffic signs, cones, and barricades to direct traffic safely around the work site.
 - B. Work should be done on one-half of the roadway at a time. All employees working in the congested or highly traveled area will wear TriCo-approved safety vests.
 - C. A flag person should be used where the amount or speed of traffic warrants.
5. Flag Person should:
 - A. Stand near enough to the workers being protected so that there is no doubt as to his purpose.
 - B. Stay not less than 100 feet from the work crew, unless conditions make this impossible.
 - C. Stand on the shoulder adjacent to the traffic being controlled or in a barricaded lane, never placing themselves in the path of traffic.
 - D. Must always leave themselves an escape or a way out of the path of a vehicle which may have lost control.

11.0 PROPER LIFTING PROCEDURES

Material handling causes many types of injuries such as strains, crushing's, hernias, ruptures, fractures, lacerations, bruises and contusions.

Accidents of this nature can be avoided by planning ahead using mechanical equipment where possible and thinking about the proper way to perform the task.

The single and most important preventive safety measure an employee should keep on his mind is the Four Step Lifting Process. This technique could save you pain and suffering. Therefore, it is essential that you carefully read and implement the lifting process described here:

1. GET READY
 - Size up the load. If it is too heavy or bulky, play it smart – get help or break the load down into smaller loads.
 - Check the load and remove protruding nails, splinters, sharp edges, oil, grease, or moisture.
 - If the surface is rough – wear gloves.
 - Know where the load is going and where you are going to put it down.
 - Be sure the path you take is clear of obstacles.
2. PICK IT UP
 - Get a firm footing and good balance. Place your feet shoulder-width apart.
 - If the load is below waist level, bend your knees to get into position. Keep your back as straight as possible.
 - Grip the load firmly.
 - Lift the object to carrying position, keeping it close to the body. LET THE LEG AND ARM MUSCLES DO THE WORK. DO NOT LIFT WITH YOUR BACK.
3. CARRY IT CAREFULLY
 - Be sure you can see where you are going.
 - When changing direction, BE CAREFUL NOT TO TWIST YOUR BODY. CHANGE THE POSITION OF YOUR FEET TO TURN YOUR BODY.
4. PUT IT DOWN
 - If the receiving surface is near waist high, place the load on the edge of the surface, then push it forward.
 - If you lower the load to the floor, BEND YOUR KNEES, KEEP YOUR BACK AS STRAIGHT AS POSSIBLE, AND KEEP THE LOAD CLOSE TO YOUR BODY.

12.0 WORK AREA SAFETY GUIDE

1. Abrasive Blasting
 - A. Blast cleaning nozzles shall be equipped with an operating valve which must be held open normally (Deadman control).
 - B. The air for abrasive blasting respirators shall be free of harmful quantities of contaminants.
 - C. Proper eye protective equipment to prevent injury shall be provided.
2. Abrasive Grinding
 - A. All abrasive wheel bench and stand grinders shall be provided with safety guards which are strong enough to withstand the effects of a bursting wheel.
 - B. Adjustable work rest of rigid construction shall be used on grinders, with the work rest kept adjusted to a maximum clearance of 1/8 inch between rest and wheel.
 - C. All areas with bench type grinders shall be clean and well lit.
 - D. Proper eye protective equipment to prevent injury shall be provided.
3. Pneumatic Tools
 - A. Pneumatic power tools shall be secured to the hose in a positive manner to prevent accidental disconnect.
 - B. Safety clips or retainers shall be securely installed and maintained on pneumatic impact tanks to prevent them from being accidentally expelled.
 - C. The manufacturer's safe operating pressure for all fittings shall not be exceeded.

- D. Proper eye protective equipment to prevent injury shall be provided.
 - E. Pressure on air tools shall be released before the equipment is left unattended.
 - F. All connections to air tools shall be made secure before turning on air pressure.
 - G. Compressed air at the tool shall not be turned on until the tool is under the control of the operator.
4. Ultra-violet Light
- A. Employees must be protected from exposure to the harmful concentrated UV rays used for disinfection.
 - B. Signage will be placed and maintained in all areas where UV light is in use to warn employees of the exposure potential.
 - C. All efforts will be made to minimize direct exposure to UV lighting sources, even for short periods of time.
 - D. All UV lighting must be turned off prior to performing work or maintenance on equipment unless the following provisions are made.
 - 1) UV-absorbing face shield. This will only cover a portion of the face, so areas left unprotected must be covered.
 - 2) At a minimum, nitrile, tightly woven fabric, or UV-rated gloves must be worn and tucked into long sleeves. Protection of the skin and eyes is top priority to protect against UV exposure.
5. Lifting, Rigging, and Hoisting
- A. Mobile crane operations must be performed by a qualified crane operator. Operators must be qualified on the specific type and size of crane.
 - B. The crane must be inspected prior to use. Annual and monthly inspections are also required to be performed which include more detailed review of the equipment, hoist drum, cable, and all points where the cable is in contact with any other crane surface. An inspection form from the equipment manufacturer will be used.
 - C. Use care and caution when lifting heavy tools and equipment. Inspect loads for size, shape and weight before lifting. Know the maximum load capacity of the lifting device. Never exceed the rated load capacity of the lifting equipment.
 - D. Chains, cables, ropes, hooks, and tow straps, slings, etc. shall be inspected by the employee using the equipment daily, and defective items shall be removed and repaired, or destroyed and replaced. Employees performing rigging operations should be qualified in how to safely rig the loads to be hoisted.
 - E. Cables, slings, and chains shall be free from kinks, twists, or any other damage which would impact its ability to safely hoist a load.
 - F. Lift straight up. Do not drag loads. Never lift or pull with rigging from an angle.
 - G. Stand clear of suspended loads. Never stand or have a portion of the body under a suspended load.
 - H. Never place yourself between a pump cable and the well while the pump is suspended.
6. HydroVac Operations
- A. Ensure all utilities have been located prior to performing any HydroVac activity involving removal of soils. All standard excavation rules also apply if removal soil to open an excavation in which employees will enter. See section 8 for further details.
 - B. Use proper personal protective equipment including rubber steel-toe boots, safety glasses, face shield, hard hat, gloves, hearing protection and rain suit. Protect those in the immediate area by explaining site hazards. Set up a safety perimeter with limited access and consider a splashguard when starting the hole.
 - C. As you excavate, don't stand near a hole as it gets larger and deeper. Cave-ins are possible at this point, so protect yourself and those nearby.
 - D. If you are using pressurized water or air be careful not to use more pressure than necessary so you don't damage existing utilities. A high-pressure water gun at 4,000 to 5,000 psi can easily cut a power cable.

- E. Don't leave large rocks hanging inside the hole because they could fall onto and damage exposed utilities. Remove large rocks as you excavate or lower them into the bottom hole and leave them there at the end of the job.
7. Electrical
- A. Use care and caution when working around all electrical equipment. Observe "DANGER" and "HIGH VOLTAGE" signs. Stay clear of areas marked as hazardous.
 - B. Only qualified and authorized personnel are to work on electrical equipment.
 - C. Follow TriCo's lockout/tagout procedures before working on any electrical equipment.
 - D. Consider all electrical conductors and equipment to be "live" until positively proven to be de-energized.
 - E. Do not bypass electrical safety devices.
 - F. When using electrical tools in or near water or when using an extension cord, use only tools that are connected to ground fault circuit interrupters (GFCI).
 - G. Remove any frayed or broken electrical cords from service.
8. Flammable Liquids
- A. Store flammable liquids only in approved sealed containers in approved flammable storage cabinets. Never store gasoline and paint together.
 - B. Do not smoke, light open flames, or produce sparks in storage areas.
 - C. All flammable liquids must be stored in approved containers. Plastic gasoline cans should be avoided, but if used (such as fuel/oil mixture), they must be less than 1-gallon and have a vent cap in place.
 - D. Outside storage areas shall be protected against tampering or trespassing where necessary, and shall be kept free of weeds, debris and other combustible material not necessary to the storage, or a flammable liquid cabinet that will comply with both OSHA regulations and NFPA 30 requirements.
9. General Conditions - Housekeeping
- A. Keep all work areas including storage rooms, passageways, and exits clean and orderly.
 - B. Keep tools and equipment in their proper place when not in use. Never leave tools or equipment lying around.
 - C. All floor surfaces shall be kept clean, dry and free from protruding nails, splinters, loose boards, holes or projections.
 - D. Where wet processes are used, drainage shall be maintained and false floors, platforms, mats, or other dry standing places should be provided where practical.
 - E. Immediately clean up all spills. Special attention needs to be given to toxic and hazardous spills. Appropriate PPE and special precautions must be followed. The product SDS must be used as a reference for the specific product.
 - F. Remove ice and snow and walkways and other heavily traveled areas.
 - G. Smoking is only permitted in designated areas. Extinguish and properly dispose of cigarette butts. DO NOT THROW LIT CIGARETTES IN THE GRASS.
10. Ladders
- A. Stepladders shall be equipped with a metal spreader or locking device of sufficient size and strength to securely hold the front and back section in open position.
 - B. Stepladders must not be climbed higher than the top two "rungs". A label should be located on the ladder demonstrating the highest foot level.
 - C. When climbing or working from a ladder, always face the ladder and never allow your belt-buckle to pass the siderails. This can easily cause the center of gravity to shift and
 - D. Ladders shall be maintained in good condition, and defective ladders shall be withdrawn from service. Never use a broken or damaged ladder.
 - E. Extension ladders shall be erected on a sound base at a 4-1 pitch and placed to prevent slippage.
 - F. The top of a ladder used to gain access to a roof should extend at least 3 feet above

point of contact.

- G. In areas containing electrical circuits, a portable, fiberglass ladder should be used.
- H. Fixed ladders must be inspected annually. Ladder safety devices must also be checked to verify proper function.

11. Fall Hazards

- A. Employees shall be protected from unprotected sides and edges which are more than 4 feet above a lower level or pose the risk of falling into equipment.
- B. Employees shall identify areas where work is required which is determined to be a fall hazard and will take appropriate action to protect the area and prevent falling.
- C. All railing systems located over tanks or other elevated platforms shall be reviewed prior to work and annually to ensure the system is adequate to prevent falls into tanks or lower levels.

12. Machinery, Fixed

- A. Machines designed for a fixed location shall be securely anchored to prevent walking or moving or designed in such a manner that the machine will not move in normal operation.
- B. All belts, pulley, chains, flywheels, rotating or reciprocating parts within 10 feet of the floor or working platforms shall be effectively guarded.
- C. Equipment shall be shut down and de-energized before inspection or maintenance work is started.

13. Weeding, Mower, Tree Trimming and Removal

- A. Employees shall be instructed in the safe use of all equipment, both power and hand tools.
- B. Before starting power tools, make sure all guards are in place.
- C. Before mowing an area, inspect the area and remove stones, branches, and other foreign objects which may damage the equipment or become projectiles.
- D. Employees using chain saws will wear a face shield and chaps. Chain saw use requires the user to stand with the saw offset to the side to more easily avoid the blade in the event of kick-back.

14. Welding, Cutting, and Heating

- A. Employees shall be instructed in the safe use of all equipment, both power and hand tools.
- B. Proper precautions (isolating welding and cutting, removing fire hazards from the vicinity, providing a fire watch, etc.) for fire prevention shall be taken in areas where welding or other "hot work" is being done. No welding, cutting or heating shall be done where the application of flammable paints, or the presence of other flammable compounds, or heavy dust concentrations creates a fire hazard.
- C. Arc welding and cutting operations shall be shielded by non-combustible or flameproof shields to protect employees from direct arc rays.
- D. When electrode holders are to be left unattended, the electrodes shall be removed, and the holders shall be placed or protected so that electrical contact cannot be made with employees or conducting objects.
- E. All arc welding and cutting cables shall be completely insulated. There shall be no repairs or splices within ten feet of the electrode holder except where splices are equal to the cable. Defective cable shall be repaired or replaced.
- F. Proper eye protective equipment to prevent exposure to personnel shall be provided. Employees using welding equipment shall take all precautions to protect observers of the welding operations.

15. Cylinders of Compressed Gas Use in Welding

- A. Valve protection caps shall be in place when compressed gas cylinders are transported,

- moved, or stored, unless moved on a torch-cart with regulators and securing devices in place.
- B. Compressed gas cylinders shall be kept away from excessive heat, shall not be stored where they might be damaged or knocked over by passing or falling objects, and shall be stored at least twenty feet away from combustible materials.
 - C. The valve protection cap shall be in place except when the cylinder is in use or is connected for use.
 - D. Acetylene cylinders shall be stored and used in a vertical valve end up position only.
 - E. Compressed gas cylinders shall be secured in an upright position at all times. Oxygen and fuel gas cylinders must be separated in storage by a 20-foot distance or a 5-foot ½-hour rated fire wall.
 - F. Fuel gas valves should not be opened more than 1-½ turns to enable easier shut-off. If a valve wrench or tool is needed to close the valve, it must remain in place on the cylinder.
 - G. Oxygen and fuel gas regulators shall be in proper working order. Regulators shall be purged when work is completed.
 - H. Fuel, gas and oxygen hoses shall be easily distinguishable and shall not be interchangeable. Hoses shall be inspected at the beginning of each shift and shall be repaired or replaced if defective.
16. Personal Hygiene
- A. Practice good personal hygiene and safety to guard against occupationally related diseases.
 - B. Wear clothes that protect the arms and legs.
 - C. Avoid loose fitting clothing that could get caught in moving equipment.
 - D. Do not place fingers into mouth, nose, ears, or eyes while handling wastewater, biosolids, or chemicals.
 - E. Wash hands with disinfectant soap before eating, smoking, or going to the lavatory.
17. Office and Clerical Work
- A. Walk at all times. Use care when passing through doorways.
 - B. Check with supervisors before using extension cords or power strips. Ensure extension cords are three-prong type and that the cords are not damaged.
 - C. Electrical cords shall not be overloaded beyond their rated amperage capacity.
 - D. Keep cords away from aisle ways.
 - E. Stairways and passageways should be unobstructed by any type of equipment, furniture, tools or other articles.

13.0 RESPIRABLE CRYSTALLINE SILICA DUST

13.1 Introduction

OSHA has mandated that all work involving the release of respirable crystalline silica dust be performed in such a manner which is consistent with protecting all employees from exposure. Employees are not permitted to perform work which will result in the creation of crystalline silica dust without adequate controls in place. A written exposure control plan, outlining exposure sources and control measures, will be established for any regulated silica exposure.

13.2 Controlling Silica Dust

- A. Employees engaged in work which will result in the release of silica dust, such as grinding, drilling, cutting, or milling silica containing materials such as concrete, are required to follow hazard control methods involving the use of integrated water systems or HEPA vacuum systems.
 - 1. For purposes involved in the scope of TriCo work, control methods may be found in OSHA's Respirable Crystalline Silica Dust standard for construction (29 CFR 1926.1153

table 1). This standard is developed for the construction industry but is applicable for work which is closely related to the utility industry.

2. Table 1 mandates that for the selected task, employees must enact one of the appropriate control measures (water or vacuum) to limit the release of silica dust. Table 1 also mandates when respiratory protection must be used in these circumstances based on the location and time the employee is performing the task (indoors/outdoors, <4 hours/>4 hours)
3. For tasks which do not conform to the Table 1 guidelines, TriCo will establish through air monitoring or objective data, the exposure levels for employees and determine the appropriate respiratory protection. Any exposure above the action level (25 micrograms/cubic meter calculated on 8-hour TWA) will require the use of respiratory protection.
4. A limited access area will be established prior to work, if there is potential for other employees, contractors, or visitors to have exposure during the course of work. This will consist of barricading the area and warning signs.
5. Employees exposed at or above the action level for more than 30 days in one calendar year are required to submit to a medical evaluation every three years as outlined in 29 CFR 1910.1053.
6. All employees will be trained on the hazards of silica dust exposure and how to follow the compliance guidelines set forth in either table 1 or established by TriCo.
7. All employee records of exposure and medical evaluations will be maintained for 30 years after the last date of employment.
8. Housekeeping
 - Dry sweeping or brushing of silica dust is strictly prohibited, including the use of sweeping compound (unless documentation is available demonstrating its efficacy)
 - Water or HEPA vacuum controls must be used for housekeeping purposes to remove silica dust from the work area.
 - Compressed air will not be used to blow off or remove silica dust from the work area or surfaces unless the system is designed to capture the dust or no alternative method is feasible, in which case exposure sampling/monitoring and respiratory protection is required.
9. The table 1 outlined in this section contains the most common activities which TriCo employees will be exposed to during normal operations.

**TABLE 1: SPECIFIED EXPOSURE CONTROL METHODS
WHEN WORKING WITH MATERIALS CONTAINING CRYSTALLINE SILICA**
Table is incomplete and only consists of most common tasks performed at TriCo.
A more detailed table can be found at 29CFR 1926.1153

Equipment / Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours /shift	> 4 hours /shift
(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
(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.	None	None
(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. 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. - When used outdoors. - When used indoors or in an enclosed area.	None APF 10	APF 10 APF 10
		None APF 10	APF 10 APF 10
(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. 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 APF 10

14.0 BLOODBORNE PATHOGENS

14.1 Purpose

TriCo will comply with this instruction by determining exposure risks of personnel, implementing an infection control program, providing Hepatitis B vaccinations at no cost to personnel, and providing extensive training in writing and by videotape instruction.

This Program will acquaint you with the contents of the OSHA standard as it applies to Hepatitis and HIV transmission, the use of protective clothing, and safe work practices and vaccination protocol.

14.2 Hepatitis Transmission

Hepatitis B (HBV) is a virulent infectious disease which claims thousands of new cases every year. Over 1 million people in the U.S. are carriers of the disease. Hepatitis B is transmitted to workers and ancillary employees through contact with the blood and body fluids of infected items, usually through accidental needle sticks and unprotected cuts and sores.

Hepatitis B is most commonly transmitted through intravenous drug users sharing needles and sexual contact among homosexual active males and female prostitutes. These groups, historically, spread it to the community. It has infected thousands of health care employees per year, such as operating room personnel, lab workers, surgeons, dental personnel, blood bank technicians, first responders, maintenance workers and housekeeping personnel.

Employees are usually infected through contact with bloodborne pathogens and accidental needle stick injuries.

Hepatitis symptoms often include jaundice, loss of appetite, nausea, and elevated liver function tests.

HIV and Hepatitis risks can be reduced or prevented in the health care setting by:

- Use of personal protective equipment (PPE) to protect against the transference of body fluids during at-risk procedures. This includes, but is not limited to gloves (of various types), masks, laboratory coats, gowns, etc.
- Using disinfectants to reduce pathogens in the environment.
- Washing hands between tasks, each time gloves are changed, and at the beginning and end of each workday.
- Using puncture-resistant sharps containers for needle or contaminated sharps disposal.

14.3 Hepatitis Protection

OSHA (Occupational Health and Safety Administration) enforces the CDC (Centers for Disease Control) recommendations. OSHA requires every worker who is exposed to more than one infection risk per month to receive a Hepatitis B vaccination. TriCo must offer it to each of these employees at no cost to the employee. TriCo is charged with the responsibility of identifying, scheduling, and documenting affected employees.

An employee who refuses inoculation must sign an Informed Refusal Form (Appendix I) in the possession of the Safety Coordinator. Support documentation must be maintained in personnel records for 30 years from the date of termination of the employee.

14.4 HIV Transmission

HIV is not as contagious as Hepatitis, but it has no vaccine for prevention. It is transmitted through body fluids, so workers are exposed to it. OSHA requires that employees be trained in prevention and be required to protect themselves during at-risk procedures. The CDC recommends, and OSHA enforces, that "Universal Precautions" be instituted in all health care settings.

14.5 Universal Precautions

Under "Universal Precautions", blood and body fluids are considered potentially infected with HIV, Hepatitis B Virus (HBV) and other bloodborne pathogens and must be handled accordingly. Hepatitis A and C are now recognized, but little to date is known about these strains.

Universal Precautions applies to blood and body fluids containing visible blood, including cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal and pericardial fluid and amniotic fluid. They do not apply to feces, nasal secretions, sputum, sweat, tears, urging, saliva, breast milk and vomitus, unless blood is present.

The amount of blood required to constitute an infectious risk has been variously defined by OSHA, EPA and others are "substantial," "dripping" and "significant." EPA has offered an objective definition that 15 milliliters of blood (about the size of three teaspoons) must be present to be of sufficient dose to be infectious. This definition of quantity does not preclude the use of protective clothing; it only helps to define what constitutes infectious waste when disposing of blood-soaked materials. Regardless of amount, all contaminated blood is potentially infectious and dangerous.

14.6 Definitions of Infectious Conditions

Infection needs four simultaneous conditions to exist. If you take any condition away, the danger from infection will be reduced or eliminated. The conditions which must exist simultaneously are:

- A sufficiently large dose of contaminated blood to constitute an infectious risk.
- A sufficient virulence, to be dangerous.
- A portal of entry into a host, such as through an open cut or the nasal passages.
- A diminished resistance level in the host. For instance, if a medical worker is tired, has the flu or a cold, the host is more susceptible to infection.

Infectious diseases are prevented by using one or more of the following interventions:

- The use of gloves and masks that eliminate portals of entry.
- Regular hand washing and the use of disinfectants which remove or reduce the dose and virulence of the disease.
- Placing of sharps and needles into commercial sharps containers and the avoidance of recapping needles reduces the risk of needle stick injuries.

14.7 Personal Protective Equipment (PPE)

It is the responsibility of TriCo to provide protective clothing in all work areas and locations where infectious wastes may be generated. In each instance TriCo will provide protective clothing appropriate to the exposure risks in each area. The use of protective clothing is an OSHA and TriCo requirement.

A. **Gloves**

After donning gloves, examine them for physical defects. Wear gloves whenever your hands might come into contact with blood, body fluids, or surfaces that could be contaminated by them. Disposable gloves should be removed and thrown away after each task. Fit gloves so they cover the cuff of your clothing if possible, to reduce the area of skin exposure.

B. **Masks**

Masks are to be worn if there is a risk of splashing or aerosolization of sewage. Masks reduce the risk of infectious droplets entering the breathing passages.

C. **Protective Eye and Face Protection**

Chemical splash goggles protect the eyes from splashing and aerosolization of body fluids and

harmful chemicals. If a procedure presents a risk of splashing or if a manufacturer recommends that goggles be worn when using their product, the employee must wear goggles.

D. Gowns and Head Coverings

Gowns are worn to protect street wear and the arm and neck areas from contamination. Gowns may be changed daily unless they become soiled or wet.

Head coverings must be worn whenever procedures are performed, or chemicals are handled which might create splashing or aerosolization. When worn they should cover the hair, ears, and parts of the neck and face.

E. Resuscitation Equipment

Pocket masks, resuscitation bags and/or other ventilation devices should be used by first responding personnel. This equipment will minimize the need for emergency mouth-to-mouth resuscitation.

14.8 Protective Clothing Disposal

Linens and reusable protective clothing which become soiled with body fluids shall be handled as little as possible and must be bagged at the location in leak proof bags. When removing protective clothing apparel, avoid contamination of your exposed body parts.

14.9 Hand Washing - Six Occasions

Wash hands regularly with an antimicrobial solution:

- before gloving,
- after gloves are removed,
- after each task,
- before leaving work,
- before eating and,
- after your hands have touched a potentially contaminated area.

14.10 Procedures if an Exposure Incident Occurs

If an exposure incident occurs, that is, if another individual's body fluids have gained entry into an employee, an immediate report must be made to the Safety Coordinator and an Exposure Incident Form (Appendix J) completed. The affected employee must immediately report to St. Vincent's Hospital. A report must be completed by the affected employees' supervisor and filed with TriCo Office within 24 hours after the incident occurs.

The physician in charge will request that the source patient submit to serologic testing for HBV and HIV. Read "Follow-up Procedures After Possible Exposure to HIV/HBV, Section 5(a) (1) (d) (6)" of OSHA Inst. 2-2.44 A for procedural guidelines. This is followed by a Post-Examination process.

14.11 Housekeeping

Many safety and health injuries occur because of inadequate cleaning, repair and maintenance. At minimum, the following housekeeping rules must be practiced.

- Clean and disinfect the general environment with a solution of at least 1-part sodium hypochlorite (bleach) to 100 parts of water, or equivalent disinfectant.
- Clean exposed equipment and environmental surfaces after contact with blood and other infectious agents, and at the end of the work shift.

Place biohazard labels on sharps containers, infectious waste containers, and holding media containing blood and other potentially infectious materials.

14.12 Infectious Waste

The EPA administers infectious waste disposal policies in concert with the State Health Department. OSHA administers the regulations within the workplace. Materials which are blood-soaked are considered infectious wastes. Saturated articles are to be disposed of in containers with red biohazard bag inserts and tightly fitting lids.

14.13 Training

Initial training of all potentially affected employees must be accomplished within three (3) days after start of employment. TriCo Supervisors must identify potentially affected employees. Newly hired affected employees must be advised that training is required and that they will be scheduled. TriCo Supervisors will provide the names of the affected new employees and date of hire to the Safety Coordinator. TriCo will schedule, conduct, and document the training. Documentation of training will be maintained for a minimum of three (3) years in the affected employees' personnel folder.

Annual training: All affected TriCo employees must receive annual training. It is the responsibility of Department heads to ensure that all affected employees received Bloodborne Pathogens training. Training can be scheduled with the Safety Coordinator. Documentation of training for these individuals will be forwarded to TriCo Office.

15.0 ENERGY CONTROL

15.1 Purpose

The purpose of this program is to establish procedures for the safe control of energy through locking and tagging of equipment and machinery at TriCo Regional Sewer TriCo.

This program supports compliance with the Occupational Safety and Health Administration Lockout/Tagout Standard as found in 29 CFR 1910. 147. This program applies to all TriCo employees who are authorized to perform maintenance service activities on equipment or processes which present energy hazards and any employees who are affected by these activities.

15.2 Definitions

Affected Employees: An employee whose job requires him/her to operate or use a machine or equipment on which service or maintenance is being performed under lockout/tagout, or whose job requires him/her to work in an area in which such service or maintenance is being performed. Affected employees must be informed when lockout/tagout is being performed.

Authorized Employee: A person who locks and tags machines or equipment in order to perform service or maintenance on that machine or equipment.

Energy Isolation Device: A mechanical device that physically prevents the transmission or release of energy, including a manually operated electrical circuit breaker, a disconnect switch, a line valve, a block and any similar device used to block or isolate energy.

Lockout: The process used to identify, cut off and secure all energy sources before beginning repairs, adjustments or maintenance. A lockout device is used to secure equipment or machinery in the off position, ensuring that the equipment or machinery cannot be operated.

Lockout Device: A lock (either key or combination type) that holds an energy isolating device in a safe position and prevents the machine or equipment from energizing.

Servicing and/or Maintenance: Workplace activities that require lockout/tagout on the

equipment before beginning the activity because employees may be exposed to the unexpected energization or startup of the equipment or the release of hazardous energy. Servicing and/or maintenance includes constructing, installing, setting up, adjusting, inspecting, modifying, lubricating, cleaning or unjamming and making tool changes.

Tagout: Attaching a tag to the lock on the power source that has been shut off, indicating the time, reason for the lockout and the name of the person doing the work. The tag acts as a warning not to restore energy to the equipment or machinery.

Zero Energy State: All energy has been controlled in machinery or equipment.

15.3 Responsibilities

The Program Administrator is the Safety Coordinator

This person is responsible for:

- Issuing and administering this program and making sure that the program satisfies the requirements of all applicable federal, state or local lockout/tagout requirements
- Providing initial and annual training of employees on lockout/tagout procedures
- Maintaining the training records of all employees included in the training sessions
- Verifying through periodic audit that the energy control program effectively protects employees servicing powered equipment

The Collections Superintendent and the Plant Superintendent

These people are responsible for:

- Assuring that all employees who are authorized to service equipment within TriCo have received training on appropriate lockout/tagout procedures and energy control plans
- Completing energy control plans for each specific piece of equipment or process within TriCo
- Assuring that appropriate energy isolation devices are available for all equipment or processes within TriCo
- Assigning locks to authorized employees
- Coordinating activities of contractors that may affect lockout/tagout and energy control procedures within TriCo

Supervisors Whose Departments Contain Energized Equipment these people are responsible for:

- Ensuring that only authorized employees service the equipment and machinery in their department

Authorized Employees

These people are responsible for:

- Complying with TriCo's energy control program
- Following all safe shutdown and startup procedures
- Communicating activities to all affected employees and other authorized employees
- Ensuring the security of their own lock and key

Affected Employees

These people are responsible for:

- Advising the maintenance department when equipment needs servicing
- Following the direction of the authorized employee as it affects the operation of their equipment

15.4 Program Activities

General

- All equipment that contains energy of any form will be locked out prior to being serviced or maintained.
- All employees who are authorized to work on equipment or machinery in TriCo will follow appropriate TriCo lockout/tagout procedures.
- Contractors who perform work on TriCo equipment will comply with TriCo lockout/tagout procedures.
- An energy control plan will be completed for all pieces of equipment requiring lockout. This plan will identify all energy isolation points to be locked and tagged, as well as any special information required to safely achieve a zero-energy state.
- Lockout checklist and safe startup checklist (Appendix L) will be used during all service and maintenance activities to ensure the safety of both authorized and affected employees.

Work Requiring More Than One Person

- If more than one person is required to lock or tag out equipment, each person shall place his or her own lock and tag on the energy isolation devices.
- When an energy-isolating device cannot accept multiple lock and tags, a multiple lockout device or hasp will be used.

15.5 Procedures

Step 1: Before Beginning Service to Equipment

- Identify the type and amount of energy source on the equipment
- Identify and control the possible dangers related to the energy source
- Be sure to understand the necessary steps to control the energy source
- Notify all affected employees when the equipment will be shut off for service

Step 2: Shut Down Equipment

- Refer to manufacturer's or TriCo specific procedures

Step 3: Isolate the Machine or Equipment

- Shut off main breaker or control switch
- Close valves
- Disconnect process lines

Step 4: Attach Lock and Tag

- Each Authorized Employee must attach assigned lock

Step 5: Control Stored Energy

- Bleed electrical capacitors
- Vent or isolate pressure or hydraulic lines
- Drain tanks
- Block, clamp, or chain switches and levers that could be moved into the start position
- Clear lines that contain materials that are toxic, hot, cold, corrosive, or asphyxiating

Step 6: Verify that the Energy State is at Zero

- Test the start switches on the equipment
- Check pressure gauges to ensure that the lines are depressurized
- Secure blocks or cribs
- Check electrical circuits to verify that the voltage is at zero energy
- Check that blanks are secure and not leaking

Step 7: Begin Maintenance

Step 8: Safe Start Up

- Ensure machine components are operational
- Replace all safety guards
- Remove all tools from the machine area
- Remove all braces, pins, blocks, and chains
- Reconnect all pressure tubing, pipes, and hoses
- Clear work area for mechanical operation

Step 9: Remove Lockout Devices and Tags

Step 10: Notify Affected Employees

- Notify all affected employees before starting equipment

Step 11: Start Up Equipment

15.6 Special Situations

Removing Someone Else's Lock

A lock may be removed by someone other than the employee who placed the lock only under the following conditions:

- The employee whose lock is to be removed is not available to remove the lock after servicing has been completed
- All reasonable efforts have been made to contact the employee to inform him/her that the lock has been removed
- The employee is contacted and informed that the lock is removed prior to the employee starting work on the next work shift

***Outside Contractors:* If outside contractors will be working on equipment within TriCo, the Collections Superintendent or Plant Superintendent must make provisions to inform them of TriCo's lockout/tagout procedures. If the contractor's procedures are different from TriCo's, the Collections Superintendent or Plant Superintendent must make an agreement with the contractor as to which procedure will be followed. All employees working on the project must be notified of any changes in their own procedures.**

Temporary Re-activation: If the equipment being serviced must be temporarily re-activated (for example, to test the equipment as part of installation) all startup and lockout/tagout procedures must be followed.

15.7 Evaluation Recordkeeping

The OSHA Lockout/Tagout Standard requires that you keep accurate records of all energy control evaluations.

Evaluations must be done annually at a minimum and must include:

- Interviews with each authorized employee to discuss the employee's responsibilities under this written energy control program and lockout/tagout procedures
- Checks to make sure proper locks and tags are being used
- Checks to make sure all lockout/tagout procedures are being followed

15.8 Training Recordkeeping

The OSHA Standard also requires that you keep accurate records of all lockout/tagout training activities. This calls for keeping a record of all participants, the training received, the date of training and who performed the training.

16.0 ARC FLASH

16.1 Purpose

The purpose of this policy is to help prevent accidental injury caused by an arc flash event and to promote safe facility practices among employees. Information relied upon in this policy are the generally accepted standards listed in the OSHA 29 Code of Federal Regulations (CFR) Part 1910, Subpart S, National Fire Prevention Association 70E-2018, Standard for Electrical Safety Requirements, IEEE Standard 1584-2002, Guide for Performing Arc Flash Hazard Calculations.

16.2 Roles & Responsibilities

- A. The Safety Coordinator has the responsibility to implement this arc flash policy by:
 - Identifying and scheduling training for employees in the proper use of this policy.
 - Directing supervisors and employees to endorse and comply with this policy.
 - Ensuring that protective clothing is worn, in compliance with this policy.
 - Enforcing compliance with this policy.
 - Implement hazard warning labeling in compliance with this policy.

- B. Supervisors have the responsibility to:
 - Ensure that all outside contractors comply with this safety policy.
 - Require and enforce compliance with this policy.
 - Ensure that hazard warning labels have been installed in compliance with this policy.
 - Ensure that lockout/tagout procedures are followed in conjunction with this policy.

- C. Employees have the responsibility to:
 - Understand their assigned tasks relating to potential arc flash hazards.
 - Know the consequences of non-compliance.
 - Comply with the directives of this policy.
 - Understand the hazard warning labels associated with arc flash hazards.

16.3 Objectives

The objectives of this policy are to establish a written program outlining minimum guidelines for the use of arc flash protection. This written program will address the following elements.

- I. What is an Arc Flash?**
- II. Can equipment be de-energized before work is conducted?**
- III. Preparing for work in an arc flash zone.**
- IV. Determining Personal Protective Equipment Risk Category.**
- V. Fire Resistant Clothing Issuance.**
- VI. Non-Compliance of Arc Flash Policy.**

I. What is an Arc Flash?

An arc flash is a short circuit through the air. In an arc flash incident, an enormous amount of concentrated radiant energy explodes outward from the electrical equipment, creating pressure waves that can damage a person's hearing, a high-intensity flash that can damage their eyesight, and a superheated ball of gas that can

severely burn a worker's body and melt metal.

II. Can equipment be de-energized before troubleshooting?

The best way to prevent an arc flash incident from occurring is to de-energize equipment before beginning work. Whenever possible, equipment shall be de-energized before beginning work. Verification of voltage must be made to ensure the equipment is truly de-energized before it is worked on. Refer to TriCo's Lockout/Tagout procedure.

III. Preparing for work in an arc flash zone.

Arc flash zones will be labeled with a standard arc flash hazard sign. The arc flash protection boundary is an imaginary sphere that surrounds the potential arc point within which a person could receive a second degree burn in an electrical arc flash were to occur, based upon the available energy. For purposes of TriCo policy, the minimum arc flash protection boundary, where required, shall be a minimum, 4 feet. Arc flash PPE shall be worn while in the arc flash zone.

Employees preparing for work with potential for electrical arcing will first need to check the panel and labeling of the unit to be opened. If an arc flash label exists on the equipment, the guidelines for PPE and hazard assessment must be followed. This label should also outline the incident arc energy of the equipment.

For systems that are 600 volts or less, the flash protection boundary shall be 4 feet based on the product of clearing times of 6 cycles (0.1 second) and the available bolted fault current of 50 kA or any combination not exceeding 300 kA cycles (5000 ampere seconds). For clearing times and bolted fault currents other than 300 kA cycles, or under engineering supervision, the flash protection boundary shall alternatively be permitted to be calculated in accordance with the following general formula:

$$D_c = [2.65 \times MVA_{bf} \times t]^{1/2}$$

OR

$$D_c = [53 \times MVA \times t]^{1/2}$$

Where:

D_c = distance in feet from an arc source for a second-degree burn
 MVA_{bf} = bolted fault capacity available at point involved (in megavolt amps)
 MVA = capacity rating of transformer (mega volt amps). For transformers with MVA ratings below 0.75 MVA, multiply the transformer MVA ratings by 1.25.
 t = time of arc exposure (in seconds)

At voltage levels above 600 volts, the flash protection boundary is the distance at which the incident energy equals 5 J/cm² (1.2 cal/cm²). For situations where fault-clearing time is 0.1 second (or faster), the flash protection boundary is the distance at which the incident energy level equals 6.24 J/cm² (1.5 cal/cm²).

IV. Determining Personal Protective Equipment Hazard Risk Category

PPE shall be worn when any work is conducted within the arc flash zone for specific equipment. Arc-Rated clothing and PPE shall be in compliance with the following NFPA 70E Table 130.7(C)(16)

PPE Category	Cal/cm ²	Personal Protective Equipment (Bold items are "As-Required" to complete the level of protection noted)
1	4	Arc-Rated Long sleeve shirt and pants, or Arc-Rated Coverall Arc-Rated face shield or arc flash suit hood Arc-Rated jacket, parka, rainwear, or hard hat liner Hard Hat Safety glasses or goggles (Selection required) Hearing Protection Heavy duty leather gloves Leather Footwear (As needed)
2	8	Arc-Rated Long sleeve shirt and pants, or Arc-Rated Coverall Arc-Rated face shield or arc flash suit hood, AND Arc-Rated balaclava Arc-Rated jacket, parka, rainwear, or hard hat liner

		Hard Hat Safety glasses or goggles (Selection required) Hearing Protection Heavy duty leather gloves Leather Footwear
3	25	Arc-Rated Long sleeve shirt, pants, and Coverall Arc-Rated Flash suit jacket, pants, and hood Arc-Rated gloves Arc-Rated jacket, parka, rainwear, or hard hat liner Safety glasses or goggles (Selection required) Hearing Protection Leather Footwear
4	40	Arc-Rated Long sleeve shirt, pants, and Coverall Arc-Rated Flash suit jacket, pants, and hood Arc-Rated gloves Arc-Rated jacket, parka, rainwear, or hard hat liner Safety glasses or goggles (Selection required) Hearing Protection Heavy duty leather gloves Leather Footwear
All Arc-Rated items must meet the minimum rating for the PPE Category selected. All Arc-Rated clothing items are Fire Resistant		

V. Fire Resistant Clothing Issuance

Arc-Rated Personal Protective Equipment and Fire-Resistant daily wear clothing will be made available by TriCo. Daily wear FR clothing will be issued to Qualified Persons and Occasional Users as designated by respective divisions.

Some employees with the following titles may be required to work in arc flash zones.

<u>Departments</u>	<u>Job Title</u>
Collections	Collections Superintendent Operations & Maintenance Technician Operations & Maintenance Specialist
Engineering	TriCo Engineer Technical Specialist
Plant	Operations & Maintenance Specialist Operations & Maintenance Technician Plant Superintendent Pretreatment Coordinator Laboratory Coordinator

When the employee changes job title (and no longer qualifies for FR daily wear clothing) or is no longer employed by TriCo, the FR daily wear clothing shall be returned to their supervisor.

Upon issuance of replacement daily wear FR clothing, the replaced garments shall be turned into their supervisor.

VI. Non-Compliance of Arc Flash Safety Policy

The nature and level of the hazard reflect the compliance level. Safety is a condition of employment. Non-adherence to the Arc Flash Safety Policy may result in disciplinary action.

For any other specific requirements concerning this policy, refer to NFPA 70E: Standard for Electrical Safety in the Workplace

17.0 HAZARD COMMUNICATION PLAN (HAZCOM)

17.1 General

The following Hazard Communication Program (HAZCOM) has been established to ensure compliance with all directives pertinent to Code of Federal Regulations (29 CFR 1910.1200). It is the intent of this program to provide all TriCo Regional Sewer TriCo employees with a reference guide to working with Hazardous Chemicals.

The written Hazard Communication Plan is available for review by all TriCo employees at the following central location:

TriCo Regional Sewer Utility Maintenance Building SDS Station is in the conference room. Copies of the plan may be obtained from the Safety Coordinator at the request of any employee.

List of Hazardous Chemicals:

Inventories of hazardous chemicals and materials used at TriCo are located at the SDS Station. Due to the large inventory throughout TriCo, individual inventories per location are not attached.

Designated Personnel:

The Safety Coordinator is responsible for updating and maintaining the hazard communication program, employee training, labeling, and ensuring that SDS forms are obtained/maintained.

Updating and Evaluating the HAZCOM Program:

At least once per year, the Safety Coordinator will review and update the program. The Safety Coordinator will access the hazardous chemicals and materials in Laboratories and work areas with the assistance of the Supervisors. The update will consist of each of the following elements of the HAZCOM program:

- Hazard assessment
- Assessment of applicable regulations
- Written plan(s)
- TriCo Policies
- TriCo Discipline procedures
- Training
- Inspection Audits
- Designated employee accountability

17.2 Employee Training

Prior to beginning work with hazardous chemicals, each employee will be required to attend a hazard communications training class. Supervisors will ensure that new employees are trained and that the training is documented.

Training will be conducted by either the Safety Coordinator or Superintendents. After completion of initial training, it will be the responsibility of the Supervisor to train all newly hired personnel. When new chemicals or chemical products are introduced, additional training will be required. When appropriate, external agencies may be contracted to conduct training as required.

Initial Training:

For employees whose duties require them to work around hazardous materials, initial training shall be provided by the supervisor or by TriCo trainer before they begin their work assignment. This training will cover the following topics:

1. Overview of Hazard Communication regulations, including employees' rights under the regulations.
2. Operations in the work area where hazardous materials are present.
3. How to read warning labels and identify the presence or release of hazardous materials.
4. Emergency procedures for spills/accidents, including fire hazards, first aid, clean-up, and disposal.

5. Location and availability of this Hazard Communication Program, including hazardous materials lists and SDSs.
6. How to read an SDS and use it to identify (at a minimum):
 - (a) Physical and Health Hazards
 - (b) First Aid Procedures
 - (c) Protective Measures
 - (d) Storage and Handling Procedures
 - (e) Spill Response Procedures

Retraining:

Additional training will be conducted by Supervisors when new chemicals are introduced into the work area. Retraining is not required if the new chemical contains hazards similar to previously existing chemicals for which training has already been conducted. Monthly safety meetings will be held, and hazardous materials will be discussed.

Record Keeping:

The trainer will require all employees attending the Hazard Communication Course to sign a sheet verifying their attendance.

Training Format:

Each employee attending the safety course will receive a lecture and Audio-Visual Training. Training will include the following:

- The location and availability of the written Hazard Communication Program and SDS.
- Training on the physical and health hazards of the chemicals in the work area.
- How to reduce or prevent exposure to these hazardous chemicals through proper work practices, engineering procedures, emergency procedures and personal protective equipment to be used.
- What TriCo has done to reduce or prevent the workers exposure to chemicals.
- Procedures to follow if they are exposed to chemicals.
- Methods and observations used to verify the presence or release of a hazardous chemical.
- Explanation of the details of the program, labeling, the SDS, and how employees can obtain and use appropriate information.

17.3 Labeling

It will be the responsibility of the Supervisors to insure proper labeling of containers. This is to be consistent with the information contained in the appropriate SDS.

Container Labels:

Container Labels will be in accordance with current and accepted OSHA, GHS, and NFPA Standards.

Materials Received:

All containers used for chemicals are to be properly and clearly marked in English with the following:

- Contents of container
- Hazard of the specific target organ
- Name and address of the Manufacturer

Missing Labels:

Missing, defaced or illegible labels will be replaced immediately with clean, properly marked ones. Notices will be placed on bulletin boards that provide container labeling systems and the location of the HAZCOM program.

Portable Containers:

Portable containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer are not required to be labeled. All other portable containers are to be labeled with the content and hazard of the specific target organ.

Chemicals in Unlabeled Pipes:

Prior to beginning any work on unlabeled pipes, employees shall contact the Safety Coordinator. Specific training regarding potential hazards and safety precautions must be conducted. Information for the piping system which identifies the location of all pipes and their contents must be available from the Safety Coordinator.

Piping Contents:

The following items may be contained within piping:

- TriCo Gas Lines
- Electrical Conduit
- Water Pipe
- Ferrous Chloride
- Polymer
- Sewage
- Chemicals of any Nature

17.4 Labeling on Shipped Containers

It will be the responsibility of the receiver to ensure that all boxes, containers, and cartons which are suspect of containing chemicals are appropriately labeled. Shipments that show damage, leaks or spills are to be refused.

Materials Shipped:

Any manufactured hazardous substance leaving the property must be accompanied by the data listed in *Materials Received* of this document. In addition, if a material is shipped, an SDS is to be included. Chemical waste will be shipped via a contracted vendor, in compliance with EPA, OSHA, and DOT regulations.

17.5 Obtaining/Maintaining Safety Data Sheet (SDS)

Location:

A master file of all SDS obtained from Chemical Manufacturers or Distributors will be maintained at the SDS Station in the garage by the Safety Coordinator. A work area/Lab specific SDS file of that area's hazardous chemicals will be kept within a central location of the work area or Laboratory. They will be available for review by all employees during working hours.

Hazard Determination:

SDS will be requested for all incoming hazardous substances. TriCo Regional Sewer TriCo will rely on SDS furnished by the manufacturer for hazard determination.

SDS Information:

The Safety Coordinator will ensure that all SDS are current to the latest GHS/ANSI format, and have complete information in each of the following categories:

- Identities used on label
- Chemical and Common Names
- Physical and chemical characteristics
- Physical Hazards
- Health Hazards
- Primary routes of entry
- Air exposure limits (PELs, TLVs)
- Carcinogenicity

- Precautions for safe handling
- Control Measures
- Emergency and first aid procedures
- Date of preparation of SDS
- Name/address/phone number of SDS preparer or distributor.

Missing SDS:

The Safety Coordinator will contact suppliers for any missing SDS or missing SDS category information. Contacts will be documented. If the requested information is not received within 30 days, TriCo may file a complaint with OSHA, or find a new supplier. Documentation of requests will be maintained.

17.6 Hazardous Non-Routine Tasks

It is TriCo policy that no employee will begin work or project or any non-routine task without first notifying the appropriate supervisor.

Specific Training:

Any non-routine task will require specific training concerning the hazards associated with the task. This training will include information on:

- Specific Chemical Hazard
- Protective/safety measures that the employee can take.
- Measures that TriCo has taken to reduce hazards, to include administrative controls, engineering controls, and personal protective equipment (PPE) required.

17.7 Informing Contractors

It will be the responsibility of Supervisors to inform contractors of the hazards in the work area to which they are assigned. This is critical in any area where chemicals/compressed gases are in use or stored. Contractors are to be informed of any restrictions involving use of compressed gasses, flame, or chemicals to be utilized by the contractor as part of the job.

It is the responsibility of the Supervisors to provide contractors and their employees with the information listed below. This information will be given to the contractor's employees prior to their entering the work site.

- Hazardous chemicals what they may be exposed to on the work site
- Measures the employee may take to reduce the possible exposure
- Steps that TriCo has taken to reduce the risks
- MSDS for all hazardous chemicals are on file in the Maintenance Building, or in the appropriate laboratory or work area
- Procedures to follow if they are exposed
- Location of the written plan is the Maintenance Building

18.0 EMERGENCY ACTION PLAN

18.1 Purpose

The purpose of an Emergency Action Plan is to protect the employees from serious injury, property loss, or loss of life in the event of a major disaster. A major disaster constitutes any one of the following: major injury, fire, tornado, earthquake, flood, bomb threat, or hazardous chemical spill.

In the event of any disaster listed, this Emergency Action Plan describes the responsibilities and

actions to be taken to protect all employees.

18.2 General Procedures

In the event of a disaster, the warning may come from any of the following sources: commercial radio or television, messenger or police, or tornado warning siren.

The maintenance building has a weather alert monitor located in the conference room. The main office also contains a weather alert monitor.

A. Notification of Emergency Warning

A person receiving notification of a possible disaster or in plant emergency should immediately notify their immediate supervisor. The emergency situation should then be conveyed to all employees with the use of phone or two-way radios.

B. Emergency Action Lead

Each office, Plant and Maintenance Building and the Government Center, should appoint/establish Emergency Response Team. The Team should consist of three members of management if possible. In the event of a disaster or immediate emergency, the members are to report to the designated rally point or shelter location unless the prevailing situation dictates otherwise.

Responsibilities of the Emergency Response Team

- Assess nature and extent of all emergencies
- Assume control of all emergency actions
- Assign tasks to personnel to carry out specific actions
- Order evacuation if deemed necessary
- Plan training exercises to test emergency response plan
- Instruct personnel of their duties under this plan

In any emergency situation, the ranking member of the Emergency Response Team present shall have final authority to coordinate procedures, and amend, modify or supersede any provisions of this plan in order to ensure employee, contractor, and visitor safety.

Injuries and Illnesses

A. Non-Life-threatening Situation

Check for anything that might make the scene unsafe, such as spilled chemicals, traffic, fire, or downed electrical lines. If the scene is not safe, call 911 immediately. If the scene is safe, check the victim and try to determine the extent of the injuries. Most maintenance staff have been trained in first aid and CPR. If more assistance is needed dial 911 and ask for an ambulance.

Information to know:

- Location of victim(s)
- How many victims
- Type of injury or illness
- If the victim is conscious

B. Life Threatening Situations

If the scene is unsafe and or a victim is known to be seriously injured, call 911 immediately. If the scene can be made safe without endangering yourself, then do so, then and only then administer first aid and CPR if necessary, until help arrives.

Fires

The Maintenance Building and Government Center are equipped with fire detection devices. These devices shall be tested semi-annually by a qualified person or company. If these alarms

should sound, notify all personnel, dial 911, and evacuate the building. Congregate at the evacuation point and take a head count.

- A. If you are in the interior of the building and smoke and/or flame is detected, notify all personnel and evacuate the building. If you detect smoke or flame from the outside of a building, go to the nearest phone and call 911. Do not attempt to enter the building!
- B. If a small fire is detected and you feel that you are capable of extinguishing by use of a hand fire extinguisher and you have been trained on the use of the extinguisher, you may attempt to extinguish in this manner. If you fail to extinguish the fire in a short amount of time (i.e. thirty seconds) EVACUATE!
- C. If and only if there is time to shut off the main gas supply valve and electrical main disconnect switch, a member of the Emergency Action Control Team may do so.

Tornadoes or Severe Weather

Definitions:

Watch: When the National Weather Service announces that conditions exist that allow development of severe weather or tornado.

Warning: The National Weather Service has determined that a tornado has been sighted or that severe weather is imminent.

Procedures:

Watch

If a severe weather or tornado watch has been issued, all staff will be notified either by phone or two-way radio. Staff out in the field shall be called into shelter. Lookouts will be posted, and weather reports will be monitored.

Warning

The Civil Defense Siren will be TriCo's primary means of warning all personnel. Other means shall include weather reports or posted lookouts. When a warning is sounded, TAKE COVER.

If, and only if, there is time to shut off the main gas supply valve and electrical main disconnect switch, a member of the Emergency Action Control Team may do so.

If you are in a vehicle or out in the field, find a tornado shelter or other refuge if possible. If one is not available, find a ditch or other depression in the landscape and lie down flat inside it. If you are near a highway overpass, try to hide yourself behind a piling, putting it squarely between you and the tornado.

Seeking shelter in a confined space may be as hazardous as the tornado itself.

Active Shooter / Workplace Violence

If an active shooter is present at any TriCo facility, employees should make every attempt to use the following guidelines to protect themselves and other TriCo employees and visitors:

RUN and escape, if possible.

- Getting away from the shooter or shooters is the top priority.
- Leave your belongings behind and get away.
- Help others escape, if possible, but evacuate regardless of whether others agree to follow.
- Warn and prevent individuals from entering an area where the active shooter may be.
- Call 911 when you are safe, and describe shooter, location, and weapons.

HIDE, if escape is not possible.

- Get out of the shooter's view and stay very quiet.
- Silence all electronic devices and make sure they won't vibrate.

- Lock and block doors, close blinds, and turn off lights.
- Don't hide in groups- spread out along walls or hide separately to make it more difficult for the shooter.
- Try to communicate with police silently. Use text message or social media to tag your location or put a sign in a window.
- Stay in place until law enforcement gives you the all clear.
- Your hiding place should be out of the shooter's view and provide protection if shots are fired in your direction.

FIGHT as an absolute last resort.

- Commit to your actions and act as aggressively as possible against the shooter.
- Recruit others to ambush the shooter with makeshift weapons like chairs, fire extinguishers, scissors, books, etc.
- Be prepared to cause severe or lethal injury to the shooter.
- Throw items and improvise weapons to distract and disarm the shooter.

After the event

- Keep hands visible and empty.
- Know that law enforcement's first task is to end the incident, and they may have to pass injured along the way.
- Follow law enforcement instructions and evacuate in the direction they come from, unless otherwise instructed.
- Take care of yourself first, and then you may be able to help the wounded before first responders arrive.
- If the injured are in immediate danger, help get them to safety.

Crimes in Progress

If you observe a suspicious person(s), or a crime in progress, contact 911 immediately. Describe the type of action taking place. If possible, give a complete physical description of the individual(s) involved. This may include race, estimate of age, height, weight and clothing.
DO NOT ATTEMPT TO APPREHEND OR PLACE YOURSELF OR OTHERS AT RISK

Bomb Threats

In the event of a bomb threat, which will normally be received over the phone, the following procedure should be followed:

- A. The person receiving the bomb threat should complete a report to TriCo Director as soon as possible and answer questions once the report has been turned over to the Emergency Control Committee.
 1. Commence immediate facility evacuation to outside evacuation site.
 2. Contact proper law enforcement agency
 3. Contact the Fire Department
 4. Do not permit re-entry until the building has been searched and declared safe by the bomb disposal unit.
- B. If a bomb threat is received by any other means than the telephone, the person receiving the threat should report immediately to their first-line supervisor or a member of the Emergency Control Committee.

Chemical Spills

All spills of hazardous chemicals beyond maintenance clean up must be reviewed, coordinated or remedied by HAZMAT.

Fire Prevention and Workplace Hazards

- A. It is the responsibility of all employees to prevent any type of fire in the building.

Listed below is a list of general items to take into consideration to accomplish this objective:

1. Extinguish all cigarettes in their proper place.
2. Do not have an open flame around any type of chemicals, paints, solvents or flammables.
3. Make sure all hand-held torches are extinguished when not in use.
4. Do not put any type of hot objects in trashcans (i.e. cigarette butts).

B. Listing of some workplace hazards

1. Flammable substances
 - a. Paint and paint solvents
 - b. Mineral Spirits
 - c. Alcohol
 - d. Propane, Oxygen, and Acetylene Tanks
 - e. Hydraulic Oil
 - f. Grease
 - g. Gas and Diesel
2. Welding Operations
All welding operations will be done in a confined area unless otherwise instructed by the Collections Superintendent.

Control of Workplace Hazards

- A. All flammable and combustible materials will be stored in a designated area or flammable storage area. All flammable liquids will be stored in a safe location (not to exceed storage limits) or inside a flammable storage cabinet. The cabinet will be grounded. Ventilation of the cabinet will be dependent on the materials stored inside.
- B. **Good housekeeping will be the responsibility of ALL employees.**
 1. Waste materials are to be discarded in their proper places.
 2. Flammable or combustible materials are not permitted to be stored under a stairway or in an area with potential ignition sources.
 3. Floors are to be swept and free of debris.
 4. All aisles and exits will be kept clear.
 5. All areas around fire extinguishers will be kept clear for access.
 6. All employees will know evacuation routes and exits. Route maps will be posted in conspicuous areas of the facility.
 7. All employees will be instructed on the Emergency Action Plan.
 8. Emergency numbers will be posted.

Maintenance of Fire Equipment and Systems

- A. Fire Equipment Inspections
 1. Maintenance Department will conduct monthly inspections of fire extinguishers and emergency equipment locations. Any concerns should be conveyed back to the Safety Coordinator.
 2. An outside safety firm will run annual checks on all fire extinguishers.

APPENDIX

- A. Vehicle Use Acknowledgment Form
- B. OSHA Injury and Illness Incident Report (Form 301)
- C. OSHA Log of Work-Related Injuries and Illnesses (Form 300)
- D. Report of Injury or Illness
- E. Accident Reporting Form (in-house)
- F. Driver's Report of Accident (insurance)
- G. Refusal for Hepatitis B Vaccination
- H. Employee Exposure Incident Report to a Bloodborne Pathogen
- I. Employee Refusal of Post Exposure Medical Evaluation
- J. Lockout Checklist / Safe Startup Checklist
- K. References
- L. Revisions and Amendments
- M. Acknowledgment Form

OSHA's Form 301 Injury and Illness Incident Report

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.



From approved OMB no. 1918-0176

This *Injury and Illness Incident Report* is one of the first forms you must fill out when a recordable work-related injury or illness has occurred. Together with the *Log of Work-Related Injuries and Illnesses* and the accompanying *Summary*, these forms help the employer and OSHA develop a picture of the extent and severity of work-related incidents.

Within 7 calendar days after you receive information that a recordable work-related injury or illness has occurred, you must fill out this form or an equivalent. Some state workers' compensation, insurance, or other reports may be acceptable substitutes. To be considered an equivalent form, any substitute must contain all the information asked for on this form.

According to Public Law 91-596 and 29 CFR 1904, OSHA's recordkeeping rule, you must keep this form on file for 3 years following the year to which it pertains.

If you need additional copies of this form, you may photocopy and use as many as you need.

Information about the employee

1) Full name _____
 2) Street _____
 City _____ State _____ ZIP _____
 3) Date of birth _____/_____/_____
 4) Date hired _____/_____/_____
 9) Male Female

Information about the physician or other health care professional

8) Name of physician or other health care professional _____
 7) If treatment was given away from the workplace, where was it given?
 Locality _____
 Street _____
 City _____ State _____ ZIP _____
 8) Was employee treated in an emergency room?
 Yes No
 9) Was employee hospitalized overnight as an inpatient?
 Yes No

Information about the case

10) Case number from the Log _____ (Transfer file case number from the Log after you send the case)
 11) Date of injury or illness _____/_____/_____
 12) Time employee began work _____ AM / PM
 13) Time of event _____ AM / PM Check if time cannot be determined
 14) What was the employee doing just before the incident occurred? Describe the activity, as well as the tools, equipment, or material the employee was using. Be specific. Examples: "cutting a ladder while carrying roofing materials"; "spraying chlorine from hand sprayer"; "daily computer key-entry";
 15) What happened? Tell us how the injury occurred. Examples: "When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time."
 16) What was the injury or illness? Tell us the part of the body that was affected and how it was affected. Be more specific than "hurt," "pain," or "sore." Examples: "strained back"; "chemical burn, hand"; "carpal tunnel syndrome."
 17) What object or substance directly harmed the employee? Examples: "concrete floor"; "shortcircuit"; "radial arm saw." If this question does not apply to the incident, leave it blank.
 18) If the employee died, when did death occur? Date of death _____/_____/_____

Public reporting burden for this collection of information is estimated to average 22 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this data collection, including suggestions for reducing this burden, to Washington, DC 20543. Do not send the completed form to this office.



TriCo Regional Sewer Utility Employee Report of Injury or Illness

Instructions: Please Print. Fill in all blanks. If a blank does not pertain to your injury or illness, write "N/A" in that blank. When completed, return this form to your supervisor.

Name: _____ **Injury Date** _____

Job Title _____

Supervisor's Name _____ **Department** _____

Date and Time of Injury _____

Description of Injury _____

Task being Performed _____

Name of Witness _____

Was treatment by medical personnel required? Yes/No

If so, Name of Doctor or Hospital _____

How did the injury happen?

What caused the injury?

What could have prevented this injury?

Date and time you first sought medical attention: _____

Were you using the required safety equipment? Yes/No

The information I have provided either in my own writing or verbally for the purpose of this form is true and correct. I understand that providing false or misleading information or omission of information on this report or any other form relating to this claim of injury may result in termination of my employment.

Employee Signature: _____ **Date:** _____

Reader or Interpreter: _____ **Date:** _____

Signature of Witness: _____ **Date:** _____



TriCo Regional Sewer Utility Injury Investigation Report

Supervisor's Name: _____

Basic Rules for Injury Investigation

- Find the cause to prevent future injuries - Use an unbiased approach during investigation
- Interview witnesses & injured employees at the scene.
- Conduct interviews in private - Interview one witness at a time.
- Get signed statements from all involved.
- Take photos or make a sketch of the scene.
- What hazards are present - what unsafe acts contributed to injury?
- Ensure hazardous conditions are corrected immediately.

Date & Time _____ **Location** _____

Tasks Performed _____ **Witnesses** _____

Result (circle one) Injury Property Damage Fatality

Name of Injured _____ **Property Damage** _____

Describe Injury Facts & Events

Supervisor's Root Cause Analysis		<i>Check ALL that apply to this accident</i>	
Unsafe Acts		Unsafe Conditions	
Improper work technique	<input type="checkbox"/>	Poor Workstation design	<input type="checkbox"/>
Safety rule violation	<input type="checkbox"/>	Unsafe Operation Method	<input type="checkbox"/>
Improper PPE or PPE not used	<input type="checkbox"/>	Improper Maintenance	<input type="checkbox"/>
Operating without authority	<input type="checkbox"/>	Lack of direct supervision	<input type="checkbox"/>
Failure to warn or secure	<input type="checkbox"/>	Insufficient Training	<input type="checkbox"/>
Operating at improper speeds	<input type="checkbox"/>	Lack of experience	<input type="checkbox"/>
By-passing safety devices	<input type="checkbox"/>	Insufficient knowledge of job	<input type="checkbox"/>
Protective equipment not in use	<input type="checkbox"/>	Slippery conditions	<input type="checkbox"/>
Improper loading or placement	<input type="checkbox"/>	Excessive noise	<input type="checkbox"/>
Improper lifting	<input type="checkbox"/>	Inadequate guarding of hazards	<input type="checkbox"/>
Servicing machinery in motion	<input type="checkbox"/>	Defective tools/equipment	<input type="checkbox"/>
Horseplay	<input type="checkbox"/>	Poor housekeeping	<input type="checkbox"/>
Drug or alcohol use	<input type="checkbox"/>	Insufficient lighting	<input type="checkbox"/>
Unsafe Acts require a written warning and re-training before the Employee resumes work			
Date		Date	
Re-Training Assigned	<input type="checkbox"/>	Unsafe Condition Guarded	<input type="checkbox"/>
Re-Training Completed	<input type="checkbox"/>	Unsafe Condition Corrected	<input type="checkbox"/>
Supervisor Signature _____		Supervisor Signature _____	

Supervisor _____ Date _____

Director _____ Date _____

Safety Manager _____ Date _____



TriCo Regional Sewer Utility

Supervisor/Employee Accident Reporting

Date of Accident: _____ Time of Accident: **Form** _____ A.M. / P.M.
Address/Location of Incident: _____
Employee Involved (Driver): _____
Employee Position: _____ How Long in Position: _____
Department: _____

If accident is vehicular:	
District Vehicle #	CDL Holder: Yes / No
Vehicle VIN#	
List other employees in vehicle:	

Employee Complete The Following:
Describe how accident occurred:

List cause of accident:

What can be done to prevent similar future occurrences?

What was damaged?

Accident first reported to: _____ Date reported: _____

Were police present at the scene of the accident to obtain a report? Yes / No (circle)

Seat belt in use at time of accident: Yes/No (circle)

Were you injured as a result of accident? Yes / No (circle)

If yes, describe injury type (strain, fracture, bruise, etc.): _____ body part affected: _____

Was anyone else injured as a result of this accident? Yes / No If Yes, provide name and address below:

Name: _____ Address: _____ Phone: _____

Employee Signature: _____ Date: _____



Accident Reporting Form

Supervisor Complete The Following:

Supervisor's account of accident:

Do you feel the employee did everything within reason to prevent the accident? Yes/No

Explain answer:

What immediate action was taken to prevent other occurrences?

Was employee injured as a result of the accident? Yes/No (circle)

If yes, complete the report of accident, injury or illness form

Provide your opinion for the estimated total cost of this accident: \$ _____

Provide your opinion for the estimated cost for repair/replacement of Utility Property: \$ _____

Supervisor's Name (Print)

Supervisor's Signature

Date

Department Head Comments:

Department Head Name (Print)

Department Head Signature

Date

Witness' Statement

Describe in detail what you saw:

What was your location in relation to the accident (ex: 5-6'away,etc.)?

What was the apparent cause of the accident?

Witness Name (Print)

Witness Signature

Date

T:\Employee Information\Accident Reporting Form.doc

DRIVER'S REPORT OF ACCIDENT		
ACCIDENT INFORMATION		
Date of Accident	Time of Accident	
Place Of Accident (street, highway, city, town, state)		
Description of Accident		
WITNESSES (As many as possible)		
Name	Telephone Number ()	
Address		
Name	Telephone Number ()	
Address		
Name	Telephone Number ()	
Address		
POLICE INVESTIGATION		
Were the Police notified?	Police City & State	Precinct
Police Officer's Name	Badge #	Report #
Was anyone cited? No ___ Yes ___ Other Driver ___		

YOUR VEHICLE INFORMATION			
Year	Make	Model	Plate #
VIN #			State
Owner of Vehicle			
Owner's Address			
Driver's Name	Telephone ()		
Address			
Age	Social Security #	Driver's License #	State
Description of Damage			
Location of Vehicle (Name, Phone, Address)			
OTHER VEHICLE INFORMATION			
Driver's Name	Telephone ()		
Address			
Age	Social Security #	Driver's License #	State
Year	Make	Model	Plate #
Owner of Vehicle			Owner's Address
Insurance Company		Policy #	
Description of Damage			
Location of Vehicle (Name, Phone, Address)			

INJURED PERSONS			
Name	Telephone ()	Age	M F
Address			
Injured was _____ In Other Vehicle _____ Pedestrian _____			
Driver _____ Passenger _____ In Other Vehicle _____ Pedestrian _____			
Description of Injury			
Name	Telephone ()	Age	M F
Address			
Injured was _____ In Other Vehicle _____ Pedestrian _____			
Driver _____ Passenger _____ In Other Vehicle _____ Pedestrian _____			
Description of Injury			
DAMAGE TO PROPERTY			
Name	Telephone Number ()		
Address			
Damaged Property		Extent of Damage	
Name	Telephone Number ()		
Address			
Damaged Property		Extent of Damage	

HEPATITIS B VACCINE DECLINATION

I understand that due to my exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis vaccine, at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Signature Date

Printed Name

Note: Maintain this record for the duration of employment plus 30 years.

Confidential: Employee Exposure Incident Report Form

Employee Name _____

Employee Address _____

Infectants Name _____

Infectants Address _____

Exposure incident circumstance (Describe what happened.)

Route of exposure (e.g., needle stick, splash, puncture wound, abraded skin)

Source patient's antibody status

Date of Incident

Signature

Title

Date

Note: Maintain this record for duration of employment plus 30 years.

Confidential: Employee Informed Refusal of Post Exposure Medical Evaluation

I, _____, am employed by _____. My employer has provided me training in Bloodborne Pathogen Policies and the risk of disease transmission sanitary sewer field.

On _____, _____, I was involved in an exposure incident when I (describe incident)

My employer has offered to provide follow-up medical evaluation for me in order to assure that I have full knowledge of whether I have been exposed to or contacted an infectious disease from this incident.

However, I, of my own free will and volition, and despite my employer's offer, have elected not to have a medical evaluation. I have personal reasons for make this decision.

Employee Signature

Name

Address

Date

Witness

Note: Maintain this record for duration of employment plus 30 years.

References

Occupational Safety and Health Standards for General Industry

Today's OSHA: Compliance Update

Safe Work Practices for Wastewater Treatment

Plants American Red Cross Standard First Aid

Comprehensive Loss Management Inc.

Lab Safety Supply Inc.

Creighton University

Town of Schererville

City of Los Angeles

SAFETY MANUAL

ACKNOWLEDGMENT FORM

The primary purpose of this manual is to acquaint you with TriCo's safety rules and policies. It reflects the efforts of many people to establish reasonable, practical and safe work practices to prevent injuries.

All employees are required to comply with the safety rules printed in this manual.

After receiving and reviewing this manual, sign below then tear out this sheet and return it to your supervisor.

Signature Date

