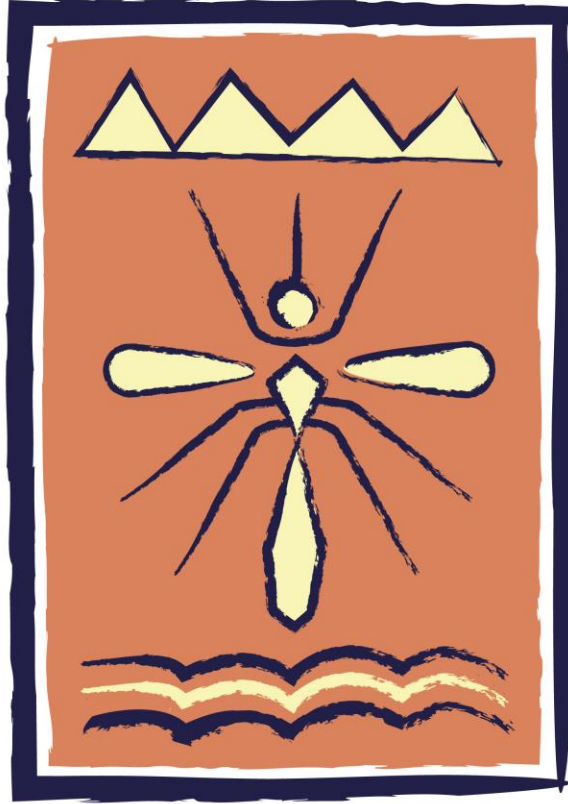


# SOUTHWEST MOSQUITO



ABATEMENT & CONTROL DISTRICT  
WASHINGTON COUNTY, UTAH 

## Pesticide Discharge Management Plan

Officially adopted on August 11, 2022

Revised August 8, 2024

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# Southwest Mosquito Abatement and Control District

## Pesticide Discharge Management Plan

### PDMP Team:

Persons responsible for managing pests in relation to the management area:

- Sean Amodt, District Administrator
- SWMACD Board of Trustees

Persons responsible for developing and revising the PDMP:

- Sean Amodt, District Administrator
- Kesler Hansen, Operations Administrator

Persons responsible for developing, revising and implementing corrective actions and other effluent limitation requirements:

- Sean Amodt, District Administrator
- Kesler Hansen, Operations Administrator
- Karen Noffsinger, Office & Human Resources Administrator

Persons responsible for applications:

- Sean Amodt, District Administrator
- Kesler Hansen, Assistant Manager
- Brent Leslie, Mosquito Surveillance Administrator
- Karen Noffsinger, Office & Human Resources Administrator
- Daniel Baird, Mosquito Surveillance Technician
- ~~Connor Killeen, Mosquito Surveillance Technician~~
- **Full-time, non-benefited, Mosquito Surveillance Technician**
- Seasonal employees, Mosquito Surveillance Technicians

**Pest Management Area Description:**

Pest Issue Description:

Southwest Mosquito Abatement and Control District (SWMACD) has three main mosquito species which can pose a public health threat to the residents of the District. Multiple other mosquito species also pose a nuisance that can affect the quality of life of the residents & visitors of the District. The invasive *Aedes aegypti* was introduced into the District first in 2013, then subsequently in ~~2020 & 2021~~ **2020 - 2023** in different locations.

The species in the table below are the major target species for control operations carried out by the District.

<b>Target pests</b>	<b>Source Type</b>	<b>Data source</b>	<b>Notes</b>
<i>Aedes aegypti</i>	Containers	Mechanical Trap, Larval collections	Invasive species and a vector for multiple diseases
<i>Aedes vexans</i>	Flood water	Mechanical Trap, Larval collections	Nuisance
<i>Culex erythrothorax</i>	Permanent water, marsh	Mechanical Trap, Larval collections	Disease vector for WNV, SLE, & WEE
<i>Culex quinquefasciatus</i>	Containers, catch basins, stagnant ponds, etc.	Mechanical Trap, Larval collections	Disease vector for WNV, SLE, & WEE
<i>Culex tarsalis</i>	Permanent water	Mechanical Trap, Larval collections	Disease vector for WNV, SLE, & WEE
<i>Ochlerotatus nigromaculis</i>	Flood water	Mechanical Trap, Larval collections	Nuisance
<i>Culiseta inornata</i>	Permanent water	Mechanical Trap, Larval collections	Nuisance, cool weather

### **Action Thresholds:**

- Thresholds were determined by analyzing:
  - Cost-effectiveness
  - Manpower
  - Equipment
  - Public tolerance for mosquitoes
  - Source distance from population base

### **Adult Mosquitoes-**The following may trigger a pesticide treatment.

- Monitoring site meets or exceeds 250 adult mosquitoes of any species combined per traps
- Monitoring site meets or exceeds twenty (20) adult target vector species per traps
- Landing rate count meets or exceeds five (5) mosquitos per minute
- Multiple confirmed complaint calls
- The detection of a mosquito-borne disease in humans, horses, birds, or mosquitoes
- Service request for a special event or community function

### **Mosquito Larvae-**The following may trigger a pesticide treatment.

- Monitoring site meets or exceeds an average of one (1) larva per dip
- Monitoring site has a known history of breeding mosquitoes
- Unused containers holding stagnant water
- Stagnant storm drains

### **General Location Map:**

See Attachment A

### **Water Quality Standards:**

No water bodies located within SWMACD boundaries are impaired ~~for~~ by pesticides or their degradates used in the mosquito control program.

### **Control Measure Description:**

The strategies to be implemented were selected based on the impact to water quality, impact to non-target organisms, pest resistance, feasibility, and cost-effectiveness. Treatment strategies considered include no action, prevention, mechanical/physical methods, cultural methods, biological control agents, and pesticide use.

The SWMACD mosquito control program will utilize the following strategies as needed:

#### **No action:**

- When a mosquito development site is not safely accessible
- When a mosquito development site will not greatly affect the residents of the District
- When meteorological conditions are not conducive to proper adult or larvae control
- When a site falls within a no-spray zone set by the District
- When non-target organisms may be adversely affected

#### **Prevention:**

- Emptying water from containers
- Teaching and implementing water conservation methods
- Finding and advising residents of the District on how to make water features, ponds, water troughs, and flood irrigation uncondusive to mosquito development

#### **Mechanical/physical methods:**

- Draining or lowering water levels in mosquito developmental sites
- Removing beaver dams or other debris that slows water flows
- Removing aquatic vegetation
- Altering mosquito developmental sites
- The use of mosquito traps for the control of adult mosquitoes
- Redirecting water flow
- The use of fountains, pumps, etc. to move water

#### **Cultural methods:**

- Public education
- Media reports
- Press releases
- Maintenance of the District website ([www.swmosquito.org](http://www.swmosquito.org))

### **Biological control agents:**

- Biological larvicides with the active ingredients Spinosyn A and Spinosyn D,
- *Bacillus sphaericus* and/or *Bacillus thuringiensis israelensis* will be used to help prevent adult mosquitoes from hatching in identified developmental sites.
- The use of other biologicals to regulate water quality and larval food sources
- Mosquito fish (*Gambusia affinis*) or other fish if authorized in the area
- Predatory plants and insects for both larvae and adults (ex. Dragonflies, birds)

### **Pesticides products: (See attached product inventory list)**

#### Larval control:

- Growth regulators with the active ingredients (S)-Methoprene, Poly (oxy-1,2-ethanediyl), 2-[1-Methyl-2-(4-phenoxyphenoxy) ethoxy] pyridine
- Surfactants with mineral oils will be used in rotation with the biological products above as a larvicide for late instar and pupal stages

#### Adult Mosquito Control:

- Adulticide Ultra Low Volume (ULV) applications may utilize the following active ingredients:
  - Permethrin
  - Piperonyl Butoxide
  - Etofenprox
  - 3-Phenoxybenzyl cyclopropanecarboxylate
  - Malathion

### **Schedules of Procedures:**

#### **Control Measures Used to Comply with the Effluent Limitations:**

##### **Larvicide-** Liquid and dry formulations:

##### Determination of Application Rate:

- Efficacy is determined when the product is first introduced and then periodically evaluated based on a comparison of pre-application and post-application larval counts to determine the level of control achieved for a variety of doses within the label application rates.

##### Determination of frequency of application is made when:

- Larval counts meet or exceed **the** thresholds listed above
- Frequency falls within the label requirements

Spill prevention procedures include:

- Pre-mission inspection of application equipment for leaks and cracks
- Pre-trip inspections of vehicles
- Spill kits in each vehicle
- Pre-mission inspection of product containers for secure lids leaks, cracks, and rip/tears
- Spill pallets used in the chemical storage area
- Closed catch basin used in the staging area
- Spill catch containers in vehicles
- Frequent safety training for applicators

Pesticide application equipment:

- Equipment is annually calibrated, repaired as needed, maintained, and cleaned following the manufacturer's suggested procedures.
- Equipment is pre-mission inspected for proper working order following the manufacturer's suggested pre-operation procedures.

Surveillance methods include:

- Larval dipping
- Visual inspections of established monitoring sites
- A record is kept for each site visit, regardless of treatment.

Assessing environmental conditions include:

- Onsite evaluation of weather conditions and terrain by trained applicators in the treatment area.

**Adulticide** – Ultra Low Volume (ULV) spraying.

Application Rate Determination:

- Efficacy is determined when the product is first introduced and then periodically, based on a comparison of pre-application and post-application adult counts to determine the level of control achieved for a variety of doses within the label application rates.

Frequency of Application Determination:

- When adult counts meet or exceed thresholds listed above and fall within the product label requirements.



#### Spill prevention procedures:

- Includes pre-mission inspection of application equipment for leaks and cracks
- Pre-trip inspections of vehicles
- Spill kits in each vehicle
- Pre-mission inspection of product containers for secure lids, leaks, cracks, and rip/tares
- Spill pallets used in the chemical storage area
- Closed catch basin used in the staging area
- Spill catch containers in vehicles
- Annual training for applicators

#### Pesticide application equipment:

- Equipment is calibrated annually or at the change of product. Repaired, maintained and cleaned following the manufacturer's suggested procedures. Equipment is pre-mission inspected for proper working order following the manufacturer's suggested pre-operation procedures.

#### Surveillance methods:

- Includes CDC light trap baited with CO2
- Biogents BG sentinel traps
- Gravid traps
- Landing rate counts
- Adult mosquito lab records are kept for each surveillance event

#### Assessing environmental conditions:

- Includes onsite evaluation of weather conditions and terrain by trained applicators in the treatment area.

### **Other Actions Necessary to Minimize Discharges:**

#### Spill Response Procedures:

- Procedures for expeditiously stopping, containing, and cleaning up leaks, spills and other releases, see Attachment B
- Procedures for notification of appropriate facility personnel, emergency response agencies and regulatory agencies, see Attachment B.

## **Incident Response Procedures:**

### **Procedures for pesticide incidents:**

- Call 911 to obtain immediate medical assistance for injured or contaminated persons.
- Consult the pesticide MSDS for appropriate first aid measures.
- Call the Poison Control Center 24 hours 1 (800) 222-1222 for more information on first aid measures related to eye contact, skin contact, inhalation, and/or ingestion of the spilled pesticide.
- Stop any further contamination or hazard: If currently applying pesticide, stop the application. Follow the spill response procedures outlined in Attachment B.
- Report the incident immediately: Report the incident using the “Procedures for Notification of incident” in the following section.
- Collect information/data to determine the extent and magnitude of the problem: Use the Utah DEQ “Five (5) day adverse incident report for the pesticide general permit”, see Attachment C
- Determine the cause of the incident: Determine what caused the incident (equipment failure, spill or leak, dose incorrectly determined, dose incorrectly applied, etc.)
- Take corrective actions: Corrective actions will be taken to prevent the recurrence of the incident.

## **Procedures for notification of incident:**

Call for emergencies:

- Medical/Fire 911
- Poison Control Center 24 hour 1 (800) 222-1222

Notify your supervisor:

- Sean Amodt (cell phone) 1 (435) 467-1664

Supervisor will notify Utah Department of Environmental Quality:

- UDEQ Division of **Water Quality** (business hours) 1 (801) 536-4300  
UDEQ 24 hour 1 (801) 536-4123
- Emergency medical centers:

St. George Regional Hospital

1380 E Medical Center Dr, St. George, UT 84790

1 (435) 251-1000

- Cedar City Hospital

1303 N Main St, Cedar City, UT

1 (435) 868-5000

## **Pesticide Monitoring Schedules and Procedures:**

- Larvicide applications:
  - Visual monitoring post treatments within the treatment area will be conducted by District staff who are routinely in the field.
  - For Larvicide applications directly to water, the priority treatment sites will be inspected within seven (7) days after treatment.
  - Sites using time release (ex. growth regulator) products are periodically checked for continued efficacy.
- Adulticide applications.
  - Monitoring will be performed by District staff performing routine mosquito surveillance in the treated area according to previously stated procedures.

Signature Requirements:

Jarett Waite, being duly appointed as a Trustee and elected as Chair, affirms that the foregoing Pesticide Discharge Management Plan was approved and adopted by the Board of Trustees of the Southwest Mosquito Abatement and Control District at a regularly called meeting of the said Board in Washington County, Utah, on August 11, 2022.

Revised on August 8, 2024

\_\_\_\_\_ Date: \_\_\_\_\_  
Jarett Waite - Board Chair



