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HEALTH AND SAFETY PLAN

[AGENCY NAME]

[AGENCY ADDRESS]

[AGENCY TELEPHONE]

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SECTION 1: INTRODUCTION

The goal of this Health and Safety Plan (HASP) is to provide useful information to [Program Name] personnel with proper safety information and precautions that should be followed to insure worker health and safety.

Human exposure to pesticidesmay occur occupationally, usually involving dermal and inhalation exposure routes. Pesticide exposures may occur in workers who refill pesticide containers and/or apply pesticides and in workers involved in post-application activities, such as equipment cleaning. Because of these potential exposures, it is prudent to implement safety procedures and protocols to minimize pesticide exposure and protect worker safety. These protocols would include training of all applicators in equipment use, safety, and use of Personal Protective Equipment (PPE) in full compliance with all OSHA, PESH, and USEPA regulatory requirements.

SECTION 2: GENERAL INFORMATION

2.1 Personnel

|  |  |
| --- | --- |
| *Primary Contacts* | *Phone Number* |
| Safety Director:  |  |
| Secondary Contact:  |  |

The responsibilities of the aforementioned individuals include, but are not limited to, the following:

* Supervise field staff in the performance of mosquito control activities and ensure compliance with Health and Safety Protocols.
* Ensure that all personnel are qualified and trained according to city, state and federal laws and standards to apply pesticides.
	+ Ensure that applicators are Certified Pesticide Applicators, Certified Technicians or Apprentices, as described by local State Regulations.
	+ Ensure that certified applicators carry proof of certification or license on their person and have in their custody a complete label of every pesticide being applied.
	+ Ensure that applicators receive continuing education credits required for re-certification.
* Ensure that all staff receives Health and Safety training to minimize potential exposure to pesticides and are thoroughly trained in the correct operation of all equipment.

2.2 Health and Safety Training

* + 1. Curriculum Development:Training materials will be developed to comply with US Occupational Safety and Health Administration and Local Public Employee Health & Safety regulations and standards:
	+ To teach staff how to prevent and/or minimize pesticide exposure when applying larvicides and adulticides.

2.2.2 Training. All staff will receive Health and Safety training from the Office of Safety Compliance to minimize potential exposure to pesticides, as well as training on the proper use of vehicles and equipment. This training will include:

* Worker Right to Know requirements
* Use of Personal Protective Equipment
* Application protocols and methods
* Spill cleanup procedures
* Equipment clean up protocols
* Potential adverse effects that can occur with exposure to pesticides that may be used in mosquito control operations
* Basic first aid

2.3 Personal Protective Equipment. The need for personal protective equipment (PPE) is dependent on the type of pesticide being used. PPE Requirements are printed on pesticide labels.

* + 1. Gloves.Elbow length chemical-resistant gloves are required when handling all pesticides. Elbow length gloves protect wrists and prevent pesticides from running down sleeves into gloves. Glove materials should include nitrile, butyl or neoprene as they offer good protection for both dry and liquid pesticides. Cotton or leather gloves should never be used as they absorb and hold pesticide close to skin for long periods of time.
		2. Coveralls.Cloth coveralls and/or Tyvek suits are requiredto be worn by pesticide applicators at all times during pesticide loading and filling, application and equipment clean up.
		3. Apron.A chemical resistant apron is required when repairing or cleaning spray equipment and when mixing and loading liquid pesticides. Aprons offer excellent protection against spills and splashes of liquid pesticides and can be easily worn over other protective equipment. Nitrile, butyl and neoprene aprons are recommended.
		4. Boots.Unlined chemical resistant boots that cover the ankles. Nitrile and butyl boots are required during loading and filling operations or equipment cleaning.
		5. Eye Protection.Goggles or a face shield are recommended whenever there is the possibility of pesticide getting into eyes and are required when pouring or mixing pesticides. Contact lenses should not be worn during any of these activities.
		6. Respirators. Pesticide labels indicate if a respirator is required. It is required that respirators be worn during mixing or during filling operations.
			1. Fit Test. All applicators required to use respirators should be fit-tested for proper fit of respirators and appropriate respirators will be provided to applicators. Respirator should be worn tightly enough to form a seal around the applicator’s face. Facial hair must be groomed such that a proper seal between the face and respirator is made.
			2. Respirator Cartridges**.** Respirator cartridges designed to filter out pesticides from the air must be used. Having the wrong cartridge may expose the applicator to toxic levels of pesticides. The filter should be checked often and replaced when it becomes dirty or when breathing becomes difficult. If applicator notices a pesticide odor, he/she must first ensure that the respirator has a proper seal. If odor persists, then cartridge must immediately be discarded.

2.4 Other Safety Equipment

2.4.2 Other Safety Equipment will be provided in the event of accidental exposure:

* Standard First Aid Kit
* Emergency Shower
* Emergency eye wash station
* Bottled water with squirt top to flush exposed skin.
* Fire extinguisher
* Flashlight

2.5 Storage.Pesticides shall be stored in a secure location in accordance with manufacturer’s recommendations.

2.6 Loading and Filling Operations**.** Because applicators are most likely to be exposed to pesticides when handling the pesticides during loading and/or filling, it is important that applicators strictly adhere to safety guidelines and protocols.

* Always wear adequate protective clothing and equipment.
* Use chemical resistant gloves, aprons, and coveralls (as appropriate) and eye protection.
* Use respirator with appropriate cartridge when indicated on label or when handling pesticides indoors.
* To prevent spills, close containers after each use
* If accident occurs, attend to it immediately (see below).
* Remove and dispose of any contaminated clothing and wash thoroughly with soap and water.
* A Reportable Occurrence Form must be completed and submitted to the Safety Director.

2.7 Pesticide Spill Cleanup

* + 1. Reportable Spill Defined. Any spill inside a structure of any pesticide of more than one (1) gallon liquid of any combination of pesticide and/or solvent, or dry formulations containing one (1) pound or more of active ingredient or any spill outside a structure of any pesticide containing one (1) pound or more of active ingredient.
		2. Employee Exposure (pre or post spray.) If employee inhales, ingests or is otherwise exposed to significant amounts of pesticide, s/he must immediately contact the Safety Director who will contact 911 for medical assistance.
		3. Employee Exposure (during application.) If exposure occurs during pesticide application, the employee must immediately contact 911 (via cellular phone) for medical assistance. If possible, the employee must then notify the Safety Director. Copy of SDS and label (available on every vehicle) should be presented to emergency personnel and/or physician.

2.7.3.1 Employee exposure procedures include the following:

* If eyes are exposed, employee should gently flush eyes with eyewash as instructed, generally 15 minutes.
* All exposed clothing should be removed and exposed skin should be thoroughly flushed with water; if shower is available, employee should cleanse skin and hair thoroughly with soap and water.
* Thoroughly ventilate area and remove all personnel from area until spill is cleaned.
* A Reportable Occurrence Form must be completed and submitted to Safety Director.
	+ 1. Spill Containment and Clean Up Procedures**.** All spills should be isolated to the smallest possible area.The following procedures are recommended:
			1. Spill Containment Supplies
* 100 lbs absorbent material (e.g., vermiculite).
* Absorbent pesticide spill rags
* Absorbent pads, pillows and barriers
* 55-gallon open head drums
* Dustpan
* Shop brush
* Square point handle shovel
	+ - 1. Small Spills**.** Shut off ignition sources. Small spills that do not contaminate ground water should be managed in house using the following procedures:
* Wear protective clothing indicated on the pesticide label during the entire cleaning process.
* Isolate contaminated area. Keep people away from the spill.
* Soak up the spill. Spread an absorbent material (e.g., vermiculite) over the entire spill.
* Collect contaminated materials and place into labeled heavy- duty hazardous materials bags for disposal.
* Clean area with water and detergent and remove residue with additional absorbent material. Place in labeled hazardous materials bags.
* Decontaminate area using chemical wipes and place wipes in labeled hazardous materials bags.
* Clean up contaminated vehicles and equipment.
* Dispose of all contaminated materials in labeled hazardous materials bags.
	+ - 1. Major Spills**.** Shut off ignition sources. For major spills or spills that contaminate ground water:
* Contact 911 to notify Hazmat Unit.
* Contact the Safety Director at: .
* Wear protective clothing indicated on the pesticide label.
* Isolate contaminated area—keep people away.
* Use caution to isolate and/or soak up the spill.
* Wait for Hazmat Unit to arrive.

2.8 Equipment/Vehicle Cleaning

* + 1. Clean Up Materials.
* Chemical wipes
* Hazardous materials bags with labels
* Water hose
* Liquid detergent
* Bucket
* Brush with long handle
	+ 1. Clean Up Protocol.
* Chemical wipes will be provided for the clean up of aprons, boots, goggles, and respirators.
* Contaminated clothes should be placed in sealed plastic bags for washing; all contaminated clothing should be washed and properly laundered, dried and stored at the end of each day.
* Equipment Clean Up:
	+ Wear appropriate personal protective equipment, such as Tyvek coveralls, chemical resistant gloves, etc.
	+ The exterior of the spray equipment should be wiped down with a chemical wipe and disposed on in labeled hazardous waste bags.
	+ Chemical resistant gloves (nitrile, butyl, or neoprene) must be worn during equipment wipe down.
* Personnel Clean Up:
	+ Personnel are requested to wash hands and other parts of the skin that may have been exposed to pesticides during application or equipment clean up. To facilitate this clean up, sinks will be provided for all personnel involved in application.
	+ Emergency showers and eye wash equipment will be provided near the loading area in the event of accidental exposure.
	+ Tyvek coveralls should be removed and discarded in hazardous materials bags. All work clothing should be removed prior to ending the work day.

2.9 Disposal. Empty noncombustible pesticide container should be returned to manufacturer, whenever possible. If this is not possible, containers must be cleaned before disposal, using the triple-rinse technique or other methods approved by local agencies. The triple rinse technique is as follows:

* Fill container one quarter full with proper diluent.
* Plug opening of the container.
* Rotate container, making sure to rinse all surfaces.
* Turn container upside down.
* Allow rinsate to drain.
* Repeat procedure twice more.
* Puncture top and bottom of container to prevent reuse
* Crush container, if possible.
* Deposit container in licensed sanitary landfill approved by OSC.

2.10 Biological Hazards

2.10.1 General: In addition to the hazards described in this document, pesticide applicators may encounter biological hazards that include endemic hazards such as animals, insects, and poisonous plants. An integral part of protection against these types of hazards is understanding the local flora and fauna. As these species vary from site to site, so does their likelihood of causing a harmful or hazardous condition.

2.10.2 Animals: Animals represent hazards because of their poisons or venoms, size and aggressiveness, diseases transmitted and/or the insects (vectors) that they may carry. Encounters with poisonous snakes, common in some areas of the United States, may be caused by moving containers, reaching into holes, or walking through high grass, swampy areas or rocks. A snake bite warrants medical attention after administration of proper first aid procedures. Rabies is a viral infection most often transmitted by bites of animals infected with the virus. These animals include dogs, bats, skunks, foxes and raccoons, but any warm blooded animal can become infected. Examples of rapid signs include observing a raccoon in the daytime, a live bat on the ground or any other unusual, aggressive, or passive behavior. Employees should make every effort to avoid contact with any animals while in the field. Spray vehicles (UAV, trucks and ATVs) should be maneuvered away from any potential contact and the Safety Director notified immediately. In the unlikely event the employee is bitten or scratched by an animal in the field, the employee must immediately contact 911 for medical assistance. The location and description of the animal should be retained and reported to the Safety Director and physician.

2.10.3 Other Insects: Other than the vector potential of mosquitoes transmitting West Nile virus, St. Louis Encephalitis virus or other mosquito-borne viruses; another vector-borne disease in some areas is Lyme Disease, which is a bacterial infection transmitted by the bite of a tick. Prevention and protection techniques include wearing of light colored, tight knit clothing, long pants, long sleeved shirts, tucking pant legs into shoes or boots, wearing a hat, using insect repellents and checking oneself daily for ticks after being in grassy, wooded areas.

2.10.4 Poisonous Plants: Workers should know how to identify and avoid direct contact with poisonous plants such as poison ivy, poison oak and poison sumac. The usual effect is dermatitis or skin inflammation. Preventive and protective measures are similar as those for Lyme Disease. Risk can be reduced by cleaning the skin thoroughly with soap and water after individuals either come into contact with such plants or suspect that they have contacted these plants.

2.11 Heat Stress

* + 1. General: Heat stress may occur when work is performed at high temperatures or in high humidity and may resemble the symptoms of pesticide exposure. Each employee will monitor employees for signs of heat stress. In addition, field personnel should take care to note signs of heat stress in themselves as well as in fellow employees. To make this possible, each individual must be able to recognize the symptoms of heat stress, and to know how best to prevent such stress from occurring.
		2. Heat Exhaustion
* What happens to the body: headaches, dizziness/light-headedness, weakness, mood changes (irritable or confused/can’t think straight), feeling sick to your stomach, vomiting, decreased and dark colored urine, fainting and pale clammy skin.
* What should be done:
	+ Move the person to a cool shaded area to rest. Don’t leave the person alone. If the person is dizzy or light headed, lay them on their back and raise their legs about 6-8 inches. If the person is sick to their stomach lay them on their side.
	+ Loosen and remove any heavy clothing.
	+ Have the person drink some cool water (a small cup every 15 minutes) if they are not feeling sick to their stomach.
	+ Try to cool the person by fanning them. Cool the skin with a cool spray mist of water or wet cloth.
	+ Contact 911 (via cellular phone) for medical assistance.
		1. Heat Stroke
* What happens to the body: dry pale skin (no sweating), hot red skin (looks like a sunburn), mood changes (irritable, confused/ not making any sense), seizures, collapse/ passed out (will not respond.)
* What should be done:
	+ Contact 911 (via cellular phone) for medical assistance. Notify Safety Director.
	+ Move the person to a cool shaded area. Don’t leave the person alone. Lay them on their back and if the person is having seizures/ fits remove any objects close to them so they won’t strike against them. If the person is sick to their stomach lay them on their side.
	+ Remove any heavy and outer clothing.
	+ Have the person drink some cool water (a small cup every 15 minutes) if they are alert enough to drink anything and not feeling sick to their stomach.
	+ Try to cool the person by fanning them. Cool the skin with a cool spray mist of water or wet cloth.
	+ If ice is available, place ice packs under the arm pits and groin area.
		1. Heat Stress Prevention: To prevent heat stress from occurring, workers should hydrate themselves before the workday begins. Fluid intake should be increased to equal the amount to sweat produced (water is the best choice and should be served cool but not cold (i.e., approximately 50-60 degrees Fahrenheit). Utilizing the coolest part of the day (i.e., evening and nighttime working hours) should alleviate the risk of heat stress.

2.12 Lightning: Under no circumstances should pesticide applicators work in the immediate vicinity of thunderstorms. Crews should seek shelter immediately. Standing under a tree in a thunderstorm increases the danger since trees do not constitute shelter; in fact standing under a tree during a thunderstorm will greatly increase the danger of being struck by lightning. If absolutely no shelter is available, workers should seek out a low spot in the topography and remaining as low to the ground as possible.

SECTION 3: PESTICIDE INFORMATION

Below is a list of the more commonly used larvicides and adulticides used in the mosquito management program.

3.1 Larvicides

List products with trade name, EPA Registration number, and any information needed in case of exposure.

3.2 Adulticides

List products with trade name, EPA Registration number, and any information needed in case of exposure.