Reviewed And Adopted By The Safety Committee 2019

PERSONAL PROTECTIVE EQUIPMENT PROGRAM

According to the Occupational Health and Safety Administration, over 30% of all disabling injuries in the workplace involve hand, finger, eye, head, face, foot, and toe injuries. It has been estimated that as many as 2,500 eye injuries occur in the work place everyday. Personal protective equipment, when used appropriately, can help reduce exposures and control injuries. PPE should be used when engineering and administrative controls have failed to control or eliminate the hazard.

The objective of the Personal Protective Equipment (PPE) Program is to protect employees from the risk of injury by creating a barrier against workplace hazards. Personal protective equipment is not a substitute for good engineering or administrative controls or good work practices, but should be used in conjunction with these controls to ensure the safety and health of employees. PPE will be provided, used and maintained when it has been determined that its use is required and that such use will lessen the likelihood of occupational injury and/or illness.

This program addresses eye, head, face, feet and hand protection. A separate program exists for respiratory protection.

The Brunswick Sewer District Personal Protective Equipment Program includes:

- Responsibilities of supervisors, safety coordinator, employees, and the District.
- Hazard assessment and PPE selection.
- Employee training.
- Record keeping requirements.

Responsibilities

Supervisors

Supervisors have the primary responsibility for implementation of the PPE Program in their work areas. This involves:

- Supervising staff to ensure that the PPE program elements are followed and that employees properly use and care for the PPE.
- Seeking assistance from the source available to evaluate hazards.
- Notifying the safety coordinator when new hazards are introduced or when processes are added or changed.
- Purchase approved PPE.

Safety Coordinator

- Ensuring employees are trained on the proper use, care and cleaning of PPE.
- Maintaining records on PPE training.

- Ensuring defective or damaged equipment is immediately replaced.

Employees

The PPE user is responsible for the following requirements of the PPE program. This involves:

- Wearing PPE as required.
- Attending required training sessions.
- Caring for, cleaning, and maintaining PPE as required.
- Informing the supervisor of the need to repair or replace PPE.

District

The District is responsible for the development, implementation, and administration of the PPE program. This involves:

- Conducting workplace hazard assessments to determine the presence of hazards which necessitate the use of PPE.
- Conducting periodic workplace reassessments as requested by supervisors.
- Maintaining records on hazard assessments.
- Providing training and technical assistance to supervisor on the proper use, care, and cleaning of approved PPE.
- Providing for the purchase of approved PPE.
- Periodically reevaluating the suitability of previously selected PPE.
- Reviewing, updating, and evaluating the overall effectiveness of the PPE program.

Program Components

Hazard Assessment and Equipment Selection

OSHA requires employers to conduct inspections of all workplaces to determine the need for personal protective equipment and to help in selecting the proper PPE for each task performed. These duties will be done by the District Health and Safety Committee, or other authorized representative.

Once the hazards of a workplace have been identified, the District will determine the suitability of the PPE presently available and as necessary select new or additional PPE which ensures a level of protection greater than the minimum required to protect the employees from the hazards.

Protective Devices

All personal protective clothing and equipment will be of safe design and construction for the work to be performed and shall be maintained in a reliable condition. Only those

items of protective clothing and equipment that meet NIOSH or ANSI (American National Standards Institute) standards will be procured or accepted for use.

PPE purchased must conform to the ANSI standards which have been incorporated into the OSHA PPE regulation, as follows:

- Eye and Face Protection ANSI Z87.1-1989
- Head Protection ANSI Z89.1-1986
- Foot Protection ANSI Z41.1-1991
- Hand Protection*

**The regulation does not specify criteria for the actual equipment to be provided to employees. The standard states, "employers shall base the selection of the appropriate hand protection on an evaluation of the performance characteristics of the hand protection relative to the task to be performed, condition present, duration of use, and the hazards identified."*

Careful consideration will be given to comfort and fit of PPE in order to ensure that it will be used. Protective devices are generally available in a variety of sizes. Care should be taken to ensure the right size is selected.

Eye and Face Protection

Prevention of eye injuries requires that all persons who may be in eye hazard areas wear protective eyewear. This includes employees, visitors, contractors or other passing through an identified eye hazard area.

Suitable protection shall be used when employees are exposed to hazards from flying particles, molten metal, acids or caustic liquids, chemical liquids, gases, or vapors, bioaerosols, or potentially injurious light radiation.

- Side protectors shall be used when there is a hazard from flying objects.
- Goggles and face shields shall be used when there is a hazard from chemical splash.
- Face shields shall only be worn over primary eye protection (safety glasses or goggles).
- For employees who wear prescription lenses, eye protection shall either incorporate the prescription in the design or fit properly over the prescription lenses.
- Protectors shall be marked to identify the manufacturer.
- Equipment fitted with appropriate lenses shall be used to protect against light radiation. Tinted and shaded lenses are not filter lenses unless they are marked or identified as such.

Prescription Safety Eyewear

OSHA requires that each affected employee who wears prescription lenses while engaged in operations that involve eye hazards, wears eye protection that incorporates the

prescription in its design, or wears eye protection that can be worn over the prescription lenses without disturbing prescription safety glasses. Employees must contact their supervisor to have their request for prescription safety glasses processed. The District currently pays half towards prescription safety glasses.

Head Protection

Head protection will be furnished to, and used by, all employees and contractors engaged in construction and while working in traffic work zones. Head protection is also required to be worn by engineers, inspectors, and visitors at construction and work zone sites when hazards from falling or fixed objects are present. Bump caps will be used and worn for protection against scalp lacerations from contact with sharp objects. However, they will not be worn as substitutes for hard hats because they do not afford protection from high impact forces or penetration by falling objects.

Foot Protection

Safety-toed boots are required to be worn at all times. Rubber safety-toed boots are provided for use during wet operations. All safety footwear shall comply with ANSI Z41-1991.

Hand Protection

Suitable gloves shall be worn when hazards from chemicals, cuts, lacerations, abrasions, punctures, burns, biological, harmful temperature extremes are present. Glove selection shall be based on performance characteristics of the gloves, conditions, duration of use, and hazards present. One type of glove will not work in all situations.

The first consideration in the selection of gloves for use against chemicals is to determine, if possible, the exact nature of the substances to be encountered. Read instructions and warnings on chemical containers labels and SDS's before working with any chemicals. Recommended glove types are often listed in the section for personal protective equipment.

Cleaning and Maintenance

It is important that all PPE be kept clean and properly maintained. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision. PPE should be inspected, cleaned, and maintained at regular intervals so that PPE provides the requisite protection. Personal protective equipment shall not be shared between employees until it has been properly cleaned and sanitized. PPE will be distributed for individual use whenever possible.

It is also important to ensure that contaminated PPE, which cannot be decontaminated, is disposed of in a manner that protects employees from exposure to hazards.

Training

Any worker required to wear PPE shall receive training in the proper use and care of PPE. Annual retraining will be offered and shall include, but not necessarily be limited to, the following subject:

- When PPE is necessary to be worn.
- What PPE is necessary?
- How to properly adjust and wear PPE.
- The limitation of the PPE.
- The proper care, maintenance, useful life and disposal of the PPE.

After the training, the employees shall demonstrate that they understand the components of the PPE Program and how to use PPE properly, or they shall be retrained.

Record keeping

Written records shall be kept of persons trained, the type of training provided, and the dates when training occurred. The Assistant General Manager shall maintain those training records in the vault at the Administration Building for at least 3 years. The Assistant General Manager shall also maintain the Job Hazard Assessment for at least 3 years.

Description and Use of Eye/Face Protection

Safety Glasses: Protective eye glasses are made with safety, tempered glass or plastic lenses, temples and side shields which provide eye protection from moderate impact and particles encountered in job tasks such as carpentry, woodworking, grinding, scaling, etc. Safety glasses are also available in prescription form for those persons who need corrective lenses.

Goggles: Vinyl framed goggles of soft pliable body design provide adequate eye protection from many hazards. These goggles are available with clear or tinted lenses, port vented or non-vented frames. Single lens goggles provide worn in combination with spectacles or corrective lenses to insure protective along with proper vision.

Face Shields: These normally consist of an adjustable headgear and face shield of tinted/transparent acetate or polycarbonate materials, or wire screen. Face shields are available in various sizes, tensile strength, impact/heat resistance and light ray filtering capacity. Face shields will be used in operations when the entire face needs protection and should be worn to protect eyes and face against flying particles, metal sparks, and chemical/biological splash.

Welding Shields: These shields assemblies consist of vulcanized fiber or glass fiber body, a ratchet/button type adjustable headgear or cap attachment and a filter and cover

plate holder. These shields will be provided to protect worker's eyes and face from infrared or radiant light burns, flying sparks, metal spatter and slag chips encountered during welding, brazing, soldering, resistance welding, bare or shielded electric arc welding and oxyacetylene welding and cutting operations.

Filter Lenses for Protection against Radiant Energy

Operations	Electrodes Size in 1/32 in	Arc Current	Minimum Protective Shade
Shielded metal arc welding	less than 3	less than 60	7
	3-5	60-160	8
	5-8	160-250	10
	more than 8	250-550	11
Gas metal arc welding		less than 60	7
And flex cored arc welding		60-160	10
		160-250	10
		250-500	10
Air carbon	(light)	less than 500	10
Arc cutting	(heavy)	500-1000	11
Torch brazing			3
Torch soldering			2

Operations Inches	Plate thickness mm	Plate thickness Protective	Minimum Shade
Gas welding:			
Light	under 1/8	under 3.2	4
Medium	1/8 to ½	3.2 to 12.7	5
Heavy	over ½	over 12.7	6
Oxygen cutting:			
Light	under 1	under 25	3
Medium	1 to 6	25 to 150	4
Heavy	over 6	over 150	5

**As a rule of thumb, start with a shade that is to dark to see the weld zone. Then go to a lighter shade which gives sufficient view of the weld zone without going below the minimum. In oxyfuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light of the (spectrum) operation.*

Head Protection

Head injuries are caused by falling or flying objects, or by bumping the head against a fixed object. Head protectors, in the form of protective hats, must resist penetration and absorb the shock of a blow. The shell of the protective hat is hard enough to resist the blow and the headband and crown straps keep the shell away from the wearer's skull. Protective hats can also protect against electric shock.

Protective hats are made in the following types and classes:

- **Type 1**-helmets provide protection for the top of your head
- **Type 2**-helmets provide some degree of top and off-center protection

For industrial purposes, three classes are recognized:

- **Class G - (general)** general services, limited voltage protection; (formally class A)
- **Class E - (electrical)** utility services, limited voltage protection; (formally class B)
- **Class C - (conductive)** special service, no voltage protection;(no change in class)

Class G is intended for protection against impact hazards. They are used in mining, construction, and manufacturing.

Class C is designed for lightweight comfort and impact protection. Used in certain construction, manufacturing and where there is a possibility of bumping the head against a fixed object.

Foot Protection

There are many types of protective footwear. Footwear that meets established safety standards will have an American National Standards Institute label inside each boot. The District will buy each employee safety-toed, insulated, red rubber boots and safety-toed hip boots. The District will provide each employee whose job description requires safety-toed work boots with $200 from the safety account to pay for leather, safety-toed safety boots that have a six inch minimum boot height.

Hand Protection

Skin contact is a potential source of exposure to toxic materials; it is important that the proper steps be taken to prevent such contact. Most accidents involving the hands and arms can be classified under four main hazard categories: chemicals, abrasions, cutting, and heat. There are gloves available that can protect workers from any of these individual hazards or any combination thereof.

Gloves should be replaced periodically, depending on frequency of use and permeability of the substance(s) handled. Gloves overtly contaminated should be rinsed and then carefully removed after use.

Gloves should also be worn whenever it is necessary to handle rough or sharp-edged objects, and very hot or very cold materials. The type of glove materials to be used in these situations include: leather, welder’s gloves, and other type of insulated glove materials.

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Careful attention must be given to protecting your hands when working with tools and machinery. Power tools and machinery must have guards installed or incorporated into their design that prevents the hands from contacting the point of operation, power train, or other moving parts. To protect hands from injury due to contact with moving parts, it is important to:

- Ensure that guards are always in place and used.
- Always lock-out machines or tools and disconnect power before making repairs.
- Treat a machine without a guard as inoperative; and
- Do not wear gloves around moving machine such as drill presses, mills, lathes and grinders.

The following is a guide to the most common types of protective work gloves and types of hazard they guard against:

Disposable Gloves. Made of light-weight plastic, can help guard against mild irritants.

Fabric Gloves. Made of cotton or fabric blends are generally used to improve grip when handling slippery objects. They also help insulate hands from mild heat or cold.

Leather Gloves. These gloves are used to guard against injuries from sparks, or scraping against rough surfaces.

Chemical Resistance Gloves. These gloves may be made of rubber, neoprene, polyvinyl alcohol, or vinyl, etc. The glove protects hands from corrosives, oils, solvents, and wastewater. When selecting chemical resistance gloves, be sure to consult the manufacturer's recommendations, especially if the gloved hand will be immersed in chemical.

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Appendix A – Hazard Assessment

JOB	HAZARD	CONTROL
1. Handling acids and caustics, polymers	Splashing, burns, eyes, hands, body, inhaling vapors and fumes	Wearing impervious gloves, protective sleeves, aprons, safety goggles, when working under hoods, face shields, respirators, eye bath, and deluge shower.
2. Cleaning wet wells, sumps, presses, sewers and tanks	Splashing, falling into wastewater entering nose, ears, or mouth, toxic gases, oxygen deficiency	Wearing rain suits, boots with traction soles, face shields, goggles, gloves, steel toe safety shoes, hard hat
3. Brazing, welding, cutting, soldering	Hot sparks, intense rays, molten metal, affecting skin and eyes, smoke, fumes from welding processes	Leather gloves, jacket, aprons, pants, chaps, welding screens to protect others from light rays, welders hood, goggles, mechanical ventilation for confined space
4. Cutting grass, weeds	Flying grass, weeds, stems, stones, debris bouncing off structures, sunburn	Heavy leather shoes, long pants, steel toe safety shoes, long sleeved shirt or sunscreen for sun exposure, safety glasses and ear muffs. When weed whacking the wood cutters hard hat with attached ear muffs must be worn. Hard hat for areas with overhead hazards
5. Cleaning machinery	Slipping of wrenches, bumping against rough and rusted parts, slippery footing	Gloves, lockout/tagout procedures, barrier creams steel toe safety boots with traction soles

6. Working in confined spaces such as street access holes, open or closed tanks	Concrete abrasion, steel rust abrasion, grease, grit and grime. Bumps, scrapes; rubbing bumps with dirty hands or gloves, starting infections in wounds, rope burns, dropping heavy objects, street access hole covers, frames and masonry units back strains and sprains, gas (toxic and combustible), oxygen deficiency, explosions.	Rubber gloves,heavy cotton coveralls, rubberized clothing, boots with traction soles, hard hats, personal hygiene. Use proper lifting techniques or mechanical equipment aids, ventilation of space, constant monitoring gas detection and O_2 deficiency meter, tripod and harness, first aid kits, explosion proof lights.
7. Digging equipment tampers, heavy objects	Smashing toes, breaking bones in feet, dropping heavy objects, gasoline and vapors	Hearing protection, gloves steel toed safety shoes, hard hat and goggles. Use care around combustibles.
8. Hand tools	Wrong tools cause injury, flying metal, concrete. Cut, abrasions, bruises and blisters.	Use correct tool for job. Do not use pipe extensions on small drive wrenches. Wear gloves, long sleeves, and eye protection. Keep handles and all parts of tools in good repair.
9. Outside exposure, walking on snow and ice clearing walkways.	Rain, snow, ice. Slips and falls, sprains and strains of the back.	Rain suits of high visibility yellow, rubber safety boots with deep cleats, lifting light loads with shovels, throwing snow short distances, use of snow blowers or vehicular plows when available.
10. Painting	Skin irritation, fire, lead poisoning, eye and respiratory problems	Wear gloves. Use "wet paint" signs, do not eat until cleaned and washed up. Avoid solvents

		to clean skin. Wear goggles and respirator with appropriate cartridge filter.
11. Power tools	Flying chips, dust, or splinters	Face shield, gloves, hearing protection. Use the power tool guards.
12. Traffic Hazards	traffic	ANSI Class II Vest

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Appendix A – Eye Protection by Application

Operations	Hazards	Protector
Acetylene burning Acetylene cutting Acetylene welding	Sparks, harmful rays molten metal flying particles	Welding goggles
Chemical handling	Splash, acid burns, fumes	Goggles (face shield for severe exposure), Safety Glasses
Chipping	Flying particles	Goggles, safety glasses with side shields
Furnace operations	Glare, heat, molten metal	Goggles, face shield for severe exposure.
Grinding	Flying particles shields, face shield	Goggles, glasses with side
Laboratory	Chemical splash, glass breakage	Safety glasses, face shield in combination with glasses, Goggles
Machining	Flying particles	Goggles, safety glasses with side shields, face shield
Molten metals	Heat, glare, sparks, splash	Goggles, face shield with tinted glasses
Spot and Electric (arc) welding	Flying particles, sparks, blindness (contact lens adhesion to cornea) intense rays	Goggles, safety glasses with side shields, tinted lenses advisable, for severe exposure face shield, welding helmet, glasses with tinted lenses for helpers