FRANKLIN TOWNSHIP MUNICIPAL SANITARY AUTHORITY

HEALTH & SAFETY MANUAL

Adopted 08/21/2008

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SAFETY MANUAL RECEIPT

This handbook is being provided to you in order to help you work safely. This manual does not assume that every normally accepted safety procedure is included nor that any abnormal or unusual condition may not warrant or require further or additional procedures. Any deficiencies in this manual or other safety procedures that should be included should be brought to the attention of your supervisor or management.

The Authority is making every effort to create safe working conditions and desires that you help in preventing accidents by following these basic safety instructions.

Please acknowledge receipt of this manual by placing your signature and the date you received the manual on the lines below.

Employee Signature

Date

(MUST BE RETURNED TO MANAGEMENT FOR PERMANENT RECORD FILE)

INTRODUCTION

FTMSA Employee:

This handbook is provided to help you work safely. It does not assume that every normally accepted safety procedure is included or that any abnormal or unusual condition may not require additional procedures.

The Authority makes every reasonable effort to create safe working conditions. Your help in preventing accidents by following these basic safety instructions is necessary.

You are reminded that failure to observe all safety rules and policies is subject to disciplinary action up to and including discharge.

Management is committed to reviewing its policies continually. Accordingly, the policies outlined in this handbook are subject to review and change by management at any time. In the event that statements by supervisors are inconsistent with Authority policies, the policies shall govern.

Management

FTMSA STATEMENT OF WORKPLACE SAFETY

It is the policy of the Authority to provide an active workplace Safety & Health Program. The objective of the program is to ensure a safe environment for all employees and visitors as well as to protect Authority buildings, equipment, and other property.

To help attain these goals, some of the "tools" used by management shall include, but are not be limited to:

1. Review safety of Authority buildings and grounds.
2. Reviewing accident reports.
3. Promoting safety awareness throughout the Authority.
4. Implementing required safety programs as mandated by the government.
5. Organizing and/or providing a safety training program for all Authority Personnel.
6. Reviewing appropriate procedures and recommending changes as necessary.

The complete cooperation of all personnel concerning this crucial program is expected.

Manager Date

FTMSA WORKPLACE SAFETY

Goal: It is the goal of the Franklin Township Municipal Sanitary Authority to provide a workplace free from unreasonable risk of injury or disease. Towards that goal, a workplace safety committee is hereby established in accordance with the following terms and conditions.

It is a condition of employment that each employee shall conduct his or her work in a safe and healthful manner.

FTMSA SAFETY POLICY

Area of Responsibility:	All areas where the Authority employees are working.
Job Hazards:	Any situation that could cause an accident to occur that could have been avoided by using good safety work habits.
Protective Equipment:	Appropriate Personal Protective Equipment (PPE) for the job shall be worn at all times.
Purpose:	To ensure that all employees have a safe place to work.

GUIDELINES:

FTMSA's Commitment

The health and well-being of every employee, customer, and resident near FTMSA's facilities is of vital importance. The active participation of the Authority and all of its employees is necessary to make the safety program a success.

FTMSA's primary goal is to decrease the number of safety related accidents, injuries, and losses at its facilities and work sites.

FTMSA shall endeavor to comply with pertinent state and federal laws and regulations concerning occupational health and safety.

FTMSA strongly maintains that the best source of protection for the health and safety of the work force is the individual employee.

FTMSA requires employees to follow all health and safety policies and procedures.

FTMSA shall strive to protect the health, safety, and security of all employees, using accepted and feasible procedures. It recognizes its responsibility to protect the health and safety of the general public near its facilities.

FTMSA maintains, however, that occupational health and safety policies must be balanced by an appreciation of economic technological constraints. The Authority does not believe that it is practical or even possible to eliminate every health or safety risk in the workplace.

Conditions of Work – Employees are the foundation of FTMSA's health and safety policy. It is a condition of employment that each employee shall conduct his or her work in a safe and healthful manner.

Workers' Compensation – FTMSA shall comply with all workers' compensation laws of the State of Pennsylvania. All employees are accountable for keeping workers' compensation claims to a minimum.

Authority Property – Each employee is directly responsible for the proper care of the Authority property, equipment, and vehicles place in his or her charge either temporarily or permanently. Such property shall be used in a safe and proper manner. Employees should realize that regular maintenance is essential to the safe use and long-term operation of Authority equipment and vehicles.

Protective Equipment – Employees are required to wear all appropriate protective equipment at the proper times and in the proper environments. Failure to wear required protective equipment is cause for disciplinary action. The Authority is legally and morally bound to make sure each employee complies with this policy. Supervisors shall strictly enforce this policy.

GENERAL SAFETY RULES

1 If you are injured, you must obtain first aid treatment and report it to management as soon as possible.

2. If you have an accident, you must report the accident to management.

3. Approved personal protection equipment (PPE), such as eye protection, head protection, foot protection, hearing protection, etc., must be worn by all employees working at or near hazardous conditions or possible hazardous conditions. Certain areas may be designated, by the posting of appropriate signs or listed in the safety manual, as hazardous areas requiring the use of specific personal protection equipment. It will be mandatory to wear the proper equipment in those areas.

4. Back injuries are serious to the employee and the Authority and every effort is to be taken to prevent them. All employees are to learn and use the Lifting Procedures found in this Safety Manual.

5. Never operate, adjust or repair in any way any machinery or equipment for which you have not been thoroughly instructed on the proper procedures. If there is any area of doubt, consult your supervisor for instruction and authorization.

6. Be absolutely sure no one including yourself is in a position to be injured before changing the settings on any electrical, gas, steam, air or water machinery/equipment in motion or in use. Be absolutely sure no one including yourself is in a position to be injured when turning on equipment that you just changed the settings on.

7. All safeguards on equipment and tools shall be in good condition and in place before and during use. Removal of safeguards for maintenance purposes shall only be performed by trained maintenance personnel.

8. Check all tools and equipment before using them. If any defects are found, do not use them and report the defects to your supervisor.

9. Good housekeeping is the responsibility of every employee. Keep your work area neat and clean at all times and report any hazardous conditions to your supervisor.

10. Stay clear of working machinery and be particularly careful in handling material.

11. For those driving an Authority vehicle, a safety check of the vehicle should be done prior to operation.

12. The driver of an Authority vehicle must be in possession of a valid operator license at all times when operating Authority equipment and must present the license for inspection when requested to do so. The employee must be fully qualified to operate the size and type of vehicle or equipment. The employee must inform management of any change in the status of their operator license.

13. The transporting of unauthorized passengers in Authority vehicles is prohibited and is subject to disciplinary action.

14. Drinking alcoholic beverages, using illegal drugs, and/or the possession of alcohol or drugs while at work or being under the influence while operating an Authority owned vehicle shall be subject to disciplinary

action.

15. The use of seat belts by the driver and all passengers of motor vehicles is required.

SAFETY ORIENTATION & TRAINING

All new employees will be given a safety orientation by their supervisor during their first week of work.

This orientation shall include:

1. An explanation of the Safety Policy and Practices of the Authority.
2. Emphasis on the responsibility of the employee for their own safety and the safety of others.
3. Furnishing of a copy of the Authority Safety Manual.
4. Instructions to review the safety regulations and to consult their supervisor with any questions.
5. Encouragement to report any unsafe conditions to management.
6. An explanation of the availability and use of safety equipment and necessary training in its use.
7. The execution of a statement by the employee that he or she has been given the initial safety orientation and training and a copy of the Authority Safety Manual.
8. A discussion of required personal protection equipment.
9. A discussion of employees' rights and responsibilities under The Worker and Community Right To Know Act.

a. Information and training on hazardous chemicals in the work areas shall be provided.

b. The information and training shall commence prior to an employee's initial assignment. Additional instruction shall be provided whenever chemicals or processes change or newly acquired information indicates the need for additional protective measures.

BLEACH LIQUOR **Sodium Hypochlorite**	Issued:	Revised On:
	Last Review Date:	Next Review Due:

BLEACH-BLEACH LIQUOR
(Sodium Hypochlorite)

Toxicity

Sodium Hypochlorite is a pale green liquid, and has a disagreeable, sweet odor, It is corrosive to skin and mucous membranes. Decomposition of Sodium Hypochlorite releases toxic Chlorine fumes.

Upon decomposition by heat or chemical reaction the release of Chlorine gas has a Threshold Limit Value of 1 ppm in air.

First Aid

In event of physical contact with Sodium Hypochlorite, rinse affected area with copious amounts of fresh water then contact a physician.

Precautions for the Handling and Storage

1. Sodium Hypochlorite is dangerous when heated or when it comes into contact with acid, acid fumes, and/or organics. Decomposition also occurs with age and light. Store in cool areas away from sunlight.
2. The local exhaust system should be effective in a confined area.
3. For hand protection, rubber gloves should be worn.
4. Approved chemical safety goggles and face shield should be worn to protect the eyes and face.
5. Other protective equipment should include aprons and boots.

Spill or Leak Procedures

In event of a spill or a leak, rinse area with copious amount of water (preferably cold). Adequately diluted, the product can be introduced into the municipal waste system. Notify management if the quantity is to be large. Contact authorities before introduction into ponds, lakes, rivers, or other public water.

CALCIUM HYDROXIDE	Issued:	Revised On:
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CALCIUM HYDROXIDE
(High Calcium Hydrated Lime)

Toxicity

Calcium Hydroxide is a noncombustible soft, white crystalline powder, Exposure can cause skin burns or skin irritation, especially to a perspiring person. Eyes and open cuts are particularly vulnerable.

The Threshold Limit Value has been established at 10 mgms Cu.M.

First Aid

In case of skin burns or irritation, wash with water (and soap if available). For eyes, flush immediately with plenty of water and consult a physician.

Precautions for the Handling and Storage of Calcium Hydroxide

1. Keep away from acids and acid fumes.
2. For respiratory protection in dusty locations, NIOSH MESA approved respirators should be vented to a collector.
3. Mechanical ventilation should be adequate to keep the dust level below the TLV. The dust should be vented to a collector.
4. For hand protection, work gloves should be worn for manual handling.
5. Tight fitting safety goggles should be worn for eye protection.
6. For additional s kin protection, a long-sleeved shirt with a buttoned collar, long pants extending over the work shoes, and protective cream on all other exposed skin area should be worn.

Spill or Leak Procedures

Any Calcium Hydroxide that is spilled can be salvaged for use, sewered, or removed to a dump or landfill.

CHLORINE	Issued:	Revised On:
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CHLORINE

Toxicity

Chlorine is a severe irritant rather than a specifically toxic agent. However, a concentration of chlorine can be fatal as a result of pulmonary edema.

The intense odor and immediate irritations caused by chlorine make it easily identifiable. Removal from the vapor should be instantaneous.

Liquid chlorine causes severe irritation and skin blistering.

First Aid

1. Remove exposed person immediately from the contaminated area.
2. Position the person on his back with the head elevated. He should be kept warm and as quiet as possible.
3. Call for immediate medical attention. Serious after effects may be delayed so 24 hour observation should be maintained.
4. In mild cases resulting in throat irritation, milk can provide some relief.
5. If breathing has ceased, CPR should be started immediately. The administration of inhalation oxygen, air, or positive pressure oxygen breathing can be helpful.

Precautions for the Handling and Storage of Chlorine

Chlorine is supplied commercially as a liquid under pressure in cylinders and larger containers. The handling of containers should be no different from that of compressed gas cylinders.

1. Chlorine storage should be assigned to a permanent area which is dry, cool, well-ventilated, and preferably fire-resistant. Excessive temperatures should be avoided and storage should be away from any source of heat.
2. Storage areas should comply with local and state regulations.
3. All personnel working with Chlorine should be educated in the proper method of Chlorine handling, the use of a gas mask, and emergency procedures.
4. Gas masks, an instant-acting safety shower, and an eye wash bath should be

available near all probable areas of contamination. Gas masks should be those designed for Chlorine and approved by the U.S. Bureau of Mines.

5. Any work with Chlorine should only be done in a well-ventilated area.

6. Open cylinder valves slowly. The use of large wrenches (longer than 6") or pipe wrenches will damage the valve. One quarter turn of the valve stem in a counterclockwise direction opens the valve sufficiently to permit maximum discharge.

7. The amount of Chlorine remaining in a cylinder should be determined by weight. The cylinder pressure will remain constant as long as liquid remains in the cylinder.

8. The content of the cylinders containing non-liquefied gases is determined by gauge pressure.

9. When returning empty cylinders, close the valve before shipment, leaving some positive pressure in the cylinder. Mark or label the cylinder EMPTY. Do not store full and empty cylinders together.

Handling Leaking Containers

In the event a Chlorine cylinder, large container, or system develops a leak, contact the suppler at once.

The Chlorine Institute gives the following recommendations:

1. Locate and correct the condition promptly.
2. Keep on the windward side of the leak and higher than the leak.
3. Permit only authorized, trained personnel equipped with gas masks to investigate. Keep all other persons away from the affected area.
4. If the leak is extensive, try to warn all persons in the path of the vapors.
5. Do not apply water to a Chlorine leak. A mixture of water and Chlorine may increase the rate of corrosion and possibly increase the leak.
6. If ever in doubt, call the supplier for information.

SPECIAL CAUTION

1. Employees whom are in proximity to chlorine usage or storage areas should avoid the use of contact lenses because of special danger to the eye in the event of exposure to significant amounts of chlorine gas.
2. Employees who may be required to use gas masks and/or special breathing apparatus during a chlorine emergency should take care to be clean shaven to permit proper seating of the face mask during use in a chlorine environment.

ELECTRICAL EQUIPMENT	Issued:	Revised On:
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ELECTRICAL EQUIPMENT SAFETY RULES

1. Safety checks of electrical receptacles, plugs and appliance cords must be performed regularly. Frayed cords, worn plugs and faulty receptacles are a major source of electrical fires and shocks. All defective electrical equipment observed by any employee should be reported to their supervisor.
2. Portable electric power tools shall be provided with a suitable grounding device for attachment to ground or a 3 wire cord and polarized plug. This does not apply to double insulated electric power tools.
3. Portable electric power tools should be hoisted by rope, not by extension cord. Tools must not be thrown from one location to another. Do not remove safety guards from power tools. Use tools only for the purpose for which they are intended.
4. Use goggles, masks, shields, or other prescribed face and eye protection when engaged in welding, grinding, torch cutting, or chipping or when exposed to dusts or flying materials of any kind.
5. All electrical installations shall be made by a qualified electrician in a workmanlike manner and shall be designed, constructed, installed, maintained and identified such that the hazard will be reduced as reasonably as possible.
6. Wiring enclosures and equipment in locations exposed to rain, water, oil, steam, vapors, or similar deteriorating conditions shall be protected by design or method of installation.
7. Switches, circuit breakers, fuses and other protective devices have been installed to protect the equipment and the employee from the results of overloading and no action shall be taken to intentionally bypass these protective devices or to subject equipment to electrical loads higher than their designed capacity.
8. When it is necessary for any employee to come in contact with any un-insulated electrical conductor, rubber gloves with approved protectors (leather gloves over rubber gloves) must be worn. The employee shall personally inspect each rubber glove for defects, cuts or abrasions and give an air test before each use.
9. Marks of identification on electrical operating equipment must not be painted over, defaced or removed.
10. Suitable insulated platforms or rubber mats shall be placed at pumps and motor control centers on which any wire or appliance carries a potential in excess of 300 volts.
11. When working on or near energized circuits, always place yourself in a position so that loss of balance or slip will not tend to bring you in contact with live wires.

12. Treat all electrical circuits as though they were LIVE.
13. Lock out all controls and switches before beginning repairs or maintenance on all electrical equipment or machines.

REMEMBER

There is no such thing as being "almost right".

When dealing SAFELY with ELECTRIC POWER. An electrical procedure or installation is either "Safely" RIGHT or "DEAD" WRONG.

FIRST AID & MEDICAL SERVICE	Issued:	Revised On:
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FIRST AID & MEDICAL SERVICE SAFETY RULES

1. FTMSA encourages every employee to become trained in the administration of first aid and cardio-pulmonary-resuscitation (CPR).
2. First aid supplies shall be conveniently and conspicuously stored. Authority vehicles will be equipped with first aid supplies. Any deficiencies in first aid supplies should be reported to your supervisor.
3. Where the eyes or body of any person may be exposed to injurious or corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for emergency use.
4. Whenever any injury occurs, regardless of how minor it may be, the employee shall report to their supervisor for medical assistance. This procedure assures the employee of maximum protection against infection or other complications. It also provides a record that is helpful in locating and eliminating unsafe conditions and practices.
5. The injured employee should immediately seek first aid and management should be advised of the injury.
6. Immediately after first aid or medical treatment is completed, an accident report should be filled out.
7. Management will investigate the accident and determine the proper corrective procedures.

LADDER POLICY	Issued:	Revised On:
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LADDER SAFETY RULES

All portable wood or metal ladders used at various locations should be inspected on a semi-annual basis and remedial action taken in the event of faulty or unsafe ladder rungs, braces, etc.

Any ladder assigned to a definite location for storage shall have some method for storing the ladder. Preferably, a ladder should be stored in an upright position and secured by means of a wall bracket or chain fastener.

General precautions for the safe use of ladders are as follows:

1. You shall select the proper size and type of ladder for the job.
2. You shall inspect the ladder prior to use.
3. You shall tie-off or have the ladder held by another person when working from a ladder.
4. Do not use a ladder as a platform, runway, or scaffold.
5. You shall make sure the feet of the ladder are firmly and evenly supported. Use safety ladder feet when necessary.
6. Do not place ladder on boxes or other insecure objects to gain additional height.
7. You shall be sure the legs are fully spread and the spreader is locked in setting up a step ladder.
8. You shall use the 4 X 1 rule – Place the base of the ladder a distance of ¼ the length extended
9. You shall always face the ladder when ascending or descending.
10. Do not stand on the top or next to the top step of a ladder as this is an unstable position.
11. Do not overreach - move the ladder to the work.
12. You shall use the belt buckle rule when reaching – ***If your belt buckle crosses the siderails of the ladder when you are reaching, you are reaching too far.***
13. Do not overload the ladder by carrying heavy objects up or down the ladder.
14. Do not lay or leave items on the ladder.
15. You shall consider the placement of proper warning signs, traffic patterns and hard hat warnings where applicable.
16. You shall limit one person to the ladder at any one time.
17. You shall frequently lubricate metal bearings of locks, wheels, pulleys, etc.
18. You shall keep rungs free of grease and oil.

19. Do not splice short ladders together to provide long sections.
20. Do not use ladders as guys, braces or skids, or for other than their intended purpose.
21. Do not place ladders in front of doors opening toward the ladder unless the door is blocked, locked, or guarded.
22. Do not use metal ladders when performing electrical work.
23. If the ladder you used is found unsafe or breaks; you shall cut the ladder and dispose of it. Do not leave it for someone else to use and get hurt on.

Be as careful when using a 4 foot ladder as you would a 30 foot extension ladder. Do not be lulled into a sense of false security just because the ladder is low. A fall from any height may be fatal.

LIFTING & BODY MECHANICS	Issued:	Revised On:
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LIFTING AND BODY MECHANICS TECHNIQUE

The following safety rules can prevent hand injuries when lifting materials:

1. Inspect materials for splinters, slivers, jagged edges, burrs, rough or slippery surfaces.
2. Use hand protection if necessary and if feasible.
3. Get a firm grip on the object.
4. Keep fingers away from pinch points, especially when setting down materials.
5. When handling lumber, pipe, or other long objects, keep hands away from the ends to prevent them from being pinched.
6. Wipe off greasy, wet, slippery, or dirty objects before trying to handle them.
7. Keep hands free of oil and grease.

Preventing back injuries is a lot easier than correcting them.

Most strains and back injuries occur when lifting and setting down objects by hand. It is important to know and practice proper lifting techniques.

1. Consider the size, weight and shape of the object to be carried
2. **Do not lift more than can be handled comfortably. When in doubt, always get help.**
3. Set feet solidly. Feet should be far enough apart to provide good balance and stability.
4. Get as close as possible to the load. Bend legs about 90 degrees at the knees. Crouch, do not squat. It takes twice as much effort to get up from a squat.
5. Keep the back as straight as possible. Bend at the hips, not at the middle of the back.
6. Grip the object firmly.
7. Straighten legs to lift the object and, at the same time, bring the back to a vertical position.

8. Never carry a load that you cannot see over or around.
9. Never turn the waist to change direction or when putting an object down - instead move your feet.

OFFICE SAFETY	Issued:	Revised On:
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OFFICE SAFETY RULES

Procedures for office safety should be enforced as rigidly as in any other work area. The following areas of concern will be inspected on a regular basis. Remedial action for any deficiencies should be immediate.

1. FLOORS - no tripping hazards, non-slippery.
2. AISLES and STAIRS -unobstructed and adequate, clear passing space.
3. GLASS DOORS - conspicuous to everyone including visitors.
4. ADEQUATE LIGHT - all fixtures are working and illuminating properly.
5. ELECTRICAL - no frayed cords, all receptacles in good condition, no shock hazards.
6. MATERAIL STORAGE - files stored properly, books in proper book cases and no piling.
7. OFFICE FANS - front and back guards in place and in good condition.
8. FIRE EXTINGUISHERS - conspicuously located, maintained in a fully charged and operable condition. Kept in their designated places at all times when not in use.
9. EMERGENCY PLANS - to include medical treatment and evacuation. Should be posted in obvious places throughout the office area.
10. CHAIRS - in good condition, legs should be sound, rollers operative to prevent tipping.
11. FILE CABINETS - Care for to prevent tipping over.
12. DRAWERS & DOORS - File cabinet drawers and other doors kept closed when not in use.

OXYGEN DEFICIENCY	Issued:	Revised On:
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OXYGEN DEFICIENCY

One of the more hazardous conditions in a wastewater facility is that of oxygen deficiency. Normal air contains about 21 percent (by volume) oxygen and 79 percent nitrogen. Any atmosphere containing less oxygen is called an oxygen-deficient atmosphere. When the oxygen level drops to 12 percent or less it may be fatal.

Basically, oxygen deficiency is the result of poor ventilation. Oxygen deficiency may occur by the displacement of air by some other gas. Oxygen deficiency also may occur because of the absorption, consumption, or bio-chemical depletion of the available oxygen as a result of the decomposition of organic matter.

Oxygen deficiency in treatment plants occurs primarily in manholes, in tightly covered pits or tanks regardless of depth, and in poorly ventilated rooms or basements where digested sludge spillage has occurred. It also may occur in partially emptied digesters, structures containing sludge gas piping, or appurtenances that may be leaking.

Safe practice requires an awareness of the potential problem, detecting the existence of oxygen deficiency, and proper ventilation to restore a normal atmospheric condition.

If there is no assurance of ample oxygen, an oxygen deficiency detector must be used to sample and test the conditions before entry.

Correction of oxygen deficiency includes ample ventilation and removal of noxious gases if present. In rooms or structures, ventilation may be secured by opening doors or windows or through the operation of fans. Ventilation may be secured with compressed air or portable air blowers.

The following areas are potential oxygen deficiency areas:

1. Pits
2. Tanks
3. Manholes

PERSONAL HYGIENE	Issued:	Revised
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PERSONAL HYGIENE

Wastewater and its by-products are potential hazards to treatment plant personnel. The hazards include the water-borne diseases such as typhoid fever, paratyphoid fever, dysentery, infectious jaundice, hepatitis, and the danger from tetanus. The best defense against infection is the practice of good personal hygiene. The following safety guides should be observed whenever working around wastewater:

1. Hands and fingers should be kept from the nose, mouth, eyes and ears.
2. Rubber gloves should be worn when cleaning pumps, handling wastewater, screenings, sludge, or grit, or for other work in which an employee comes into direct contact with untreated wastewater or sludge.
3. Gloves always should be worn when hands are chapped or burned or when the skin is broken for any reason.
4. Before eating or smoking, and after work, the hands should be washed thoroughly with soap and hot water.
5. Fingernails should be kept short, and foreign material should be removed from the nails with a stiff soapy brush.
6. All cuts and scratches must be reported and be given first aid treatment.

PORTABLE FIRE EXTINGUISHERS	Issued:	Revised On:
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PORTABLE FIRE EXTINGUISHERS

1. Fire extinguishers shall be provided for the protection of both the building structure, if combustible, and the hazards contained therein.
2. Portable fire extinguishers shall be maintained in a fully charged and operable condition, and kept in their designated places at all times when they are not being used.
3. Extinguishers shall be conspicuously located and marked where they will be readily accessible and immediately available in the event of a fire.
4. Where visual obstruction cannot be completely avoided, means shall be provided to indicate the location and intended use of extinguishers.
5. Extinguishers shall be installed on the hangers or in the brackets supplied, or mounted in cabinets unless the extinguishers are of the wheel type.
6. Extinguishers having a gross weight of less than 40 pounds shall be installed so that the top of the extinguisher is not more than 5 feet above the floor. Extinguishers having a gross weight greater than 40 pounds shall be so installed that the top of the extinguisher is not more than 3-1/2 feet above the floor.
7. Extinguishers shall be suitable for use within a temperature range of 40° to 120° Fahrenheit. When extinguishers are installed in a location subjected to temperatures outside this range, they shall be of a type approved or listed for the temperature to which they will be exposed.
8. The number of fire extinguishers needed to protect a property shall be determined according to the area and arrangement of the building or occupancy, the severity of the hazard, the anticipated classes of fires, and the distances to be traveled to reach extinguishers.
9. Any extinguishers showing defects shall be given a complete maintenance check and replaced if necessary to correct the defects.
10. At regular intervals, not more than one year apart or when specifically indicated by an inspection, extinguishers shall be thoroughly examined and recharged, repaired or replaced as needed.
11. Extinguishers removed from the premises to be recharged shall be replaced by spare extinguishers during the period they are gone.
12. If, at any time, an extinguisher shows evidence of corrosion or mechanical failure, it shall be subjected to hydrostatic pressure test, or replaced.

SAFETY EQUIPMENT	Issued:	Revised On:
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SAFETY EQUIPMENT RULES

Types of safety and protective equipment used in wastewater facilities will vary depending on the particular situation and task. In all cases, the instruction furnished with the safety equipment should be reviewed and used as it pertains to the individual piece of equipment.

Detailed instructions on the use of safety equipment should be included in the wastewater facility rules and procedures.

The amount of equipment will depend on size of the system, number of employees, process, and procedural methods.

1. Portable fresh air blower and large diameter, flexible hose for ventilation of manholes, sewers, wet or dry wells, or enclosed areas;
2. Atmospheric testing equipment to identify oxygen deficiencies and explosive, toxic, and combustible gases;
3. Hydrogen sulfide detector;
4. Carbon monoxide detector;
5. Self-contained air breathing apparatus for each person going underground;
6. Inhalator and resuscitator;
7. First aid kits;
8. Explosion-proof portable lights;
9. Safety harness and life lines;
10. Appropriate safety kits for facilities with chlorination;
11. Protective clothing, including safety goggles, face shields, hard hats, gloves, rubber boots, safety shoes, and rain gear.

All personnel must understand use of the safety equipment, and know when each piece of equipment should be used.

SAFETY SIGNS	Issued:	Revised On:
	Last Review Date: :	Next Review Due: :

SAFETY SIGNS

The Authority will post various signs in its plants, all remote facilities, offices, laboratory and shop areas. These are generally signs of warning and are not to be disregarded. The signs are to be placed in areas where there are potential hazards or possible unsafe conditions.

The intent is to illustrate to employees, as well as visitors, the importance of safe working conditions.

As many hazards as can be determined will be pointed out, but as is often the case, many other dangers are undetected. It is the responsibility of the employee to point out anything he or she feels is detrimental to their own safety or that of others to management.

While it is not possible to individually describe every hazardous area to every employee or visitor, safety signs should be posted as appropriate warnings, thus eliminating as many potential injuries as possible.

Classification of Signs According To Use:

1. **DANGER SIGNS** - Danger signs should be used only where an immediate hazard exists. All employees shall be instructed that danger signs indicate immediate danger and that special precautions are necessary.
2. **CAUTION SIGNS** - Caution signs shall be used only to warn against potential hazards or to caution against unsafe practices. All employees shall be instructed that caution signs indicate a possible hazard against which proper precaution should be taken.
3. **SAFETY INSTRUCTION** - Safety instruction signs shall be used where there is a need for general instructions and guidance signs relative to safety measures.
4. **WARNING LABEL** -Any Hazardous Material shall have a listing of the basic warnings, first aid, fire, spills, handling and storage, and disposal characteristics of the material.
5. **MSDS BOOKS** -In addition to the warning labels on Hazardous Materials, for each Hazardous Material there is a Material Safety Data Sheet available to the employee at the work area. The MSDS will give the chemical identification,

hazardous ingredients, physical data, fire and explosion data, health hazards, reactivity data, spill and leak procedures, special protection and special precautions. Items 4 and 5 are outlined in more detail in the "Right To Know" section.

CHEMICAL SAFETY & STORAGE	Issued:	Revised On:
	Last Review Date:	Next Review Due:

CHEMICAL SAFETY AND STORAGE

Unit/Area of Responsibility: Plant-wide (WTTP) and Street service work

Job Hazards: Each chemical has its own kinds of hazards. It is the employee's responsibility to know what the hazards are by reading the MSDS sheets provided by Safety First Authority.

Protective Equipment: As dictated by the MSDS

Purpose: This policy explains what an employee should be aware of when working with hazardous chemicals

GUIDELINES:

A. Identify the Hazard you are/will be working with

1. Categories of Hazardous Chemicals

a. Corrosive
b. Flammable
c. Toxic
d. Reactive
e. Biological (Infectious)
f. Carcinogen (Cancer-causing)

2. Physical States of Hazardous Materials

a. Liquid
b. Solid
c. Gas
d. Vapor

3. Routes of Exposure

a. Inhalation
b. Ingestion
c. Absorption
d. Injection

4. Incompatible Chemicals

a. Flammables and oxidizers
b. Flammables and ignition source
c. Acids and cyanides
d. Strong acids and strong alkalines
e. Concentrated acids and water
f. Organic solvents and corrosives
g. Corrosives and other reactive materials

B. Procedures for working with/around, handling, or transporting hazardous wastes

1. Handling of Flammable Chemicals
2. General precautions for storing and handling flammable liquids in small quantities are as follows:

a. Flammable liquids should never be stored in open or glass containers.
b. Flammable liquids should be stored in OSHA/NFPA approved cabinets.
c. Only UL/FM approved safety cans should be used for quantities up to five gallons.
d. Safety cans/cabinets will be made available upon request.
e. Do not handle flammable liquids in the vicinity of an open flame or any other source of ignition.
f. Flammable liquid waste should not be run into a sink drain or sewer, but should be emptied into a disposal can for later handling.
g. Flammable liquids are considered a hazardous material and shall be properly labeled.
h. Safety cans shall have a spring-closing lid and spout cover and be so designed that it will safely relieve internal pressure when exposed to heat or fire.
i. Store cans in uncluttered areas, free from debris and congestion.
j. Keep containers closed when not in use.
k. Clean up spills and dispose of waste properly.
l. Handle Chemicals Properly.
m. Proper Storage of Flammable Chemicals.
n. Ensure that storage areas meet regulatory requirements.
o. Replace all bung caps with drum vents after receiving containers.
p. Ground all drums properly.
q. Store quantities in approved storage rooms and cabinets
r. Store only in small quantities

C. Helpful hints to dealing with hazardous chemicals

1. General Safety Tips

a. NEVER eat, drink or smoke while using hazardous chemicals

b. USE Personal protective equipment (PPE) as required
c. Make sure ALL chemical containers are properly labeled
d. ALWAYS wash up after using chemicals
e. NEVER smell or taste a chemical to Identify it
f. KNOW all emergency procedures and equipment
g. ALWAYS read labels and MSDS's prior to use
h. Store ALL hazardous chemicals properly
i. ALWAYS use hazardous chemicals properly
j. ALWAYS use hazardous chemicals as intended

D. **Signs and Symptoms of Overexposure**

1. Symptoms of Possible Overexposure
2. Eye discomfort
3. Breathing difficulties
4. Dizziness
5. Headache
6. Nausea
7. Vomiting
8. Skin irritation

EVACUATION PLAN	Issued:	Revised On:
	Last Review Date: :	Next Review Due:

EVACUATION PLAN

Unit/Area of Responsibility: Plant-wide (WTTP)

Job Hazards: Hazardous gases or situations which could cause a need for Plant Evacuation

Purpose: To outline a systematic and orderly plan for evacuating the entire WTTP in the event of a hazardous situation or disaster whenever an emergency occurs or is imminent.

GUIDELINES:

A. Evacuation Principles

1. Ensure to leave WTTP in a safe condition
2. All Areas of operation will be secured in an orderly manner
3. Communications will be internal telephone, cell phones and 2 way radio.
4. These orders will be directed by Management

B. Internal and External Communication

1. FTMSA has it own radio band with a base radio
2. Every vehicle has a 2-way radio
3. Internal phone/paging system

C. External Communication

1. Every office has a telephone
2. Personnel with cell phones
3. Personnel with pagers

EYE PROTECTION	Issued:	Revised On:
	Last Review Date:	Next Review Due:

EYE PROTECTION

Unit/Area of Responsibility: All Safety First Authority facilities and work sites where a risk of eye injury exists.

Job Hazards: Eye Injury

Protective Equipment: Approved shatterproof safety glasses, safety goggles and face shields that comply with ANSI Z87.1 - 1989 standards.

Purpose: To protect the eyes of all personnel who work in hazardous situations where the eyes could be injured. Protection from hazardous work situations include but are not limited to:

- Where there are flying chips or particles present.
- When you work with Chemicals, acids or caustics.
- When there is electrical arching or sparks.
- When working with Molten Metal.
- When there are hazardous chemical gases or vapors present.
- When there is harmful light from welding, cutting, brazing or soldering.
- Where there are dust particles.
- Where there are swinging objects.

GUIDELINES:

A. Authority Employees

1. Must wear Basic Eye Protection in all areas where a risk of eye injury exists.

a. This would include chemical mixing, handling and application areas, work generating flying debris, and entering or looking into manholes where air bags or flush equipment are in use.
b. Basic eye protection is considered to be spectacles or goggles with approved safety glass lenses and safety frames.

2. Safety glass areas should be identified by a caution sign stating:

Caution
Safety Glasses Must Be Worn In This Area

3. Additional eye protection is required when performing work such as welding, grinding, chipping, burning, handling of chemicals, etc.
4. Work which may involve high frequency power sources, high voltage discharge, ultraviolet or infrared sources, pouring lead, or other similar situations, requires different eye protection.

B. Eye Protection shall meet the following minimum requirements:

1. They shall provide adequate protection against the particular hazards for which they are designed.
2. Safety Goggles should be reasonably comfortable and fit snugly to keep out dust and splashes when worn under the designated conditions.
3. If prescription glasses are worn the safety glasses should fit comfortably over prescription glasses without disturbing the proper position of the prescription or protective lenses.
4. They shall be durable.
5. They shall be easily cleanable.
6. Protectors should be kept clean and in good repair.
7. The elastic bands should be flexible, not stretched out, knotted, twisted or worn out.
8. Persons whose vision requires the use of corrective lenses shall have access to goggles which can be worn over the corrective spectacles.

A person's eyesight is irreplaceable.
All procedures **WILL** be followed
to protect your eyes

Foot Protection

Issued: **Revised on:**

Last Review Date: **Next Review Due:**

Unit/Area of Responsibility:	All FTMSA facilities and work areas except administrative offices.
Job Hazards:	Foot Injuries
Protective Equipment:	Steel toed work boots
Purpose:	In order to protect your feet, toes and ankles from activities that may be hazardous to you feet, steel toed work boots are required to be worn in all Authority facilities and work areas except the Administrative Office.

GUIDELINES:

1. Must wear steel toed work boots.
2. The maximum allowance for shoe reimbursement as outlined in the collective bargaining agreement for eligible employees.
3. Failure to wear steel toed work boots may subject the employee to disciplinary action.
4. Sneaker safety shoes are unacceptable therefore reimbursement will not be given.

HEAD PROTECTION

Issued: **Revised on:**

Last Review Date: **Next Review Due:**

Unit/Area of Responsibility:	Treatment Plant and Street service work.
Job Hazards:	Head injuries
Protective Equipment:	Class E-G Hard Hats
Purpose:	A Class E-G hard hat is recommended throughout any plant and pumping station processes because it offers the most electrical resistance, in addition to providing the necessary impact protection. Hard hats should be worn in the following areas:

- Everywhere there is open grating above.
- Whenever work is performed overhead.
- Street service work (Vactors, Bucket Machines, Cranes, Bypass pumping, excavations, etc.)
- All confined space areas.
  a. Working in tanks
  b. Working in manholes or ditches.
- Wet wells

GUIDELINES:

A. Authority Employees

1. Must wear Class E- G hard hats as designated above.

a. Hard hats must be worn with the bill in front, as designed, to receive the maximum protection afforded by the hat.
b. The suspension is designed to be worn without a liner or only with liners designed for this purpose. Other types of headwear may not be worn under the hard hat (i.e., baseball caps, etc.) as they negate the proper functioning of the suspension.
c. All personnel should periodically inspect their hat for signs of decay, cracks, chips, holes and wear. Any of these could diminish the protection capacity of the hat, and if detected, the hat should be replaced.
d. Approved self-adhesive stickers for individual users to "personalize" their hard hats for identification purposes are common. Adhesive stickers should be placed

at least ¾" away from the edge of the helmet.

e. Engraving identification data on the underside of brim is permitted (if approved by the manufacture) but engraving must be restricted to the brim area. Engraving on the shell of the hat will adversely affect the helmet's performance.

HEARING PROTECTION

Issued: **Revised on:**

Last Review Date: **Next Review Due:**

Unit/Area of Responsibility:	Plant-wide and street service work where the employee is exposed to noise at or above the 8 hour weighted average of 85 decibles.
Job Hazards:	Loss of Hearing of employees who are exposed to over 85 decibles for over an 8 hours period of time.
Protective equipment:	Ear Plugs
Purpose:	To prevent hearing loss of employees by providing hearing protection devices. Hearing protection should be worn when in the sludge thickening room.

GUIDELINES:

Hearing protection will be provided by the Authority.

HOT WORK

Issued: **Revised on:**

Last Review Date: **Next Review Due:**

Unit/Area of Responsibility: All FTMSA facilities and work areas where welding, burning or grinding will take place.

Job Hazards: Fire

Equipment: A B C Fire Extinguisher

Purpose: To ensure that no fires will be ignited while using welding, burning or grinding equipment.

GUIDELINES:

Have an A B C fire extinguisher available in areas where welding, burning or grinding occur.

MOTOR VEHICLES OPERATION	Issued:	Revised On:
	Last Review Date	Next Review Due:

MOTOR VEHICLE OPERATIONS

Unit/Area of Responsibility: Plant-wide (WTTP) and Commercial Street.

Protective Equipment: Seat belt.

Purpose: To ensure that all Safety First Authority employees perform responsibly and professionally while operation a company vehicle.

Guidelines:

Motor Vehicle Operation

Most employees of the Authority will probably at sometime have reason to operate a Authority owned vehicle. Whatever the purpose for operating an Authority owned vehicle, the operator should strictly obey all traffic laws and all traffic signs. The application of the defensive driving tactics will prevent many accidents from happening.

While operating an Authority vehicle the driver is responsible for its care. At no time, unless in case of emergency, will an unauthorized or non-employee be permitted to operate the vehicle.

All accidents must be reported promptly and correctly to management and to the proper legal authorities.

The possession and/or use of alcoholic beverages and illegal drugs are strictly prohibited while using an Authority owned vehicle. Drunken driving is the number one cause of auto fatalities. Any employee drinking alcoholic beverages and/or using drugs, having possession of the same during working hours, or while driving an Authority vehicle, or being under the influence shall be subject to disciplinary action.

Employees who are responsible for the operation of Authority owned vehicles shall be required to have and maintain the proper license for the size and type of vehicle operated and the employee must inform management of any change in the status of their license which would effect their ability to legally operate the vehicle.

PORTABLE TOOLS AND EQUIPMENT

Revised on: **Issued:**

Last Review Date: **Next Review Due:**

Unit/Area of Responsibility: All Authority facilities and work sites.

Purpose: Portable tools and equipment can be very dangerous when they are not used properly. All safety guidelines are to be strictly adhered to for the protection of the user and any personnel in the immediate area.

A. Tool Condition(s)

1. Each employee shall be responsible for checking the safe condition of their tools and equipment prior to use. They shall report any safety hazards to management.
2. The operator of any portable tool or piece of equipment shall be responsible for keeping it clean, lubricated and in good condition.
3. When a tool develops a defect or malfunction during use, the operator shall immediately stop using it until it is properly repaired.
4. All tools should be inspected at regular intervals and should be repaired in accordance with the manufacturer's specifications.

B. Shield Guards and Attachments

1. The proper shield, guard or attachment, as furnished by the manufacturer, shall be used at all times.
2. Portable, power driven saws shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth except for the minimum required to allow the base to be tilted for bevel cuts. The lower guard shall cover the saw to the teeth except for the minimum required to allow proper retraction and contact with the work. When the tool is withdrawing from the work, the lower guard shall automatically and instantly return to the covering position.
3. Belt sanding or grinding machines shall be provided with guards at each nip point where the sanding belt runs onto a pulley. These guards shall effectively prevent the hands or fingers of the operator from coming in contact with the nip points. The unused run of the sanding belt shall be guarded against contact.

C. **Hoses & Connections**

1. Hose and hose connections used for conducting compressed air to utilization equipment shall be designed for the pressure and service to which they are subjected. The operating trigger on portable hand operated utilization equipment shall be arranged to close the air inlet valve automatically when the pressure of the operator's hand is removed.

D. **Required PPE**

1. Eye protection shall be worn by all personnel when in the area of or while performing any of the following tasks: grinding, chipping, drilling, sawing or similar operations.

E. **Required Preparation**

1. Every employee should keep up to date and be familiar with the proper use of protective devices used with tools of his or her trade.
2. No employee should use a tool until he/she knows how to use the tool correctly and is familiar with the tool(s) operation.

RESPIRATORY PROTECTION

Issued: **Revised on:**

Last Review Date: **Next Review Due:**

Unit/Area of Responsibility:	Chlorine Room or any area where conditions would dictate the use of a respirator.
Job Hazards:	Employee could be overcome by chemical vapors or lack of oxygen.
Protective Equipment:	Self Contained Breathing Apparatus (SCBA).
Purpose:	To protect the employee from being adversely affected by chemical vapors or in an oxygen deficient area.

GUIDELINES:

A. Authority Employees:

1. In the water and wastewater industry the most common respiratory exposures are the particulate contaminants (dust) from handling dry chemicals and gas and vapor contaminants from chlorine leaks. Each of these situations requires a special type of protection to prevent adverse health effects. Every employee handling dry chemicals such as dumping bulk or bagged chemicals into feeders or any other condition which creates a chemical dust shall wear a respirator for protection from particulate matter. Every employee who detects or suspects the presence of chlorine gas must put on an air supplied respirator or self contained breathing apparatus (SCBA) or independent oxygen breathing apparatus before entering the suspected area or confined space.
2. Authority will provide respirators which are applicable and suitable for the purpose intended.
3. The employee shall use the provided respiratory protection in accordance with instructions received. The employee shall guard against damage to the respirator, will maintain the respirator in accordance with the manufacturer's recommendations, and shall report any malfunction of the respirator to management.
4. A respirator will not provide full protection to the wearer, if the wearer is not

clean shaven. The wearer of a respirator equipped with a full face piece, helmet, hood shall not be allowed to wear contact lenses. If spectacles, goggle or face shield must be worn with the respirator face piece, it shall be worn so as to not affect the seal of the face piece.

5. For the particulate contaminants (dust) caused by dry chemical handling, a particulate removing respirator equipped with a filter or filters specifically designated for the expected type of particulate matter will be provided. The filter may be of the single use or the reusable type.

6. For the gas and vapor contaminant from chlorine leaks, a self contained breathing apparatus (SCBA) will be provided.

7. The self contained breathing apparatus will be stored in a manner to protect them against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Respirators shall be stored to prevent distortion of rubber or other elastomeric parts. Emergency and rescue use respirators that are placed in work areas shall be quickly accessible at all times and the storage cabinet or container in which they are stored shall be clearly marked.

8. Each respirator shall be inspected routinely before and after each use. Respirator inspection shall include a check for tightness of connections, for the condition of the respiratory-inlet covering, head harness, valves, connecting tubes, harness assemblies, and for proper function of regulators, alarms, and other warning systems. Each rubber or other elastomeric part shall be inspected for pliability and signs of deterioration. Each air and oxygen cylinder shall be inspected to ensure that it is fully charged according to the manufacturer's instructions. A record of inspection dates, findings and remedial actions shall be kept for each respirator maintained for emergency or rescue use. Any deterioration or deficiencies found during the inspection shall be corrected immediately or, if necessary, reported to management.

RIGHT TO KNOW ACT	Issued:	Revised On:
	Last Review Date:	Next Review Due:

THE WORKER AND COMMUNITY RIGHT TO KNOW ACT

Unit/Area of Responsibility: Authority facilities and associated street locations where Authority employees are working.

Job Hazards: Each chemical has its own kinds of hazards. It is the employee's responsibility to know what the hazards are by reading the MSDS sheets provided by the chemical manufacturer.

Protective Equipment: As dictated by the MSDS.

Purpose: The purpose of this law is to ensure that the hazards of all chemicals produced or imported by chemical manufacturers are evaluated and the information concerning these hazards is transmitted to affected employees in order to reduce the incidence of chemically-related illness and injuries. This transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which are to include container labeling and other forms of warning, material safety data sheets, and employee training. Workers have a right to know about chemical hazards to which they may be exposed.

A. LABELS

1. Containers are to be labeled, tagged or marked.

2. Each container present in the work areas shall be labeled, tagged, or marked with the common or chemical names of the hazardous chemicals contained and its appropriate hazard warnings.

3. Portable containers into which hazardous chemicals are transferred from labeled containers for the immediate use of the employee who performs the transfer are exempt from these requirements.

4. Labels should list precautions in the following categories. After reading the label, you can check the Material Safety Data Sheet (MSDS).

a. **Basic Warnings** . The warning label lists the chemical name, hazardous ingredients, and the name and address of the chemical manufacturer. It also lists hazard warnings, such as to keep the chemical away from flame or avoid skin contact.

b. **First Aid**. The label may explain what to do if you splash the chemical in your eyes or on your skin. You may need to flush your eyes at an eyewash station for 15 minutes or wash contaminated skin in a full-body shower.

c. **Fire**. The label may tell you what to use to put out an accidental fire. There are four different types of fire extinguishers: water spray, foam, dry chemical, and carbon dioxide. Using the wrong one can spread the fire rather than put it out, so be sure you check the warning label.

d. **Spills** . There may be a section on how to handle spills. For any spill, contact your supervisor right away and put out any source of nearby flame. You may need to wear personal protective equipment to clean up a spill.

e. **Handling and Storage**. The label may list the personal protective equipment, such as gloves, safety goggles, or a respirator, that you need to handle the chemical safely. The chemical may also need to be stored with extra ventilation or away from other chemicals.

f. **Disposal**. Treat empty containers as if they're full, and don't fill them with anything else! Empty containers can be hazardous since they often hold residues that can burn or explode. Follow the label and your Authority policy on how to dispose of empty containers.

5. Label Missing or Torn.

a. **Non-Labeled Containers**. If a container doesn't have a warning label, don't handle the chemical until you know what it is. Find out what the chemical is and provide a warning label if the chemical is hazardous.

b. **Transfer Containers**. If you move a hazardous chemical from its primary container to a new one, be sure your transfer container is labeled. Then your coworkers will know how to handle it safely too.

c. **Torn Labels**. If a label is torn, damaged, or misplaced, replace it. Remember, the only way you can handle a chemical safely is if you know **what it is.**

B. MATERIAL DATA SHEETS

1. The Authority shall maintain in the work place a material safety data sheet or similar informational reference for each hazardous chemical which they use. All material safety data sheets maintained by the employers shall be available to their employees for examination during all hours of operation.

2. Material Safety Data Sheets (MSDS) will contain information in the following categories for each hazardous chemical.

a. **Chemical Identification**. The first section of the MSDS helps you identify the chemical. It lists the name of the chemical, any trade names, and the chemical manufacturer's name and address. This section may also list an emergency phone number.

b. **Hazardous Ingredients**. This section lists what's in the chemical that can harm you. It also lists the concentration of the chemical to which you can safely be exposed, often listed as the **permissible exposure limit** (PEL) or the **threshold limit value** (TLV). These safe exposure limits are usually figured for average exposures over a typical work shift.

c. **Physical Data**. This section describes the chemical's appearance, odor, and other characteristics. **Percent volatile,** for instance, is how much of the chemical evaporates at room temperature. Sulfuric acid has a low percent volatile, but it can be harmful if inhaled. Respiratory protection or extra ventilation may be needed.

d. **Fire and Explosion Data**. Here you can find at what temperature the chemical ignites, called the **flash point**. If a chemical is **flammable**, it ignites below 100°F. If it's **combustible**, it ignites at 100°F or above. This section also lists **extinguishing media** -what will put out the fire safely - such as water spray, foam, or other types of fire extinguishers.

e. **Health Hazards**. This section lists symptoms of overexposure, such as a skin rash, burn, headache, or dizziness. It also tells you first aid and emergency procedures in case of overexposure, such a flushing your exposed skin with running water for 15 minutes. It may also list any medical conditions that can be aggravated by exposure to the chemical.

f. **Reactivity Data**. Here you'll find whether the chemical "reacts" with materials or conditions. **Incompatibility** lists the materials, such as water or other chemicals that cause the chemical to burn, explode, or release dangerous gases. Instability lists the environmental conditions, such as heat or direct sunlight that cause a dangerous reaction.

g. **Spill or Leak Procedures.** This section tells you what to use to clean up an accidental spill or leak. No matter what the chemical is, always notify your supervisor right away. Before cleaning up a chemical spill, you may need to wear respiratory protection, gloves, safety goggles, or protective clothing. This section may also include notes on how to dispose of the chemical safely.

h. **Special Protection**. Here you'll find a listing of any personal protective equipment (respiratory protection, gloves, eye protection) you need to work safely with the chemical. If protective equipment is needed, this section may list the specific types that are recommended, such as a full-face mask respirator, rubber gloves, and chemical safety goggles.

i. **Special Precautions**. This section lists any other special precautions to follow when handling the chemical. This may include what to have nearby to clean up a spill or put out a fire, and what safety signs to post near the chemical. This section also lists any other health and safety information not covered in other parts of the MSDS.

C. ACCESS TO WRITTEN RECORDS

1. Chemical identification lists and material safety data sheets required by this Act shall be made available upon request for examination and copying to any affected employee or former employee, authorized employee representative, designated physician or representative.

2. Any exposure measurements taken to monitor employee exposure to chemicals in the work area shall be made available upon request for examination and copying to any affected employee or former employee, designated physician or representative.

D. PROHIBITED PRACTICES

1. It is unlawful for any employer to discharge, discipline, or otherwise discriminate against any of its employees who have assisted in the enforcement of this Act.

SEAT BELTS

Issued: Revised on:

Last Review Date: Next Review Date:

Unit/Area of Responsibility: All FTMSA vehicles, Authority rental vehicles and personal vehicles on Authority business.

Job Hazards: Accident can happen any where including on plant premises.

Purpose: To prevent or lessen injury in the event of a vehicle accident.

GUIDELINES:

A. Authority Employees

1. Seat Belts must be worn by anyone operating or riding in company vehicles at ALL times. (NO EXCEPTIONS).

2. Pennsylvania State Law states both driver and passengers must wear seat belts at all times. It is the employees ' responsibility to abide by the Law.

3. Personal Vehicles used for Authority business – Personal Vehicles used for Authority business shall provide a seatbelt for the driver and all passengers. It is the Law for seatbelts to be worn by any one in a vehicle. This applies to personal vehicles on Authority business.

SHORING

Unit/Area of Responsibility:	Plant-wide and street service work
Job Hazards:	When working in excavations, the soil and or weather conditions could create the possibility of cave-ins.
Protective Equipment:	Speed Shoring, fin form plywood, ladders & trench boxes.
Purpose:	To protect workers from cave-ins when working in trenches or pits.

GUIDELINES:

A. **Determination Of Soil Type**

1. Stable Rock - Granite or Limestone
2. Type "A" Soils - Clay (1.5 tsf)
3. Type "B" Soils - Angular gravel, Silt (.5 tsf to 1.5 tsf)
4. Type "C" Soils - Gravel, Sand, Submerged soil (.5 tsf or less)

B. **Soil Weight**

1. Heavy soil may weigh up to 100 lbs./ cu. ft.
2. Cubic yard of soil contains 27 cu. ft.
3. At 100 lbs./cu.ft., a yard of soil will weigh 2,700 lbs. nearly 1 1/2 Tons

C. **Conditions Causing Soil Distress**

1. Placing spoils closer than **two** feet from open trench
2. Nearby vibrating machinery
3. Nearby heavy, moving loads
4. Seeping water or rain
5. Hot, dry weather

D. **Excavation Inspections**

1. Inspections must be conducted

a. Before work starts
b. Throughout shift
c. After a rainstorm

2. Excavations must be inspected for;

a. Evidence of possible cave-ins
b. Indications of failure of protective systems
c. Potential hazardous atmosphere

3. Ladder must be installed in trench before workers can enter.
4. Ladders must be installed every 25 feet of trench length.
5. When hazardous conditions are found, remove workers immediately.

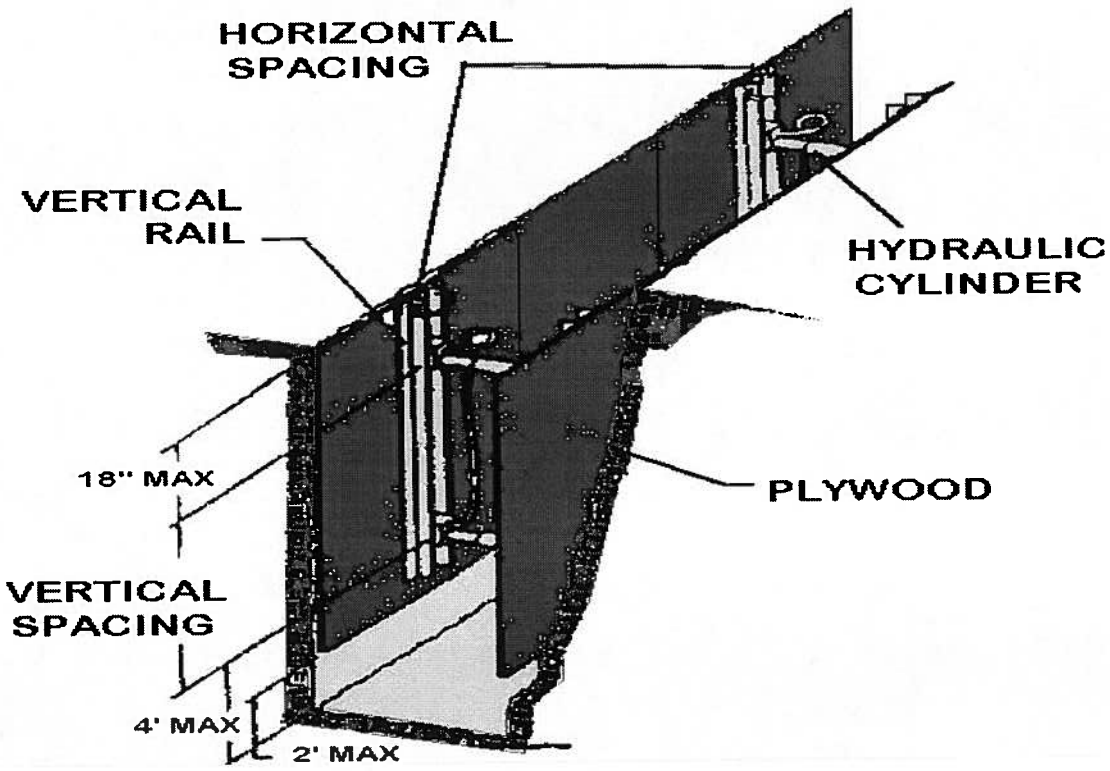
E. **Installing Removing Shoring**

1. Follow the steps below when installing & removing shoring of sheathing whalers & struts.

a. Excavate
b. Place uprights & upper struts
c. Install other struts working form the top down
d. Make the improvements
e. Remove lower strut first
f. Remove other struts working from the bottom up
g. Remove uprights
h. Backfill

Installing Vertical Aluminum Hydraulic Shoring

F. **Note: Don't enter excavation until at least two pieces of speed shoring are installed.**



DEPTH OF TRENCH (FEET)	WALES		HYDRAULIC CYLINDERS						TIMBER UPRIGHTS		
	VERTICAL SPACING (FEET)	*SECTION MODULUS IN3	WIDTH OF TRENCH (FEET)						MAX. HORIZ. SPACING (ON CENTER)		
			UP TO 8		OVER 8 UP TO 12		OVER 12 UP TO 15		SOLID SHEET	2 FT.	3 FT.
			HORIZ. SPACING	CYLINDER DIAMETER	HORIZ. SPACING	CYLINDER DIAMETER	HORIZ. SPACING	CYLINDER DIAMETER			
OVER 5 UP TO 10	4	3.5	8.0	2 IN.	8.0	2 IN.	8.0	3 IN.	—	—	3x12
		7.0	9.0	2 IN.	9.0	2 IN.	9.0	3 IN.			
		14.0	12.0	3 IN.	12.0	3 IN.	12.0	3 IN.			
OVER 10 UP TO 15	4	3.5	6.0	2 IN>	6.0	2 IN.	6.0	3 IN.	—	3x12	—
		7.0	8.0	3 IN.	8.0	3 IN.	8.0	3 IN.			
		14.0	10.0	3 IN.	10.0	3 IN.	10.0	3 IN.			
OVER 15 UP TO 20	4	3.5	5.5	2 IN.	5.5	2 IN.	5.5	3 IN.	3x12	—	—
		7.0	6.0	3 IN.	6.0	3 IN.	6.0	3 IN.			
		14.0	9.0	3 IN.	9.0	3 IN.	9.0	3 IN.			

2. Aluminum Hydraulic Shoring Waller Systems for Soil **Type C**

DEPTH OF TRENCH (FEET)	WALES		HYDRAULIC CYLINDERS						TIMBER UPRIGHTS		
	VERTICAL SPACING (FEET)	*SECTION MODULUS IN³	WIDTH OF TRENCH (FEET)						MAX. HORIZ. SPACING (ON CENTER)		
			UP TO 8		OVER 8 UP TO 12		OVER 12 UP TO 15		SOLID SHEET	2 FT.	3 FT.
			HORIZ. SPACING	CYLINDER DIAMETER	HORIZ. SPACING	CYLINDER DIAMETER	HORIZ. SPACING	CYLINDER DIAMETER			
OVER 5 UP TO 10	4	3.5	6.0	2 IN.	6.0	2 IN. NOTE(2)	6.0	3 IN.	3x12	—	—
		7.0	6.5	2 IN.	6.5	2 IN. NOTE(2)	6.5	3 IN.			
		14.0	10.0	3 IN.	10.0	3 IN.	10.0	3 IN.			
OVER 10 UP TO 15	4	3.5	4.0	2 IN>	4.0	2 IN. NOTE(2)	4.0	3 IN.	3x12	—	—
		7.0	5.5	3 in.	5.5	3 IN.	5.5	3 IN.			
		14.0	8.0	3 IN.	8.0	3 IN.	8.0	3 IN.			
OVER 15 UP TO 20	4	3.5	3.5	2 IN.	3.5	2 IN. NOTE(2)	3.5	3 IN.	3x12	—	—
		7.0	5.0	3 IN.	5.0	3 IN.	5.0	3 IN.			
		14.0	6.0	3 IN.	6.0	3 IN.	6.0	3 IN.			

SKIN PROTECTION

Unit/Area of Responsibility: All Authority facilities and work areas except Administrative Offices.

Job Hazards: Blood and sewage are two very big carrier of disease. Blood and sewage both can contain blood born pathogens.

Purpose: To prevent the spread of disease by direct contact with substances of a foreign nature.

Guidelines:

A. Authority Employees

1. Personal Protective Equipment

a) If you should have to come in contact with blood or sewage, we have two means to protect your skin and clothes:

1) Rubber Gloves

2) Rubber Suits : These suits will protect your clothing and the rest of your body as well.

2. Potential Exposure

b) If your skin should come in contact with blood or sewage you should scrub the affected area with anti-bacterial soap.

3. Decontaminating

i. Remove contaminated PPE or clothing as soon as possible

ii. Clean and disinfect contaminated equipment and work surfaces 1) Use 1/4 cup of bleach per one gallon of water 2) Let bleach sit for at least 20 minutes before cleaning up.

CONFINED SPACE

1. **Scope:**
1.1. The intent of this procedure is to ensure communication among all parties involved in work in a designated confined space.

2. **Purpose:**
2.1. This procedure covers the initiation, preparation, authorization, issuance, utilization and termination of confined space entry permits. In addition, this procedure addresses general rules regarding work in confined spaces at Authority facilities.

3. **Hazards:**
3.1. Hazardous atmospheres, sudden flow surges or sudden release of energy, inability to isolate spaces, fall hazards.

4. **References:**
4.1. Water Environment Federation publication – Confined Space Entry

Definitions:

Attendant – A person stationed outside the permit-required space who monitors the safety of the operation.

Blanking and Bleeding. Blanking is the process of placing a physical barrier to stop the flow of materials and ensure that this cannot unintentionally be removed. This is usually accomplished by affixing a solid plate into a flanged connection or at the end of an open pipeline, then securing it in place by re-bolting the connection. Bleeding is the removal of any residual material or energy from the source. In these cases, a tag and/or lock will be attached to alert others that these devices are in place to ensure safe work conditions. This procedure is often referred to as a part of Lockout/Tag out.

Confined Space – Any space that is large enough and configured to allow a person to enter and perform work, has limited means of entry and exit, and is not designed for continuous personnel occupancy.

Confined Space Entry Permit – A specific work permit form to ensure that entry into a confined space is authorized and executed subject to specified safety regulation.

Entrant – Employees who enter the confined space.

Entry -The action by which a person passes through an opening into a confined space. Entry includes ensuing work activity inside the space and is considered to have taken place as soon as any part of the entrant's body breaks the plane of the opening into the space.

Fall Protection – a device designed to limit the travel distance of a person who falls from a ladder or working surface. This may be a self-arresting device built into a tripod/winch assembly, a separate self-arresting device, or a harness equipped with a shock-absorbing lanyard. These devices reduce the shock-load to the body and the associated injuries. Those personnel who must descend more than four feet into a confined space will be required to utilize fall protection.

Hazardous Atmosphere – Oxygen level <19.5% or >23.5%, >10% LEL, biological or toxic contaminant above OSHA PEL levels.

IDLH – Immediately Dangerous to Life and Health. A condition that poses an immediate or delayed threat to life, or that would cause irreversible adverse health effects, or that would interfere with an individual's ability to escape unaided from a confined space.

Isolation – The process by which a confined space is removed from service and completely protected against the release of energy and/or material into the space by such means as: Blanking or blinding; miss-aligning or removing sections of piping, tubing or ducts; a double block and bleed system; lockout/tag out of all sources of energy; blocking or disconnecting all mechanical linkages.

LEL – Lower Explosive Limit, or lowest concentration of a gas in air capable of being ignited when a source of energy such as a spark or flame is applied.

PEL/TLV – Permissible Exposure Limit/Threshold Limit Value. Both are time weighted average concentrations for an eight-hour workday, to which an average worker may be exposed without adverse health effects.

Permit-Required Confined Space – An enclosed or partially enclosed space such as a tank, skimmer pit, clarifier, pump pit, lift station, furnace or other enclosure where there is reason to anticipate a potential or known hazard to personnel. This will include any open top space more than four feet in depth such as a sewer, valve pit or excavation.

Retrieval System – Equipment designed to assist in the escape of personnel from a

confined space when they are unable to do so unaided. This normally consists of a tripod and a winch or device that provides a mechanical lifting advantage for personnel outside the space who may be involved in non-entry rescue. This is also used in routine entries where there is no other means of entry/exit such as a ladder.

Ventilation – The use of mechanical or natural air movement to ensure that a hazardous atmosphere does not develop during entry operations.

5. **Pre-Entry Procedures:**

5.1. Work should be evaluated to determine if entry is necessary, or if the work can be performed without actually entering the confined space. If the space must be entered, atmospheric testing must be performed to determine the presence or absence of a hazardous atmosphere. Atmospheric testing equipment such as gas detectors should be calibrated and set-up away from the work area. Testing probes should be inserted into the space with checks being made at various levels to determine if any heavier-than-air or lighter-than-air contaminants are present. Continuous monitoring of the space may be necessary. Initial monitoring can be done through vent holes in the cover if they exist or by providing entry personnel with testing equipment.

5.2. For all confined spaces, whether in plant, at pump stations or in sewer entries, steps will be taken to ensure the following atmospheric conditions:

5.2.1. Oxygen level – 20.8%. This is the desirable level of oxygen, and can usually be achieved through proper ventilation. Atmospheres of less than 19.5% oxygen will require the use of air-supplied respirators

5.2.2. Flammability – 0%. OSHA allows for up to 10% LEL. Any level above 0% should be investigated and eliminated where possible by ventilating the atmosphere and/or removing ignition sources.

5.2.3. Carbon Monoxide – 0 ppm. The permissible exposure limit (PEL) is 35 ppm. Higher levels can present respiratory difficulty, or death. 6.2.4. Hydrogen Sulfide – 0 ppm. H2S has an odor similar to rotten eggs. However, it can deaden the sense of smell and give a false sense of security. Ventilation or respiratory protection may be required. Under NIOSH guidelines, levels in excess of 10 ppm will require the use of air-supplied respirator (SCBA or SAR).

5.3. In a vertical entry more than four feet deep, fall protection, including a full-body harness and a fall-arresting device must be used. Existing tripod/winch assemblies have fall-arrest built in, although care should be taken to use a tripod and winch of the same manufacturer to ensure compatibility. If there is a potential chemical hazard, such as chlorine or caustic, the specific chemical hazards will be reviewed with the entrants. Testing for specific chemicals must be performed when necessary in order to establish exposure potential and PPE requirements.

5.4. Confined spaces will be ventilated prior to entry. The preferred method is positive ventilation, or blowing fresh air into a space. Exhausting air can allow toxic materials to be sucked into the space from other entry lines. If the cover has no vent holes, use of proper tools and proper lifting procedures can prevent injury to personnel in removing covers. Atmospheric monitoring can then proceed. Once the space has been ventilated, the atmosphere must be re-tested. If the entry involves a sewer on a municipal roadway, the area should be barricaded and identified to alert vehicle traffic and protect workers from traffic hazards. Barriers can also help prevent accidental falls and the inadvertent dropping of foreign objects into the space.

5.5. Proper isolation or lockout/tag out must be completed to prevent the flow of material and/or the sudden release of energy in a confined space. This includes locking and tagging out electrical sources, blanking and bleeding pneumatic and hydraulic lines, disconnecting belt or chain drives and mechanical linkages on shaft driven equipment, and securing mechanical moving parts within a confined space using chains, blocks chocks or other devices. Tags should be used to alert others that specific lines or equipment have been isolated.

5.6. The space must be evaluated for the use of personal protective equipment (PPE), specialized entry equipment, emergency or rescue equipment and decontamination requirements. PPE includes the potential need for head, eye, body and foot protection. The need for hearing or respiratory protection must also be considered. Entry equipment includes harnesses, lifelines, and retrieval systems with fall protection, artificial lighting, air monitoring equipment, ventilators and the possibility of non-sparking tools or a fire extinguisher.

5.7. A means of calling for emergency help must be established. During normal work hours, an Authority employee can be reached via radio. During off-hours, a cell phone can be used to contact the local 911 dispatcher. While emergency help is responding, retrieval systems may be used for non-entry rescue or for assistance in self-rescue. In no case will the attendant enter the confined space unless relieved by another qualified person.

5.8. Prior to entry, the employee will perform the following duties:

5.8.1. Evaluate job site for known or potential hazards to entrants. Verify that all monitoring has been completed and that all procedures and equipment specified are in place prior to endorsing the permit and allowing entry to begin.

5.8.2. Establish authorized entrants and attendants, and communicate appropriate hazard information.

5.8.3. Ensure all safety precautions are taken and permit requirements are met and safe entry conditions are in place.

5.8.4. Verify that rescue or emergency services are available and that a means of summoning them is operable.

5.8.5. Terminate or cancels entry when conditions not allowed arise.

6. **Entry Procedures:**

6.1. In general, a minimum crew of two persons will be used for confined space entries. All safety equipment mandated will be used, and the confined space will be entered by one of three means:

6.2. Fixed steps or ladders – check for step and ladder integrity before using. Sewer environments in particular can contribute to corrosion problems, causing rungs or steps to deteriorate.

6.3. Portable ladders – these may be necessary if fixed ladders are inadequate or not available. Portable ladders should be secured wherever possible.

6.4. Man-rated mechanical entry/retrieval equipment – tripod/winch assemblies with built-in fall arrest protection.

6.5. Entrants must meet the following criteria:

6.5.1. Know the hazards that may be encountered during entry, including the mode, signs or symptoms and consequences of exposure.

6.5.2. Properly use equipment specified in the permit, including proper personal protective equipment (PPE).

6.5.3. Communicate with attendant as necessary and knows emergency evacuation signal and procedures.

6.5.4. Alert the attendant whenever a warning sign or symptom of exposure to a dangerous situation occurs, or if he/she detects a condition not allowed by the permit.

6.5.5. Exit the space whenever the evacuation order is given or if a hazardous condition arises.

6.6. An attendant will be posted outside the space at all times that entry work is in progress. The attendant will monitor activities inside and outside the space, and will keep an accurate account of personnel entering or leaving the space. In most cases, this will result in a direct line-of-sight contact between the attendant and entrant(s). When direct line-of-sight is not possible; a means of communication must be established that will effectively monitor the safety of all entrants. This can be radio, tugs on a rope or safety line, knocking on the wall of the space, or any system that has

been pre-designated to establish communications.

6.7. The Attendant's responsibilities will include:

6.7.1. Know the hazards that may be encountered during entry, including the mode, signs or symptoms and consequences of exposure.

6.7.2. Is aware of behavioral effects of exposure to hazards.

6.7.3. Maintain an accurate account of entrants in and out of the space.

6.7.4. Remain outside the space until relieved by another qualified attendant, or until entry operations are terminated.

6.7.5. Communicate with entrants as necessary.

6.7.6. Monitor conditions inside and outside the space to determine if safe conditions exist and orders evacuation of the space if:

6.7.6.1. A prohibited condition is detected

6.7.6.2. A condition outside the space endangers entrants

6.7.6.3. A behavioral effect of exposure is detected

6.7.6.4. A attendant cannot safely perform all assigned duties.

6.7.7. Verify that emergency services are available and summons rescue/emergency services as soon as the need is determined.

6.7.8. Ensure unauthorized personnel do not enter the space or informs coworkers if unauthorized personnel do not leave the space.

6.7.9. Assist entrant by performing non-entry rescue if entrant cannot self-rescue.

6.7.10. Perform no duties that may interfere with primary responsibility to monitor and protect entrants.

6.8. A confined space will be evacuated immediately whenever:

6.8.1. An attendant or entrant observes a condition that is prohibited on the entry permit.

6.8.2. The gas detector registers unacceptable conditions or goes into the alarm mode.

6.8.3. The attendant observes a situation outside the space that can endanger entrants.

6.8.4. The attendant or entrant detects an uncontrolled hazard within the space.

6.8.5. An entrant or the attendant detects symptoms of exposure to a hazardous atmosphere, such as dizziness, blurred vision, shortness of breath, ringing in the ears, drowsiness, etc.

6.8.6. The attendant cannot effectively monitor the safety of entrants.

6.9. When the space is vacant, the employees will ensure barriers and/or signs are in place to prevent unauthorized or accidental entry into the space.

8. **Termination Of Entry:**

8.1. Once all work in a confined space has been completed, the entry will be terminated.

***APPENDIX*:**

Atmospheric Hazards These are usually the most dangerous, yet they will frequently go unnoticed. Personnel often rely on the sense of smell due to the presence of septic conditions or spoiled food often found in sewer systems. However, other gases and vapors that may be hazardous to the respiratory system are odorless and may be toxic or flammable. Some gases can deaden the sense of smell, giving the worker a false sense of security. An atmosphere may be hazardous for no other reason than a deficiency of oxygen, which could lead to a worker exercising poor judgment or disorientation and, ultimately, injury or death.

Biological Hazards There is no limit to the variety of viruses and bacteria that can exist in wastewater or sewage. Exposure can be aggravated by the existence of open cuts that would facilitate infection. Proper PPE is a must.

Electrical Hazards Workers in pumping stations often are in close proximity to high-voltage electricity and water. This can be a dangerous situation if not handled carefully. Short circuits and electrical fires can occur with little or no warning, presenting danger to workers and rescuers. Proper isolation of energy sources via lockout/tag out procedures is a must.

Extreme Temperatures Normally, temperatures inside a manhole are somewhat pleasant. However, protective clothing and equipment can cause the retention of body heat and potentially cause dehydration. Personnel in a manhole

should not eat food or drink water until after exiting and decontaminating. Therefore, it is important for personnel to drink plenty of fluids prior to entering manholes in order to prevent dehydration. Personnel will not enter the incinerator hearths when the air temperature is 130°F or higher. It must be recognized that, even when the air temperature is below that level, there may be hot surfaces that require proper personal protection.

Hazard Recognition: Some hazards apply to all types of confined spaces. Sewer systems have the potential to present many different hazards. Knowing the hazards is the first step in being prepared for an emergency. Various hazards are described in the following sections.

Mechanical Hazards This type of hazard is usually found in pumping stations, where machinery, door latches and other mechanical equipment can cause serious injury if not properly isolated. In addition, noise from machinery can cause hearing damage, or interfere with communication between workers. Some mechanical devices must be moved in order to make entry into a confined space. Many of these are heavy, and can lead to strains, sprains or other injuries if not properly handled.

Physical Hazards Workers must be constantly alert to the potential for physical dangers such as corroded or damaged steps or ladder rungs normally used for entry into, or exit from a confined space. Such damage can lead to falls by personnel or falling objects that can strike personnel and cause injury. Other conditions or equipment such as valves valve stems, valve handles, conveyors or movable objects can result in injury to personnel if not properly isolated. This equipment may be configured in a manner that requires unusual body positioning in order to perform work on it, potentially increasing the possibility of injury if proper caution is no taken. Under the best circumstances, footing can be treacherous and care must be taken.

Traffic Hazards. These can be hazardous conditions even before any work begins. Many manholes are located in the middle of busy highways. This presents potential hazards to workers and rescuers. Steps must be taken to alert motorists that work in the area presents a potential hazard. Signs, barriers and warning devices must be used appropriately to preserve work zone safety.

LOCKOUT TAGOUT	Issued:	Revised On:
	Last Review Date:	Next Review Due:

LOCKOUT/TAGOUT

1. Scope:

1.1. Any servicing and/or maintenance of machines or equipment when the source of energy to the machines or equipment is electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy.

1.2. Constructing, installing, setting up, adjusting, inspecting, modifying, maintaining and/or servicing machines or equipment including lubrication, cleaning or un-jamming of machines or equipment, and making adjustments or tool changes, where employees could be exposed to the unexpected energizing or startup of the equipment or release of hazardous energy.

2. Purpose:

2.1. To prevent injury to servicing and/or maintenance employees due to the unexpected energizing or startup of machines and equipment, or release of stored energy.

3. Application:

3.1. This standard applies to the control of energy during servicing and/or maintenance of machines and equipment when:

3.1.1. An employee is required to remove or bypass a guard or other safety device.

3.1.2. An employee is required to place any part of his or her body into an area on a machine or piece of equipment where work is actually performed upon the material being processed (point of operation) or where an associated danger zone exists during a machine operating cycle.

4. References:

4.1. OSHA - Control of Hazardous Energy (Lock-out / Tag-out) 29 CFR 1910.147.
4.2. OSHA - 29 CFR 1910.333 Selection and use of work practices.

5. Definitions:

5.1. **Authorized employee:** An employee who locks or tags machines or equipment in order to perform servicing or maintenance.

5.2. **Affected employee:** An employee who is required to use machines or equipment on which servicing is performed under the Lockout/Tagout standard or who performs other job responsibilities in an area where such servicing is performed.

5.3. **Other employees:** All employees who are or may be in an area where energy control procedures may be utilized.

5.4. **Capable of being locked out:** An energy-isolating device is considered capable of being locked out if it:

5.4.1. Is designed with a hasp or other means of attachment to which a lock can be affixed.

5.4.2. Has a locking mechanism built into it.

5.4.3. Can be locked without dismantling, rebuilding, or replacing the energy-isolating device or permanently altering its energy control capability.

5.5. **Energized:** Machines and equipment are energized when they are connected to an energy source or they contain residual or stored energy.

5.6. **Energy-isolating device:** A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following:

5.6.1. A manually operated electrical circuit breaker;

5.6.2. A disconnect switch;

5.6.3. A manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors.

5.6.4. Additionally, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy. **Push buttons, selector switches and other control circuit type devices are not energy isolating devices.**

5.7. **Energy source:** Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

5.8. **Lockout:** The placement of a lockout device on an energy-isolating device, in accordance with an established procedure, ensuring that the energy-isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

5.9. **Lockout device:** Any device that uses positive means, such as a lock, blank flanges and bolted slip blinds, to hold an energy-isolating device in a safe position, thereby preventing the energizing of machinery or equipment.

5.10 **Normal production operations:** Utilization of a machine or equipment to perform its intended production function.

5.11. **Servicing and/or maintenance**: Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, maintaining and/or servicing machines or equipment, including lubrication, cleaning or un-jamming of machines or equipment, and making adjustments or tool changes, where employees could be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

5.12. **Tagout:** The placement of a tagout device on an energy-isolating device, in accordance with an established procedure, to indicate that the energy-isolating device and the equipment being controlled may not be operated until the tagout device is removed.

5.13. **Tagout device:** Any prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy-isolating device to indicate that the machine or equipment to which it is attached may not be operated until the tagout device is removed.

6. Energy Control Program:

Note: All contractors **SHALL** follow the Authority's Lockout/Tagout Policy when working at any Authority Facility.

Note: Before Lockout/Tagout is applied, all personnel working in the affected area **Shall** be notified.

6.1. Energy control procedures detail and document the specific information that an authorized employee must know to accomplish Lock-out/Tagout, namely, the scope, purpose, authorization rules and techniques to be utilized for the control of hazardous energy.

6.2. Periodic inspections of the energy control procedures ensure that the procedures

and the requirements of the standard are being followed.

6.3. Employee training and retraining, along with additional training under a Lockout/Tagout system, ensures that the employer understands the purpose and function of the energy control programs.

7. Procedure Steps:

7.1. Planning:

7.1.1. Determine all blocking points that require locks and tags.

7.1.2. Ensure that energy can not be re-accumulated while work is being performed.

Note: **Danger Locked Out (do not operate)** tag **Shall** be applied at all shutdown control points.

Locks & Danger Locked Out (do not operate) Tag Shall be applied at all main energy source shutdown control points.

7.2. Equipment Shutdown:

7.2.1. Electrical Lock-Out / Tag-Out:

> **Note: Never** pull an electrical disconnect /switch while the equipment is under load.

7.2.1.1. Shutdown the system at the local controls.

7.2.1.2. Isolate all energy sources by shutting off the source at the main feed.

7.2.1.3. Energy sources may include circuit breakers or disconnect switches, etc.

7.2.1.4. Never remove a fuse instead of disconnecting.

7.2.1.5. Use a meter on the load side of the switch to ensure the equipment has zero potential and is not back feed.

7.2.1.6. Try to start the equipment at the equipment control switch to ensure that all power is disconnected.

7.2.1.7. Leave the start switch in the **off** position after testing.

7.2.2. Mechanical Lock-Out / Tag-Out:

7.2.2.1. Shutdown the system at the local controls.

7.2.2.2. Isolate all energy sources by shutting down the source at the main feed.

7.2.2.3. Energy sources may include line valves, control valves, springs, gravity, etc.

7.2.2.4. Secure any equipment that could move due to spring pressure, gravity, hydraulic or pneumatic energy.

7.2.2.5. If blocks are used, ensure the blocks are strong enough and durable enough to prevent any movement of the equipment.

7.2.2.6. Open all drain valves to ensure all lines and equipment are depressurized.

7.2.2.7. Blank or blind a pipe line, flange or duct by applying a plate or cap

over the end after ensuring it is depressurized.

Note: Only authorized personnel **Shall** apply Lockout/Tagout.

Tags **Must** be:

1. Securely attached to Lock and local controls.

2. Tags **can not** be inadvertently or accidentally detached during use.

7.3. Application of Lockout/Tagout devices:

7.3.1. Only Authority approved Lockout/Tagout devices and tags are to be used.

7.3.2. Lockout/Tagout devices Shall be any of the following:

7.3.2.1 Approved Locks.

7.3.2.2. Breaker Switch Lockouts.

7.3.2.3. Electrical Plug Lockouts.

7.3.2.4. Valve Handle Lockouts.

7.3.2.5. Chains with lock attached

7.3.3. Apply approved locks or Lockout/Tagout devices to all main feeds of the equipment being worked on.

7.3.4. Apply a tag to the following:

7.3.4.1. Main feed.

7.3.4.2. Local control.

7.3.4.3. Inlet, discharge, drain and vent valves.

7.3.5. Every tag **Will** be filled out by the authorized person applying the Lockout.

7.3.6. Every tag will have the authorized person's:

7.3.6.1. Name.

7.3.6.2. Time & Date the lockout was applied.

7.3.6.3. Equipment being worked on.

7.3.6.4. Expected completion date.

7.3.6.5. Any remarks that may be important to other individuals working on this equipment.

7.3.7. Every valve lockout tag **Will** be marked:

7.3.7.1. Do Not Open Valve (e.g. Inlet or discharge valve).

7.3.7.2. Do Not Close Valve (e.g. Vent valve or drain valve).

7.3.7.3. **IF** more then one person is working on the equipment at the same time each person **must** apply his/her own Lock & Tag.

7.3.7.4. Multiple lock hasps are used when more that one lock is to be applied to the same power source.

7.4. Control of Stored Energy & Equipment Isolation Verification.

7.4.1. Electrical:

7.4.1.1. Install ground wires where needed.

7.4.1.2. Use a meter on the load side of the switch to ensure the equipment has zero potential and is not back feed.

7.4.1.3. Try to start the equipment at the equipment control switch to ensure that all

power is disconnected.

7.4.1.4. Leave the start switch in the **off** position after testing.

7.4.2. Mechanical:

7.4.2.1. Ensure all equipment parts have stopped moving.

7.4.2.2. Bleed lines and leave vent lines open.

7.4.2.3. Relieve trapped pressure.

7.4.2.4. Drain process piping systems and close valves to prevent flow of hazardous materials.

7.4.2.5. Block or brace equipment that could fall because of gravity.

7.4.2.6. Block any parts in a hydraulic or pneumatic that could move when pressure is released.

7.4.2.7 **IF** the line must be blocked and there is no valve, use a blank flange.

7.4.2.8. Try to start the equipment at the equipment control switch to ensure that all power is disconnected.

7.4.2.9. Leave the start switch in the **off** position after testing.

7.5. Removing Lockout/Tagout Devices

7.5.1. Ensure that the equipment is safe to operate.

7.5.2. Remove all tools from the work area.

7.5.3. Ensure the equipment is fully assembled.

7.5.4. Ensure all guards are in place.

7.5.5. Notify all personnel in the area that you are removing the Lockout/Tagout.

7.5.6. Each Lockout/Tagout device **must** be removed by the authorized person who applied the device.

Note: Exceptions

1. When the authorized person who applied the Lockout/Tagout is not available to remove it, the device may be removed by an authorized employee.

2. Make all reasonable efforts to contact the authorized person to inform them that their lockout has been removed.

7.6. Special Situations

7.6.1. All outside contractors must follow Authority's Lockout/Tagout procedure.

7.6.2. IF the energy source is not capable of being locked out. - The Employer must be able to demonstrate that the utilization of a Tagout System will provide full employee protection.

7.6.3. IF you must temporarily re-energize the equipment you are working on use the following steps:

7.6.3.1. Remove all unnecessary tools from the work area.

7.6.3.2. Inform all personnel in the area that you are removing the Lockout/Tagout on the equipment.

7.6.3.3. Remove the Lockout/Tagout device.

7.6.3.4. Re-energize the equipment.

7.6.3.5. As soon as the energy is no longer needed, re-apply the Lockout/Tagout.

MATERIAL HANDLING & STORAGE	Issued: 05-05-04	Revised On:
	Last Review Date: 8-19-07	Next Review Due: 8-19-09

MATERIAL HANDLING AND STORAGE

1. Where mechanical handling equipment is used, sufficient safe clearances shall be allowed for aisles, at loading docks, through doorways and where turns or passage must be made.
2. Aisles and passageways shall be kept clear and in good repair with no obstruction across or in aisles that could create a hazard.
3. Permanent aisles and passageways shall be appropriately marked.
4. Storage of material shall not create a hazard. Bags, containers, bundles, etc. stored in tiers shall be stacked, blocked, interlocked and limited in height so that they are stable and secure against sliding or collapse.
5. Storage areas shall be kept free from accumulation of materials that constitute hazards from tripping, fire, explosion, or pest harborage.
6. Where necessary, proper drainage shall be provided.
7. Clearance signs to warn of clearance limits shall be provided.
8. Storage of pipe lengths should always be done using proper chocking procedures.
9. Never stockpile pipe to a height that cannot be handled ***easily*** by a backhoe or other means of unloading.

VEHICLE ACCIDENT PROCEDURE	Issued:	Revised On:
	Last Review Date:	Next Review Due:

VEHICLE ACCIDENT PROCEDURE

1. Employees must carry driver's licenses at all times while driving Authority vehicles and road equipment and while driving personal vehicles on Authority business.
2. Accidents involving Authority vehicles and road equipment must be reported to the manager.
3. Per PENN DOT, vehicles should not be moved from the accident scene unless authorized by a police officer.
4. Never admit fault or liability to anyone (it will be handled by the insurance company).
5. Limit discussion about the accident to immediate facts and obtain other parties information, driver's license number, insurance information, auto registration and tag number.
6. Obtain the following information:
   - 6.1. List of Witnesses
   - 6.2. Weather Conditions
   - 6.3. Posted Speed Limit
   - 6.4. Any other pertinent facts to the accident.

7. In the event of a fuel, hydraulic-oil spill, do not move the vehicle. Try to contain the spill as much as possible and contact the Authority for assistance if needed.

REMEMBER STAY CALM & PROFESSIONAL YOU ARE REPRESENTING THE AUTHORITY