HEALTH AND SAFETY PROCEDURE 300 – Personal Protective Equipment

1.0 PURPOSE

Westlake, Plaquemine Operations (Westlake), has developed this program to minimize potential accidents, injuries, and to enhance employee protection. The Personal Protective Equipment Program establishes responsibilities for the selection, use, and maintenance of personal protective equipment.

The primary way to protect employees from chemical, physical, and biological hazards is at the source, through engineering controls. When engineering controls are not feasible, then an additional level of protection is required.

The purpose of Personal Protective Equipment (PPE) is to shield or isolate employees from chemical, physical, and biological hazards that may be encountered at Westlake. It is Westlake's policy to protect employees from safety and health hazards, to prevent injury to employees from incorrect use and/or malfunction of personal protective clothing and equipment, and to provide a safe working environment. Careful selection and use of PPE can protect the respiratory system, skin, eyes, face, hands, feet, head, body, and hearing from hazards.

The Personal Protective Equipment Program does not include requirements for respiratory protection, hearing protection and blood borne pathogens. These requirements are detailed in Westlake's Respiratory Protection, Hearing Conservation Programs, and Blood Borne Pathogens Exposure Control programs.

2.0 SCOPE

This program applies to all Westlake's employees, visitors, vendors and contract employees.

3.0 DEFINITIONS

3.1 **Breakthrough Time -** The elapsed time between initial contact of a chemical with the outside surface of a protective material and the initial detection of that chemical on the inner surface of the material.

3.2 **Chemical Protective Clothing -** Includes all items of clothing primarily intended to prevent chemical contact with the skin. These include gloves, coveralls, pants, jackets, and boots.

3.3 **Degradation -** The loss of chemical resistance or physical competency of a protective material. This may occur due to chemical contact or physical wear and abrasion.

3.4 **Flame Resistant Clothing (FRC) -** Clothing made with a fabric that is treated with a flame retardant to have the characteristic to resist ignition and to self-extinguish if ignited.

3.5 **Flame Retardant** - A chemical substance used to impart flame resistance - not part of the basic fibers chemistry. Flame retardant treatments can diminish overtime or with use.

3.6 **Fully Encapsulating Suit -** A one-piece garment that completely encloses the wearer.

3.7 **Permeation -** The movement of a gas or liquid contaminant through a material by diffusion. Permeation can occur through materials even when no pinholes or tears are present.

3.8 **Penetration -** The bulk movement of liquids through pores or small flaws in chemical protective clothing. Penetration may occur through imperfect seams, zippers, or pinholes.

3.9 **Permeation Rate -** The quantity of chemical that will move through an area of protective material in a given time. It is usually expressed in micrograms of chemical permeated per square centimeter per minute of material ($\mu g/cm^2/min$).

3.10 **Permissible Exposure Limit (PEL) -** OSHA's established time-weighted average (TWA) concentration, ceiling concentration (C) or short term exposure limit (STEL) of a chemical contaminant that may not be exceeded.

3.11 **Personal Protective Equipment (PPE) -** Garments and/or devices worn by an employee to provide protection against various potential hazards. Examples of PPE include, but are not limited to; hard hats, safety glasses, fall limiting harnesses, impervious gloves or clothing, and respiratory protection.

3.12 **Safety Data Sheet (SDS) -** Written or printed material concerning a hazardous chemical, which includes information regarding the specific identity of the hazardous chemical. An SDS also includes information on health effects, first aid, chemical and physical properties, and emergency

phone numbers.

3.13 **Threshold Limit Value (TLV) -** The American Conference of Governmental Industrial Hygienist's (ACGIH's) established TWA airborne chemical concentration in which most people can work consistently for 8 hours a day, day after day, with no harmful effects.

4.0 RESPONSIBILITIES

4.1 Health and Safety

4.1.1 Train Department Supervision and employees in the selection, use, and limitations of personal protective equipment (PPE).

4.1.2 Assist Department Supervision in the selection of PPE.

4.1.3 Document the basis for all PPE selection decisions.

4.1.4 Coordinate the purchase of all PPE with the purchasing department.

4.1.5 Based on workplace evaluations, determine the type or types of PPE to be worn.

4.1.6 Notify contractors of Westlake's PPE Program during initial Safety Orientation.

4.1.7 Audit the PPE Program at least every three years.

4.2 Department Supervision

4.2.1 Learn, understand, and follow Westlake's PPE Program.

4.2.2 Evaluate area of the plant for which they are responsible for PPE use.

4.2.3 Obtain H&S approval prior to requisitioning of new PPE.

4.2.4 List the PPE required for particular tasks on safe work permits.

4.2.5 Ensure that employees expected to use PPE have been trained.

4.2.6 Enforce the correct selection and use of PPE in areas for which they

are responsible.

4.2.7 Discipline non-compliant employees according to Company's personnel policies.

4.2.8 Ensure that employees properly inspect, clean, and maintain all PPE.

4.2.9 Notify H&S of any process/material change or any change that can impact PPE needs.

4.3 Employees

4.3.1 Learn, understand, and follow Westlake's PPE Program.

4.3.2 Inspect PPE before, during, and after use as appropriate.

4.3.3 Use only properly selected PPE for the prescribed work.

4.3.4 Return used PPE to the Tool Room, or inspect, clean, maintain, and store all PPE after each use.

4.3.5 Notify Department Supervision as soon as possible if PPE is not providing the protection expected.

4.3.6 Notify Department Supervision for maintenance of any piece of PPE.

4.4 Contractors

4.4.1 Implement a PPE Program for their employees.

4.4.2 Contractors must meet or exceed a PPE Program complying with OSHA's 29 CFR 1910. "General Industry Standards."

4.4.3 Contractor employees are required to use Westlake's PPE Program for any work performed at the plant.

4.5 Stores

4.5.1 Properly store and maintain all PPE.

4.5.2 Inspect PPE before issuing equipment to employees.

4.6 Tool Rooms

4.6.1 Properly store and maintain all PPE.

4.6.2 Remove from service any PPE found or returned defective.

4.6.3 Inspect PPE before issuing equipment to employees.

5.0 PROCEDURE

5.1 Minimum Requirements

5.1.1 Hard hats, eye protection, approved footwear, and escape respirators are the minimum PPE requirements for any in-plant activity, and must be worn by each Westlake employee, contractor employee, vendor, or visitor while in the plant. All safety equipment must be worn in an office or building if a hazard exists that could cause injury. Flame Resistant Clothing (FRC – as explained in HSP-112) is required for all work in process and electrically classified areas.

5.1.2 At least ***annually***, the site will assess PPE requirements through hazard analysis and assessments, namely a Job Hazard Analyses (JHA) for physical hazards and the Chemical Risk Register for chemical hazards. These assessments will be reviewed and updated by the site Safety Involvement Team (SIT) and Unit SIT teams, with HSE and Industrial Hygiene department support. SIT and USIT teams will:

- Include all names of members of the assessment team and the date(s) of review on the document
- Ensure JHA and Chemical Risk Registers are posted and maintained within the respective unit
- Inform Unit Personnel of the posting location within the unit
- Ensure assessments are updated for MOCs and/or when new hazards are introduced to the process
- Collaborate with Unit Trainers to ensure JHA and Chemical Risk Registers are reviewed during Unit Orientation for new employees

5.2 Hard Hats

5.2.1 Hard hats are required for all personnel while within the plant boundaries.

5.2.2 All hard hats must meet the requirements of the American National Standards Institute (ANSI Z89.1) "American National Standard for

Industrial Head Protection."

5.3 Eye Protection

5.3.1 Safety glasses with side shields are required within the fence line of the plant with the following exceptions:

- Office buildings Lunch rooms
- Designated smoking areas Control rooms
- Vehicle cabs
- Main gate parking area Main Lab entrance

5.3.2 Prescription safety glasses are available at no charge to Westlake employees.

5.3.3 Contact lenses are permitted in conjunction with required eye protection.

5.3.4 Dark lenses are not to be worn at night or indoors where lighting is limited.

5.3.5 Safety glasses, including all components (frames, lenses, and side shields) shall conform to (ANSI Z87.1) "American National Standard for Occupational and Educational Personal Eye and Face Protection Devices." Slip-on, flimsy plastic side shields are not permitted.

5.3.6 Additional eye protection (i.e., face shield, welding hood, goggles, etc.) shall be worn as determined by the hazard associated with the tasks to be performed. Selection guidelines based on the type of hazard present are presented in the Appendix A - "Selection Chart Guidelines for Eye and Face Protection."

5.4 Mono-Goggles

5.4.1 Goggles must be on your person in operating areas. Mono-goggles must be worn with the strap in direct contact with the head and in no way affixed to the hard hat while in use.

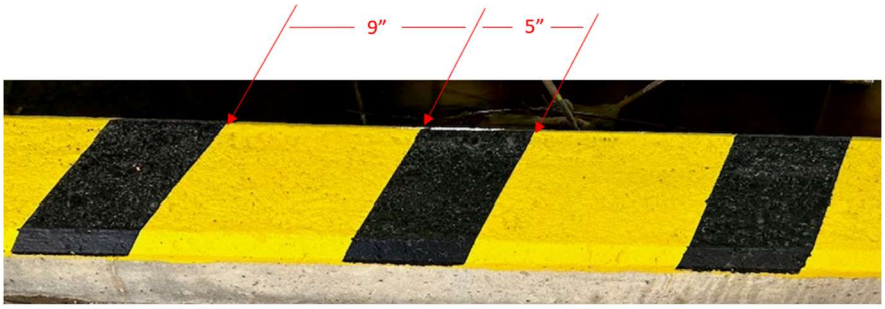
NOTE: Retainer Rings are not permitted on site (See appendix E).

5.4.2 Approved goggles may be worn in place of safety glasses. They must

be fitted properly to the worker's face to form a protective seal around the eyes.

5.4.3 Goggles are required in lieu of safety glasses when:

- In areas posted "Mono-goggles Required"; at a minimum, identified by a yellow background with black 5" angled stripes spaced 9" apart and signs with the wording "Mono-goggle Area" placed so that the area is clearly identified.



- There is a danger of chemical splash
- Working with acids or caustics
- Adequate eye protection cannot be obtained from glasses

5.4.4 Safety glasses and face shield cannot be used in lieu of mono-goggles.

5.5 Safety-Toed Footwear:

5.5.1 Safety-toed, non-porous footwear meeting ANSI Z41-1999 or ASTM F2413-11 are required in the following areas:

- Process Areas
- Construction, Laydown, and Fabrication areas
- Maintenance shops, Warehouses, and Stores
- Labs
- Dock and other loading areas

***Exceptions include but not limited to office areas and control rooms.**

5.5.2 Safety-toed, non-porous footwear is also required inside the fence line when conducting work activities that introduces struck-by or contact with foot hazards such as loading chemicals or materials, or performing maintenance on the roadway or railway.

5.5.3 Open-toed and open-heeled shoes are prohibited inside the fence line of the Facility.

5.5.4 Departmental procedures may require additional protection.

5.5.5 Dielectric safety-toed rubber boots must be worn while walking in the chlorine cell area in the Chlorine Alkali unit.

5.5.6 Safety-toed rubber boots are approved for high water areas and chemical protection.

5.6 Escape Respirators

5.6.1 Each Westlake employee, contractor employee, vendor, or visitor must have an escape respirator with an acid gas cartridge with them at all times when in the plant. Escape respirators must be maintained in accordance with Westlake's Respiratory Protection Program (HSP-401).

5.7 Flame Resistant Clothing (FRC)

5.7.1 Appropriate flame resistant clothing, as explained in HSP-112, shall be worn by all personnel.

5.8 Hand Protection

5.8.1 Gloves must be worn in all operating areas. It is acceptable to remove gloves as needed to perform a specific task requiring dexterity. When the task is completed, personnel shall reapply their gloves.

5.8.2 Gloves must be selected based on the specific hazard according to the job.

5.8.3 Gloves worn in chemical service must be impervious to the chemicals involved.

NOTE: If wearing gloves creates a hazard while performing a certain task (i.e. working with rotating equipment), gloves shall not be worn.

5.9 PPE Selection

5.9.1 Protective clothing is selected based upon an evaluation of the potential hazards present:

- Routes of entry;
- Physical characteristics;
- Toxicological properties;
- Type of work to be conducted; and
- The chemical and physical performance or resistive characteristics required of the clothing.

5.9.2 The protection provided by different types of protective equipment is described in the appendices - "Protective Clothing and Accessories." In using the table in Appendix B, first determine what portion of the body needs protection, and then select the protective clothing or accessory that will provide the desired type of protection.

5.9.3 H&S will use published literature, such as the American Conference of Governmental Industrial Hygienists' "Guidelines for the Selection of Protective Equipment," and Safety Data Sheets (SDSs) as guidelines in making determinations as to what is appropriate protective equipment for a given chemical, physical or biological hazard.

5.10 Chemical-Protective Clothing

5.10.1 Chemical-protective clothing in addition to the normal use of FRC may be required and is available in a variety of materials that offer a range of protection against different chemicals. The most appropriate clothing materials will depend on the chemicals present and the task to be accomplished. Ideally, the chosen material will resist permeation, degradation, and penetration.

5.10.2 When selecting chemical-protective clothing, the following questions should be considered:

- Is the substance hazardous to the skin, eyes, or respiratory system?

- What is the oxygen concentration?
- What is the atmospheric hydrocarbon concentration?
- Is the substance or concentration flammable or explosive?
- Will the work involve radiant heat?
- What is the breakthrough time of chosen PPE for a given substance?
- Does the substance degrade the PPE material?
- What are the physical features of the PPE?
- Can the duration of the task be adjusted to allow use of different PPE?
- Do personnel know how to use the selected PPE? And
- Is there an adequate stock of the selected PPE?

NOTE: The first question directs attention to selecting protective equipment appropriate for the portion of the body at risk; the skin, eyes, or respiratory system. The next two questions (oxygen concentration and hydrocarbon concentration), help assure an adequate level of respiratory protection is selected. Westlake's Respiratory Protection Program describes the selection of respirators in greater detail.

5.10.3 If the task or job requires work under flammable or explosive conditions, firefighters' protective clothing or a proximity garment (approach suit) may be necessary. Generally, the degree of hazard would be reduced by engineering means such as ventilation before employees are allowed to perform the work. Proximity garments can provide short term protection from radiant heat. Cooling vests and suits are also available to provide some protection in hot environments.

5.10.4 H&S provides assistance in evaluating the suitability of clothing materials for chemical protection. When a material for chemical-protective clothing is selected, one has to assure the breakthrough time

for the chosen PPE is not less than the time it will take to accomplish the task. Breakthrough times can be found in guidebooks, or manufacturer's literature, and PPE selection software.

5.10.5 Once protective clothing has been identified that will provide appropriate chemical protection, additional considerations for PPE use that need to be considered are:

- Training personnel in the use of the selected PPE;
- How flexibility and other physical features of the PPE will affect job performance;
- Maintaining an adequate stock of PPE; and
- The ability of the PPE to resist abrasion and chemical degradation.

5.10.6 These additional considerations examine the compatibility of the protective equipment with the task to be accomplished. Physical limitations created by the use of protective equipment may interfere with the ability to accomplish a desired task.

5.11 Levels of Protection

5.11.1 Level A

- Level A protection is required when the greatest potential for exposure to hazards exists, and when the greatest level of skin, respiratory, and eye protection is required. The following are examples of appropriate Level A equipment:
  - Positive pressure, full face-piece self-contained breathing apparatus (SCBA) or positive pressure supplied air respirator with escape SCBA;
  - Totally encapsulating gas tight chemical-protective suit;
  - Inner and/or outer chemical-resistant gloves; and
  - Outer chemical-resistant boots.

NOTE: All totally-encapsulating suits must be capable of preventing inward test gas leakage of more than 0.5% as required by OSHA's 29 CFR 1910.120 "Hazardous Waste Operations and Emergency Response".

- Meeting any of the following criteria warrants use of Level A protection:
  - Hazardous substances have been identified and require the highest level of protection for skin, eyes, and the respiratory system
  - Site operations involve a high potential for splash, immersion, or exposure to unexpected materials that are harmful to the skin;
  - Direct-reading instruments indicate high levels of unidentified vapors or gases in the atmosphere.
- It may be necessary to base the decision to use Level A protection on indirect evidence. Other conditions that may indicate the need for Level A protection include:
  - Confined spaces; (See Westlake's HSP 202 - Confined Space Procedure)
  - Suspected or known highly toxic substances, especially when field equipment is not available to test concentrations;
  - Visible indicators such as leaking containers or smoking chemical fires; and
  - Potential dangerous tasks, such as initial site entry.
- Any time Level A is required the following must be completed before work may begin:
  - A pre-job planning meeting must be scheduled to include operations, maintenance, H&S, and the contract safety representative of the group who will be required to work in Level A.
  - The pre-job check list must be filled out and signed. (See Appendix D – Westlake's Level "A" PPE Checklist).

- Prior approval of the Manufacturing Manager must be obtained.
- A representative from H&S and the safety coordinator of the contract group physically doing the work must be present at the site while the work is being done.

5.11.2 Level B

- Level B protection is required under circumstances requiring the highest level of respiratory protection, with a lesser level of skin protection. Potential Level B equipment includes:
  - Positive pressure, full face-piece SCBA or positive pressure supplied air respirator with escape SCBA;
  - Inner and/or outer chemical-resistant gloves;
  - Hooded chemical resistant clothing;
  - Coveralls; and
  - Outer chemical-resistant boots.
- Meeting any of the following criteria warrants use of Level B protection:
  - The type and atmospheric concentration of substances have been identified and require a high level of respiratory protection, but less skin protection than Level A;
  - The atmosphere contains less than 19.5 percent oxygen; or
  - The presence of incompletely identified vapors or gases is indicated but they are not suspected of being harmful to the skin.

5.11.3 Level C

- Level C protection can only be utilized when the concentration and type of airborne substances is known, and the criteria for using air purifying respirators is met. Typical Level C equipment includes:

- Full-face air purifying respirators;
- Inner and outer chemical-resistant gloves,
- Hard hats,
- Escape mask; and
- Disposable chemical-resistant, outer boots.

- Meeting any of the following criteria warrants use of Level C protection:
  - The atmospheric contaminants, liquid splashes or other direct contact will not adversely affect or be absorbed by the skin;
  - The types of air contaminants have been identified, concentrations do not exceed IDLH levels, and an air-purifying respirator is available that can remove the contaminants; and
  - Oxygen concentrations are not less than 19.5 percent by volume, and job functions do not require SCBA.

- Level C protection is distinguished from Level B by the equipment used to protect the respiratory system, assuming the same type of selection criterion for Level C is that atmospheric concentrations and other selection criteria permit wearing an air-purifying respirator.

5.11.4 Level D

- Level D is the minimum protection required. Appropriate Level D protective equipment may include:
  - Gloves;
  - Coveralls;
  - Hard Hat
  - Safety Glasses;
  - Face Shield

- Chemical resistant steel-toed boots or shoes.

- This type of protection is sufficient under the following conditions:

  - No contaminants are present above their permissible exposure limits; or;

  - Work operations preclude splashes, immersion, or the potential for unexpected inhalation of or contact with hazardous levels of any chemicals.

- While these are guidelines for typical equipment to be used in certain circumstances, other combinations of protective equipment may be more appropriate, depending upon specific site characteristics. As an aid to selecting appropriate protective wear, it is recommended that chemical protective suits meet the standards developed by the National Fire Protection Association (NFPA).

5.12 Use and Limitations of PPE

- No single set of protective equipment is designed to protect the wearer from all potential hazards. PPE users need to know the limitations of the equipment. Training and familiarization with the equipment will help the user understand the limitations of their PPE.

5.12.1 PPE Use

- When employees select PPE, general considerations which enter into the decision must include:

  - PPE fit;

  - Required protection level;

  - Likelihood of direct contact with materials;

  - Duration of the work tasks;

  - Compatibility with other equipment;

  - Equipment durability;

- Equipment flexibility; and
- Ease of decontamination.

- When using PPE, employees need to be aware of and watch for changes in the protective equipment. Particularly, the wearer's need to watch for signs of degradation of the equipment perception of odors, skin irritation, discomfort, and fatigue.

5.12.2 PPE Limitations

15.12.2.1 Protective equipment materials are not compatible with all potential hazards.

15.12.2.2 PPE must be selected based on the amount of information that can be obtained about the hazard.

15.12.2.3 PPE use is also limited by the user's ability to withstand the stresses of temperature and restricted movement while wearing protective equipment. These and other factors will affect the length of time protective equipment can be worn.

5.13 Electrical Protection

5.13.1 All employees working in areas where there are potential electrical hazards must be provided with, and use approved electrical protective equipment that is appropriate for the specific body parts to be protected for the work to be performed.

5.13.2 All rubber protective equipment for electrical workers must conform to the requirements established by the American National Standards Institute (ANSI J6.1 - J6.7 1970).

5.13.3 Employees must wear non-conductive head protection wherever there is a danger of head injury from electric shock or burns due to contact with exposed energized parts.

5.13.4 Employees must wear eye or face protective equipment wherever there is danger of injury to the eyes or face from electrical arcs or flashes, or from flying objects resulting from electrical explosions.

5.13.5 When working near energized conductors or circuit parts, each employee must use insulated tools or insulated handling equipment

if the tools or handling equipment might make contact with such conductors or parts.

5.13.6 Protective shields, protective barriers, and/or insulating materials must be used to protect each employee from shock, burns, or other electrical related injuries while the employee is working near exposed energized parts which might be accidentally contacted, or where dangerous electric heating or arcing might occur.

5.14 Emergency Response

5.14.1 Emergency Responders

- Emergency response employees must be trained in the proper use, care, and limitations of the personal protective equipment to be worn. Training must be completed before they are called upon to perform tasks in real emergencies (see Westlake's Emergency Response Program).

- Based on the hazardous substance and/or conditions present, the Incident Commander must ensure that the personal protective equipment worn is appropriate for the hazards to be encountered.

- The PPE selection must be based on the evaluation of the PPE's performance characteristics, relative to the requirements and limitations of the site, the task-specific conditions, and duration, and the hazards and the potential hazards identified at the incident response site.

- Totally-encapsulating, chemical-protective suits must be used in conditions where skin absorption of a hazardous substance may impair the ability to escape, or result in a substantial possibility of serious illness, injury, or death.

5.14.2 Fire Brigade Protective Clothing

- Fire brigade members require protective clothing that will provide protection from fire and resist puncture or abrasion hazards that might be encountered when fighting both exterior and interior structural fires.

- Fire Brigade protective equipment must meet all requirements of OSHA's 29 CFR 1910.156(e) "Fire Brigade - Protective Clothing."

- Protective clothing must protect the head, body, and extremities and consist of the following components:
  - Foot and leg protection;
  - Hand protection;
  - Body protection; and
  - Eye and face protection.

5.15 Protective Equipment for Welding

5.15.1 Protective equipment used for welding, cutting, and brazing must meet the requirements of OSHA's 29 CFR 1910.252. Welding, cutting, and brazing requires protection from heat, sparks, and radiant energy, in addition to chemical or physical hazards that might be present in the absence of welding. Specialized requirements applicable to welding, cutting, and brazing include:

- Using helmets and hand shields made of non-conducting and heat insulating materials;
- Protecting the face, neck, and ears from direct arc energy; and
- Using shaded lenses to protect the eyes from radiant energy;
- When working in an area where hard hats are required welding hoods must be properly mounted on an approved hard hat.

5.16 Marine Docks

5.16.1 Approved life jackets are required for all personnel working on marine docks and over other bodies of water where personnel are not protected by full-body restraining devices.

5.16.2 Life jackets are required when working on vessels tied to either dock or when working aboard water craft in the vicinity of the dock.

5.16.3 All life jackets used must be approved by the U.S. Coast Guard as a Type III PFD or Type V PFD.

5.16.4 Prior to each use, life jackets must be inspected for dry rot, chemical damage, or other defects which may affect their strength and

buoyancy.

5.17 PPE Storage and Maintenance

5.17.1 Storage

- All PPE must be stored properly to prevent damage or malfunction due to contact with dust, moisture, sunlight, damaging chemicals, extreme temperatures, and impact.
- PPE storage practices should be based on the following considerations:
  - Storage locations;
  - Storage climate;
  - Equipment access; and
  - Equipment inventory.
- When PPE is received, the manufacturer's specifications should be reviewed for the suggested storage temperature, sunlight, or other requirements.
- Supplies of various PPE will be maintained and stored in accordance with manufacturer's recommendations.

5.17.2 Storage Access

- PPE access will remain controlled to protect the stock integrity by Stores.
- Employees can acquire necessary PPE from Stores or Tool Rooms. If employees need help in acquiring necessary PPE, they may ask their supervisor for assistance.

5.17.3 PPE Inventory

- Stores will be responsible for a PPE inventory log that documents current stock levels.
- Inventory will change due to new stock receipt, use of current stock, or removal of outdated material.

- The equipment log will need monthly updating to reflect these changes.

- The log tracks the total stock of each item in inventory.

5.17.4 Maintenance Considerations

- The Tool Rooms will be responsible for maintenance of any used PPE.

- Tool Rooms will take out of service any PPE damaged or not repairable.

- The following considerations should be addressed when establishing an on-going maintenance routine:

  - Manufacture's maintenance specifications;

  - Special training requirements as recommended by the manufacturer;

  - Special tools; and

  - Equipment shelf life.

- The most important considerations are the manufacturer's specifications or maintenance guidelines. These should be thoroughly reviewed.

- PPE shelf life should be considered when setting the maintenance frequency. Frequency should not exceed one-half the shelf life of the equipment to allow ample time for equipment replacement.

6.0 TRAINING

6.1 Annual Personal Protective Equipment Program training for all employees assigned to plant operating areas will be completed. Documentation will be maintained by the H&S Department.

6.2 All new employees will receive appropriate Personal Protective Equipment Program training prior to performing any plant-related tasks.

6.3 PPE training shall include:

6.3.1 When PPE is necessary;

6.3.2 What PPE is necessary;

6.3.3 How to properly don, doff, adjust, and wear PPE;

6.3.4 The limitations of the PPE; and

6.3.5 The proper care, maintenance, useful life, and disposal of the PPE.

6.4 Employees shall demonstrate their understanding of the training and the ability to use PPE properly, before being allowed to perform work requiring the use of PPE.

6.5 Employees will be re-trained in the PPE Program for any updated procedures or whenever changes in job assignment or process equipment and machinery occur.

6.6 Retraining will be conducted whenever a periodic inspection reveals that employees are not fully aware of, or are not following established procedures, or if regulatory requirements change.

7.0 RECORDKEEPING

7.1 The Training Supervisor in each unit will maintain employee training records.

7.2 H&S will maintain PPE selection decision documentation.

7.3 Stores will maintain records of all PPE purchased and inventoried for Westlake.

8.0 PROCEDURE REVIEWS

8.1 The Westlake's PPE Program will be reviewed at least every three years. H&S will ensure this review is performed. The purpose of reviewing is to assess compliance, to ensure that all employees who should be included in the PPE Program are, and to evaluate program effectiveness.

8.2 The review will examine:

8.2.1 The current PPE Program;

8.2.2 Employee training records;

8.2.3 Current Stores inventory;

8.2.4 PPE selection, use, and maintenance practices;

8.2.5 Employee awareness; and

8.2.6 Contractor awareness.

8.3 Following the review, the Personal Protective Equipment Program may be revised to include any necessary changes. Review results will be documented.

8.4 Department Managers will be informed of review results. After being informed of the review results:

8.4.1 Safety Involvement Team will develop corrective action plans and schedules to address any deficiencies documented during reviews.

8.4.2 Corrective action plans will be submitted to H&S.

8.5 In the event of an accident in which PPE was a contributing factor, an investigation will be conducted following procedures outlined in Westlake's Emergency Response Program.

9.0 REFERENCES

9.1 American Conference of Governmental Industrial Hygienists, Inc. (February 1987), "Guidelines for the Selection of Chemical Protective Clothing," 3rd edition., Vol. 1 and 2, Cincinnati, OH.

9.2 American National Standards Institute (1989). "Practice for Occupational and Educational Eye and Face Protection," ANSI Z87-1989, New York, NY.

9.3 Occupational Health and Safety Administration's 29 CFR 1910.120 (September 1983). "Hazardous Waste Operations and Emergency Response."

9.4 Occupational Health and Safety Administration's 29 CFR 1910 Subpart I (July 5, 1994). "Personal Protective Equipment."

9.5 Occupational Health and Safety Administration's 29 CFR 1910.156 (April 30, 1984). "Fire Brigades."

9.6 Occupational Health and Safety Administration's 29 CFR 1910.252 (June 1990). "Welding, Cutting and Brazing -- General Requirements."

9.7 Occupational Health and Safety Administration's 29 CFR 1910.335 (July 22, 1977). "Safeguards for Personal Protection."

9.8 Occupational Health and Safety Administration's 29 CFR 1915.154 (April 20, 1982). "Life Saving Equipment."

9.9 Occupational Health and Safety Administration's 29 CFR 1917.95 (July 5, 1983). "Personal Protection."

9.10 National Institute for Occupational Safety and Health (NIOSH), Occupational Safety and Health Administration (OSHA), U.S. Coast Guard (USCG), and U.S. Environmental Protection Agency (EPA), (October 1985), "Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities," OHHS (NIOSH) Publication No. 85-115, Cincinnati, OH.

10.0 APPENDICES

10.1 Appendix A - OSHA's 29 CFR 1910 Subpart I - "Personal Protective Equipment" Selection Chart Guidelines for Eye and Face Protection.

10.2 Appendix B - Protective Clothing and Accessories.

10.3 Appendix C - Hazard Assessment and Equipment Certification.

10.4 Appendix D - Westlake’s Level "A" PPE Checklist.

10.5 Appendix E - Mono-goggle Retainer Rings

Revision History

Rev	Changes	Approved	Date
8	Westlake Branding. Review Cycle. Added revision history. Added new PPE Changes. *MOC: PLQ0.EHSSPSM.031517.3117*	H. Garner	3/15/2017
9	*5.1.2 – Updated to include requirements for PPE Assessments to annual review by SIT & USIT teams.*	H. Garner	10/12/2018
9	*No content change. Updated logo, added "Review Date" to header.*	H. Garner	03/16/2023
10	*Section 5.4.3 – Update to require all monogoggle areas to be painted with yellow & black stripes per SIT recommendation.* *MOC# PLQ8.EHSPSM.123123.77405*	H. Garner	03/05/2024

Appendix A

OSHA's 29 CFR 1910 Subpart I - "Personal Protective Equipment" Selection Chart Guidelines for Eye and Face Protection.

OSHA's 29 CFR 1910 SUBPART I

"Personal Protective Equipment"
Selection Chart Guidelines for Eye and Face Protection

Source	Assessment	Protection
Impact: **Chipping, grinding, machining, masonry work, woodworking, sawing, drilling, chiseling, powered fastening, riveting, and sanding.**	**Flying fragments, objects, large chips, particles, sand, dirt, etc.**	**Spectacles with side protection, goggles, faceshields. See notes (1), (3), (5), (9). For severe exposure, add a faceshield.**
Heat: **Furnace operations, pouring, casting, hot dripping, and welding.**	**Hot Sparks**	**Faceshields, goggles, spectacles with side protection. For severe exposure use faceshield. See notes (1), (2), (3). Faceshields worn over goggles. See notes (1), (2), (3).**
	Splash from molten metals High temperature exposure	**Screen faceshields, reflective faceshields. See notes (1), (2), (3).**
Chemical: **Acid and chemicals handling, degreasing plating**	**Splash**	**Goggles, eyecup, and cover types. For severe exposure, add a faceshield. See notes (3), (10).**
Dust: **Woodworking, buffing, general dusty conditions**	**Irritating mists**	**Special purpose goggles.**
	Nuisance dust	**Goggles, eyecup and cover types. See note (7).**
Light Radiation: **Welding:** **Electric Arc**	**Optical radiation**	**Welding helmets or welding shields. Typical shades: 10-14. See notes (8), (11).**
Gas. **Cutting.** **Torch brazing.** **Torch soldering.**	**Optical radiation**	**Welding goggles or welding faceshield. Typical shades: gas welding 4-8, cutting 3-6, brazing 3-4. See note (8). Spectacles or welding faceshield. Typical shades, 1.5-3. See notes (3), (8).**
Glare	**Poor vision**	**Spectacles with shaded or special purpose lenses, as suitable. See notes (8), (9).**

Notes to Selection Chart Table

(1) Care should be taken to recognize the possibility of multiple and simultaneous exposure to a variety of hazards. Adequate protection against the highest level of each of the hazards should be provided. Protective devices do not provide unlimited protection.

(2) Operations involving heat may also involve light radiation. Protection from both hazards must be provided.

(Continued on next page)

Selection Chart Guidelines for Eye and Face Protection (continued)

(3) **Faceshields should only be worn over primary eye protection (spectacles or goggles).**

(4) **Filter lenses must meet the requirements for shade designations in OSHA's 29 CFR 1910.133(a)(5).**
Tinted and shaded lenses are not filter lenses unless they are marked or identified as such.

(5) **Persons whose vision requires the use of prescription lenses must wear either protective devices fitted with prescription lenses or protective devices designed to be worn over regular prescription eyewear.**

(6) **Caution should be exercised in the use of metal frame protective devices in electrical hazard areas.**

(7) **Atmospheric conditions and the restricted ventilation of the protector can cause lenses to fog.**
Frequent cleansing may be necessary.

(8) **Welding helmets or faceshields should be used only over primary eye protection (spectacles or goggles).**

(9) **Non-sideshield spectacles are available for frontal protection only, but are not acceptable eye protection for the sources and operations listed for "impact."**

(10) **Ventilation should be adequate, but well protected from splash entry. Eye and face protection should be designed and used so that it provides both adequate ventilation and protects the wearer from splash entry.**

(11) **Protection from light radiation is directly related to filter lens density. See note (4). Select the darkest shade that allows task performance.**

Appendix B

Protective Clothing and Accessories.

BODY PART PROTECTED	TYPE OF CLOTHING OR ACCESSORY	DESCRIPTION	TYPE OF PROTECTION	USE CONSIDERATIONS
Head	Safety helmet (hard hat)	For example: a hard plastic or rubber helmet.	Protects the head from blows.	Helmet shall meet OSHA standard 29 CFR Part 1910.135.
	Helmet liner		Insulates against cold. Does not protect against chemical splashes.	
	Hood	Commonly worn with a helmet.	Protects against chemical splashes, particulates, and rain.	
	Protective hair covering		Protects against chemical contamination of hair. Prevents the entanglement of hair in machinery or equipment. Prevents hair from interfering with vision and the functioning of respiratory protective devices.	Particularly important for workers with long hair.
Eyes and Face* * All eye and face protection must meet OSHA standard 29 CFR Part 1910.133.	Face shield	Full-face coverage, eight- inch minimum.	Protects against chemical splashes. Does not protect adequately against projectiles.	Face shields and splash hoods must be suitably supported to prevent them from shifting and exposing portions of the face or obscuring vision. Provides limited eye protection. Must be worn with safety glasses or goggles.
	Splash hood		Protects against chemical splashes. Does not protect against projectiles.	
	Goggles		Depending on their construction, goggles can protect against vaporized chemicals, splashes, large particles, and projectiles (if constructed with impact resistant lenses).	

Eyes and Face (cont.)	Sweat bands	Prevents sweat induced eye irritation and vision impairment.		
BODY PART PROTECTED	**TYPE OF CLOTHING OR ACCESSORY**	**DESCRIPTION**	**TYPE OF PROTECTION**	**USE CONSIDERATIONS**
Ears	Ear plugs and muffs		Protect against physiological damage and psychological disturbance.	Must comply with OSHA regulation 29 CFR Part 1910.95. Use of ear plugs should be carefully reviewed by a health and safety professional because chemical contaminations could be introduced into the ear.
	Headphones	Radio headset with throat microphone.	Provides some hearing protection while enabling communication.	Highly desirable particularly if emergency conditions arise.
Hands and Arms	Chemical Gloves and sleeves	May be integral, attached, or separate from other protective clothing.	Protect hands and arms from chemical contact.	Wear jacket cuffs over glove cuffs to prevent liquid from entering the glove. Tape seal gloves to sleeves to provide additional protection.
		Overgloves	Provide supplemental protection to the wearer and protect more expensive undergarments from abrasions, tears, and contamination.	
		Disposable gloves	Should be used whenever possible to reduce decontamination needs.	
Foot	Safety boots	Boots constructed of chemical resistant material.	Protect feet from contact with chemicals.	
		Boots constructed with some steel materials (e.g., toes, shanks, insoles).	Protect feet from compressions, crushing, or puncture by falling, moving, or sharp objects.	All boots must at least meet the specifications required under OSHA 29 CFR Part 1910.136 and should provide good traction.

		Boots constructed from nonconductive, spark-resistant materials or coatings.	Protect the wearer against electrical hazards, and prevent ignition of combustible gases or vapors.	Required in CCC cells.
	Disposable shoe or boot cover.	Made of a variety of materials. Slip over the shoe or boot.	Protect safety boots from contamination. Protect feet from contact with chemicals.	Covers may be disposed of after use, facilitating decontamination.
BODY PART PROTECTED	**TYPE OF CLOTHING OR ACCESSORY**	**DESCRIPTION**	**TYPE OF PROTECTION**	**USE CONSIDERATIONS**
Fall Protection	Full body harnesses and life lines		Enable personnel to work in elevated areas or enter confined areas and prevent falls. Belts may be used to carry tools and equipment.	Must be constructed of spark-free hardware and chemical resistant materials to provide proper protection. Must meet OSHA standards in 29 CFR Part 1910.128 (Proposed rule).
Full Body	Fully encapsulating suit	One piece garment. Boots and gloves may be integral, attached and replaceable, or separate.	Protects against splashes, dust, gases, and vapors.	Does not allow body heat to escape. May contribute to heat stress in wearer, particularly if worn in conjunction with a closed circuit SCBA; a cooling garment may be needed. Impairs worker mobility, vision, and communication.
	Non-encapsulating suit	Jacket, hood, pants, or bib overalls, and one piece coveralls.	Protects against splashes, dust, and other materials, but not against gases and vapors. Does not protect parts of head or neck.	Do not use where gas tight or pervasive splashing protection is required. May contribute to heat stress in wearer. Tape seal connections between pant cuffs and boots and between gloves and sleeves.
	Aprons, leggings, and sleeve protectors	Fully sleeved and gloved apron. Separate coverings for arms and legs. Commonly worn over non- encapsulating suit.	Provides additional splash protection of chest, forearms, and legs.	Whenever possible, should be used over a non- encapsulating suit (instead of using a fully encapsulating suit) to minimize potential for heat stress. Useful for sampling, labeling,

Full Body (cont.)	Firefighters' protective clothing	Gloves, helmets, running or bunker coat, running or bunker pants (NFPA No. 1971, 1972, 1973), and boots.	Protects against heat, hot water, and some particles. Does not protect against gases and vapors, or chemical permeation or degradation. NFPA Standard No. 1971 specifies that a garment consist of an outer shell, and inner liner, and a vapor barrier with a minimum water penetrations of 25lbs/in^3 (1.8kg/cm^3) to prevent the passage of hot water.	Decontamination is difficult. Should not be worn in areas where protection against gases, vapors, chemical splashes, or permeation is required.
BODY PART PROTECTED	**TYPE OF CLOTHING OR ACCESSORY**	**DESCRIPTION**	**TYPE OF PROTECTION**	**USE CONSIDERATIONS**
	Proximity garment (approach suit)	One or two piece overgarment with boot covers gloves, and hood of aluminized nylon or cotton fabric. Normally worn over other protective clothing such as; chemical protective clothing, firefighters' bunker gear, or flame retardant coveralls.	Protects against brief exposure to radiant heat. Does not protect against chemical permeation or degradation. Can be custom- manufactured to protect against some chemical contaminants.	Heat stress.
	Flame/fire retardant coveralls	Normally worn as an undergarment.	Provides protection from flash fires.	Adds bulk and may exacerbate heat stress problems and impair mobility.
	Floatation gear	Life jackets or work vests. (Commonly worn underneath chemical protective clothing to prevent flotation gear degradation by chemicals.)	Adds 15.5 to 25 lbs (7 to 11.3 kg) of buoyancy to personnel working in or around water.	Adds bulk and restricts mobility. Must meet USCG standards (46 CFR Part 160).

Full Body (cont.)	Cooling garment	One of three methods: (1) A pump circulates cool dry air throughout the suit or portions of it via an air line. Cooling may be enhanced by use of a vortex cooler, refrigeration coils, or a heat exchanger. (2) A jacket or vest having pockets into which packets of ice are inserted. (3) A pump circulates chilled water from a water/ice reservoir and through circulating tubes which cover part of the body (generally the upper torso only).	Removes excess heat generated by worker activity, the equipment, or the environment.	(1) Pumps circulating cool air require 10 to 20 ft^3 (0.3 to 0.6 m^3) of respirable air per minute.

Source: National Institute for Occupational Safety and Health (NIOSH), Occupational Safety and Health Administration (OSHA), U. S. Coast Guard (USCG), and U. S. Environmental Protection Agency (EPA), (October 1985). "Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities," OHHS (NIOSH) Publication No. 85-115, Cincinnati, OH.

Appendix C

Hazard Assessment and Equipment Certification.

HAZARD ASSESSMENT AND EQUIPMENT SELECTION CERTIFICATION

Dept./ Unit:	Superintendent:	Date of Assessment:
HAZARD CATEGORIES	**SOURCES OF HAZARD**	**PERSONAL PROTECTIVE EQUIPMENT:**
High temperatures that could result in burns or eye injury:		
Types of chemical exposures:		
Sources of harmful dust:		
Sources of light radiation:		
Sources of falling objects or potential for dropping objects:		

Dept \ Unit:

HAZARD CATEGORIES	SOURCES OF HAZARD	PERSONAL PROTECTIVE EQUIPMENT:
Respiratory hazards:		
Sources of electrical hazards:		
Sources of hazardous noise:		
Elevated work areas:		
Confined spaces		

Sources of flying fragments, objects, or particles:		

Dept \ Unit:_____

HAZARD CATEGORIES	SOURCES OF HAZARD	PERSONAL PROTECTIVE EQUIPMENT:
Sources of sharp objects which could pierce or cut:		
Sources of rolling or pinching objects:		
Other hazards for which PPE may be required:		

Appendix D

Westlake’s Level "A" PPE Checklist.

Westlake, Plaquemine Operations

LEVEL "A" PPE CHECKLIST

Production Dept:	**Location of work:**	**Date:**
Are Written Procedures Available? □ **YES** □ **NO**	**H&S Approval?** □ **YES** □ **NO**	**Planning Meeting Scheduled?** □ **YES** □ **NO** **Date:**
Describe work to be done:		

Has the following equipment been procured and inspected before work is scheduled to begin?	**YES**
Fully encapsulated protective clothing?	
Breathing air supply?	
Pressure demand, full face supplied air respirators with escape bottles or pressure demand SCBA?	
Respirable air monitor and filter system (breathing box)?	
Cooling Vests with vortex cooling units (or ice vests)?	
Breathing air hose?	
Means of communication?	

Have the following requirements been met?	**YES**
Job planned in detail?	
Westlake's HS representative on site during the job?	
Contractor safety personnel on site during the job?	
Medical surveillance for personnel in level A suits?	
Air monitoring requirements?	
Personnel have been properly trained in the use of level A suits and equipment/	
Personnel are physically qualified to perform the job in level A equipment?	
Equipment been located upwind of the work area?	
Rescue plan and stand-by personnel equipped in level A gear in place?	
Attendant stationed at the breathing boxes and the breathing air cylinders?	
Area is barricaded and a hot zone has been established?	

Have the following requirements been met? (cont.)	YES
All unnecessary personnel out of the hot zone?	
Cool drinking water available?	
Scaffolding been erected to allow donning/doffing near the work area?	
Is decontamination necessary?	
Has equipment been “safed out”?	

List any special equipment or considerations for the job:

List the names of all personnel in level A suits and their job function:

Appendix E

Mono-goggle Retainer Rings.

1. The mono-goggle retainers that are affixed to the hard hat are prohibited at our Westlake, Plaquemine Operations.

Prohibited at the Westlake, Plaquemine Operations.

2. While mono-goggles are being used, they must be in no way affixed to the hard hat. The band must totally be in contact with back of the head.

Correct way to wear mono-goggles.

Incorrect because goggles still affixed to the hard hat.