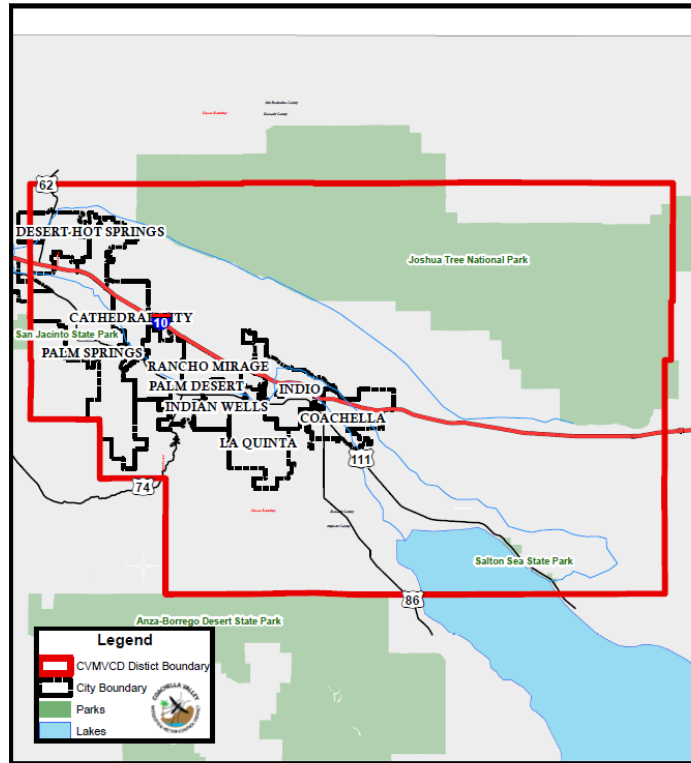




**Coachella Valley Mosquito and Vector Control District
Pesticide Application Plan
2023**

Pesticide Application Plan (PAP) Elements:

1. Description of all target areas, if different from the water body of the target area, in to which larvicides and adulticides are being planned to be applied or may be applied to control vectors. The description shall include adjacent areas, if different from the water body of the target areas;



The Coachella Valley extends for approximately 45 miles (72 km) in Riverside County southeast from the San Bernardino Mountains to the Salton Sea. It is approximately 15 miles (24 km) wide along most of its length, bounded on the west by the San Jacinto Mountains and the Santa Rosa Mountains and on the north and east by the Little San Bernardino Mountains. The Coachella Valley Mosquito and Vector Control District covers the entire valley and terminates at the Riverside/Imperial County line near the Salton Sea State Park. Larvicide and adulticide applications may occur anywhere in the specified region to bodies of water when deemed necessary by key mosquito and arbovirus surveillance indicators. The main waters of the U.S. that could be impacted by larvicide and adulticide applications are the Whitewater River/Storm Channel and the Salton Sea, as well as duck clubs which are flooded from October until February.

2. Discussion of the factors influencing the decision to select pesticide applications for vector control;

Deciding to use chemicals to control vectors relies on the analysis of surveillance data and a basic understanding of vectors and vector-borne disease ecology. District staff is routinely trained on the basic principles of the ecology of vectors and the pathogens they transmit. Several standard operating procedures have also been developed and adopted to give guidance

in determining when pesticide use is warranted to control local mosquito populations in order to prevent arbovirus transmission.

Factors affecting the decision to use pesticides for Mosquito Control

Abiotic Factors. Abiotic factors that can influence a decision to use fast-acting chemical control are seasonal and daily weather patterns and localized larval and adult habitat conditions. All of these can affect the potential for vector and arbovirus activity and ultimately affect a technician's decision to use a particular control product.

Biotic Factors. Biotic factors that can influence use of chemical control of mosquitoes include the number of larvae or pupae present in a breeding source, species and stage of mosquito larvae or adults present, presence and level of natural predators in a breeding habitat, level of resistance (if detected), and level of detected arbovirus activity in an area under surveillance for potential chemical control.

District Established Thresholds for Vector Control Measures

The District has established thresholds for both larval and adult mosquito control. These thresholds have been developed through years of surveillance and historical data of arbovirus transmission in mosquito producing habitats in the Coachella Valley.

The District has set standard larval sampling (dipping) protocols for various mosquito breeding habitats found throughout the Coachella Valley. Larval sampling consists of the vector control technician taking a certain number of dips, based on the surface area and the type of the breeding source, using the standard 1-pint dipper. Once all dips are taken, the vector control technician determines the average number of mosquito larvae per dip. If the average per dip exceeds one larva per dip, this level of breeding warrants control activity. Larval samples obtained by dipping surveillance are labeled and taken to the laboratory for final identification. At this point, abiotic and biotic factors are taken under consideration, and the proper treatment is determined by the vector control technician in the field. When at all possible, physical (i.e. stagnant water removal) or biological control (i.e. mosquitofish) measures are used. In habitats that are conducive to breeding primary vectors of human health importance, it is necessary for District technicians to use one of the few fast acting, biorational, and highly specific control products that are registered in California.

For adulticiding, the District established adulticiding protocols and five-year thresholds using data from adult mosquito traps deployed throughout the Coachella Valley. These traps and thresholds are used as indicators for when it may be necessary to use adult control measures. When trap numbers of mosquitoes of public health importance (*Culex tarsalis*, *Culex quinquefasciatus*, *Aedes aegypti*) exceed the five-year threshold for that trap, District staff begins to coordinate the potential use of adulticides to reduce the local adult mosquito population to prevent or reduce arbovirus transmission. In addition, factors such as presence or absence of

arbovirus activity, risk assessment level (see discussion below), seasonal weather patterns, and localized resistance are considered carefully when determining if adulticiding measures are justified and will be effective. In every case the pesticide labeling requirements are strictly adhered to.

CVMVCD Mosquito-Borne Virus Surveillance and Emergency Response Plan
<https://www.cvmosquito.org/vector-control-publications/pages/response-plans>

The District has developed and adopted a modified version of the California Mosquito-borne Virus Surveillance and Response Plan. This document outlines the District’s mosquito surveillance and control objectives and outlines several models used to predict the risk of mosquito-borne disease epidemics and establishes standard public outreach, surveillance, and mosquito control measures based on the level of estimated risk. Please refer to Section V thru VI for a description of response levels, models used to determine level of risk for human epidemics of SLEV, WEE, and WNV, and as well as descriptions of the recommended District response based on the level of risk.

3. Pesticide products or types expected to be used and if known, their degradation by-products, the method in which they are applied, and if applicable, the adjuvants and surfactants used;

The following list of active ingredients may be used by the District for larval or adult control. This list is directly from the NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. for Vector Control Applications. All of these products are used according to label directions and may be applied by ground (hand, truck, ATV, backpack, etc) or by air (UAV, helicopter or fixed wing aircraft).

List of Permitted Larvicide Products

Larvicide Active Ingredient
<i>Bacillus thuringiensis israelensis</i> (Bti)
<i>Bacillus (Lysinibacillus) sphaericus</i> (S) – Methoprene
Monomolecular Films
Petroleum Distillates
Pyriproxifen
Spinosad
Temephos
Any minimum risk category pesticides that are FIFRA exempt and registered for use in

Larvicide Active Ingredient
California and used in a manner specified in 40 C.F. R. section 152.25.

List of Permitted Adulticide Products

Adulticide Active Ingredient
Deltamethrin
Etofenprox
Lambda-cyhalothrin
Malathion
Naled
N-octyl bicycloheptene dicarboximide (MGK-264)
Piperonyl butoxide (PBO)
Permethrin
Prallethrin
Pyrethrin
Resmethrin
Sumithrin
Any minimum risk category pesticides that are FIFRA exempt and registered for use in California and used in a manner specified in 40 C.F. R. section 152.25.

4. Description of ALL the application areas and the target areas in the system that are being planned to be applied or may be applied. Provide a map showing these areas;

Any site that holds water for more than 96 hours (4 days) can produce mosquitoes. Source reduction is the District’s preferred solution, and whenever possible the District works with state, county, city, and private property owners to effect long-term solutions to reduce or eliminate the need for continued applications as described in CVMVCD Mosquito Reduction Best Management Practices (https://www.cvmosquito.org/sites/g/files/vyhlf4551/f/uploads/bmp2016_0.pdf).

The typical sources treated by the District which can be classified as waters of the U.S. include:

Freshwater swamps and marshes. In the Coachella Valley, marshes (primarily duck clubs or managed wetlands) are drained and re-filled once to enhance the primary productivity of the habitat, and under certain circumstances, this can result in large populations of mosquitoes.

Whitewater River/Storm Channel. The Whitewater River transects the entire length of the Coachella Valley. Most of the year, the river is dry and only has significant flow during the few rainstorms experienced during the winter months. Water flow does occur year-round from the city of Indio east to the Salton Sea, due to the treated sewage water discharge and agricultural run off. This part of the Whitewater River runs year-round and does not breed mosquitoes. Very few treatments to the Storm Channel occur in the urban, dry sections, where water discharge from local homeowner associations creates stagnant pools that are prone to dense growths of bulrush and cattail.

Marshes. In the Coachella Valley, the marshes along the Salton Sea can produce large numbers of *Cx. tarsalis* mosquitoes, negatively influencing the health, comfort and economy of residents and visitors in the area. Natural decrease of the Salton Sea level greatly reduced the *Cx. tarsalis* population in the area, but *Cx. tarsalis* can still rise to significant numbers during the spring and fall posing a serious public health threat.

Temporary standing water. There are several species of mosquitoes that can breed in water that stands only one to two weeks. Such habitats include irrigation tail water as well as standing water in irrigated pastures and other agricultural habitats. Few mosquito species from three major genera are found in these sources, and during warm months and increased irrigation, pastures and other agricultural lands are enormous mosquito producers of *Aedes*, *Psorophora*, and *Culex* mosquitoes.

Wastewater treatment facilities/Storm Water Retention Basins. Aquatic sites in this category include a wide variety of ponds, ditches and other structures designed to handle wastewater of some kind. Included are sewage treatment ponds, wetlands managed for de-nitrification, and storm sewers systems.

5. Other control methods used (alternatives) and their limitations;

With any mosquito or other vector source, the District's first goal is to look for ways to eliminate the source, or, if that is not possible, for ways to reduce the vector potential. The most commonly used methods and their limitations are included in the [CVMVCD Mosquito Reduction Best Management Practices](https://www.cvmosquito.org/sites/g/files/vyhlf4551/f/uploads/bmp2016_0.pdf).

https://www.cvmosquito.org/sites/g/files/vyhlf4551/f/uploads/bmp2016_0.pdf.

Specific methods used by the District include: physical control, biological control, public education, and working with both government and private property owners to find long-term water management strategies that meet their needs while minimizing the need for public health pesticide applications.

Mosquitofish, *Gambusia affinis*, are the most commonly used biological control agent for mosquitoes in the world. Correct use of this fish can provide safe, effective, and persistent suppression of a variety of mosquito species in many types of mosquito sources.

As with all safe and effective control agents, the use of mosquitofish requires a good knowledge of operational techniques and ecological implications, careful evaluation of stocking sites, use of appropriate stocking methods, and regular monitoring of stocked fish. The District uses mosquitofish in accordance with California Fish and Wildlife regulations on private property to control mosquitoes.

The principal habitat characteristic that affects the successful use of mosquitofish is its relative stability. Mosquitofish usually are not effective in intermittently flooded areas unless a refuge impoundment is provided. Because of this, mosquitofish are more effective against mosquito breeding in permanent and semi-permanent water, such as *Culex* spp., *Anopheles* spp., and *Culiseta* spp., than against floodwater species, like *Aedes* spp. and *Psorophora* spp.

6. How much product is needed and how this amount was determined;

The need to apply product is determined by surveillance. Actual use varies annually depending on mosquito abundance. The pesticide amounts presented below were applied to waters of the U.S. within the District boundaries in 2022. These amounts will change from year to year due to annual variability in required pesticide applications for mosquito control. This data is provided as an example of the active ingredients and the amounts used in one year. Other public health pesticides in addition to those listed below may be used as part of the agency's best management practices.

Active Ingredient	Estimated Annual Usage Calendar Year	Unit of Measure
Larvacides		
(S)-Methoprene Liquid	1.38	Gallons
(S)-Methoprene Pellets	2,474.1	Pounds
(S)-Methoprene Wettable Soluble Powder	146	Units
(S)-Methoprene Briquettes	705	Units
(S)-Methoprene Granules	33.51	Pounds
Bti Granules	5,138.71	Pounds
Bti Liquid	84.38	Gallons
Bti Wettable Dissolvable Granules	5,692.04	Pounds

Monomolecular Films	1.06	Gallons
Mineral Oil	43.01	Gallons
Spinosad Liquid	12.54	Gallons
Spinosad Granules	2,951.94	Pounds
Spinosad Tablets	1090	Units
Adulticides		
Lambda-cyhalothrin	5.08	Gallons
Deltamethrin	15.7	Gallons
Permethrin + PBO	43.66	Gallons
Pyrethrin	7.21	Gallons
Pyrethrin + PBO	138.33	Gallons
Resmethrin + PBO	69.59	Gallons

7. Representative monitoring locations and the justification for selecting these locations;

Please see the MVCAC NPDES Coalition Monitoring Plan

8. Evaluation of available BMPs to determine if there are feasible alternatives to the selected pesticide application project that could reduce potential water quality impacts; and

Please refer to CVMVCD Mosquito Reduction Best Management Practices. Evaluation and determination of the feasibility of alternatives to pesticide application are discussed in greater detail in Section 11 below.

9. Description of the BMPs to be implemented. The BMPs shall include, at minimum:

a. Measures to prevent pesticide spills;

- District staff monitors application equipment on a daily basis to ensure it remains in proper working order.
- Spill mitigation kits are placed in all District vehicles and pesticide storage areas to respond to spills.
- Pesticides are kept in secure locations both on District grounds and when in District vehicles.
- Employees are trained on spill prevention and response annually.

b. Measures to ensure that only a minimum and consistent amount is used;

- Spray equipment is calibrated annually and is a part of the Cooperative Agreement with California Department of Public Health.
- District recommended rates (within the range of specified label rates) for all vector control products have been determined through years of applied studies to ensure the proper rates are utilized in each of the mosquito breeding habitats found in the Coachella Valley.
- Each Vector Control Technician uses scales and graduated cylinders to measure control products on a daily basis.

- Products are checked out to certified Vector Control Technicians daily to help ensure accuracy of reporting and limit amount of product used on a daily basis.
- c. A plan to educate Coalition’s or Discharger’s staff and pesticide applicator on any potential adverse effects to waters of the U.S. from the pesticide application;**
- District applicators (State Certified Public Health Vector Control Technicians) are all certified by the California Public Health Department. They are also required to complete in-house pesticide training on a yearly basis and attend, within two-year cycles, state training to maintain their state certification.
- d. Descriptions of specific BMPs for each spray mode, e.g., aerial spray, truck spray, hand spray, etc.;**
- The District calibrates all equipment mounted on trucks, hand held, and UAVlarviciding equipment each year to meet application specifications.
 - Field Supervisors review pesticide application records daily to ensure appropriate amounts of material are being used.
 - Ultra Low Volume (ULV) equipment is calibrated annually for output and droplet size to meet label requirements.
 - Aerial larvaciding equipment is calibrated by the Contractor for each product.
 - Aerial adulthood equipment is calibrated before each use and droplet size is monitored by the District to ensure droplets meet label requirements. Airplanes used in urban ULV applications and the primary helicopter used for rural ULV spraying is equipped with advanced guidance and drift management equipment, to ensure the best available technology is being used to place product in the intended spray area. If a secondary airplane is used in rural ULV applications, it will be equipped with an advanced guidance system.
- e. Descriptions of specific BMPs for each pesticide product used; and**
- The District has determined recommended rates for various products based on years of applied studies in the Coachella Valley. *Please see Exhibit A: District Product Recommended Rates.*
- f. Descriptions of specific BMPs for each type of environmental setting (agricultural, urban, and wetlands)**
- Please see CVMVCD Mosquito Reduction Best Management Practices.

10. Identification of the Problem; prior to first pesticide application, covered under this General Permit, that will result in a discharge of biological and residual pesticides to waters of the US, and at least once each calendar year thereafter, prior to the first pesticide application for that calendar year, the Discharger must do the following for each vector management area:

- a. If applicable, establish densities for larval and adult vector populations to serve as action threshold(s) for implementing pest management strategies**

Only those mosquito sources that District staff determines to represent imminent threats to public health or quality of life are treated. The presence of any mosquito may necessitate treatment, however higher thresholds may be applied depending on the District’s resources,

disease activity, or local needs. Treatment thresholds are based on a combination of one or more of the following criteria:

- Mosquito species present
- Mosquito stage of development
- Pest, nuisance, or disease potential
- Disease activity
- Mosquito abundance
- Flight range
- Proximity to populated areas
- Size of source
- Presence/absence of natural enemies or predators
- Presence of sensitive/endangered species or habitats.

b. Identify target vector species to develop species-specific pest management strategies based on developmental and behavioral considerations for each species;

Please see the [CVMVCD Mosquito Reduction Best Management Practices](#) and the [CVMVCD Mosquito-borne Virus Surveillance and Response Plan](#).

c. Identify known breeding areas for source reduction, larval control program, and habitat management; and

Any site that holds water for more than 96 hours (four days) can produce mosquitoes. Source reduction is the District's preferred solution, and, whenever possible, the District works with property owners to implement long-term solutions to reduce or eliminate the need for continued applications as described in [CVMVCD Mosquito Reduction Best Management Practices](#).

d. Analyze existing surveillance data to identify new or unidentified sources of vector problems as well as areas that have recurring vector problems.

The District continually collects adult and larval mosquito surveillance data and disease surveillance data by testing a certain number of mosquito samples and uses them to guide mosquito control activities. The District also uses GIS software that allows for mapping and modeling vector related issues, which help track mosquito breeding sources under control efforts and frequency and amounts of control products usage.

11. Examination of Alternatives; Dischargers shall continue to examine alternatives to pesticide use and reduce the need for applying larvacides that contain temephos and for spraying adulticides. Such methods include:

a. Evaluating the following management options, in which the impact to water quality, impact to non-target organisms, vector resistance, feasibility, and cost effectiveness, should be considered:

- No action
- Source prevention
- Mechanical or physical source reduction methods
- Cultural methods
- Biological control agents
- Pesticides

If there are no alternatives to pesticides, dischargers shall use the least amount of pesticide necessary to effectively control the target pest.

b. Applying pesticides only when vectors are present at a level that will constitute a nuisance.

The District staff uses the principles and practices of Integrated Vector Management (IVM) as described in [CVMVCD Mosquito Reduction Best Management Practices](#). As stated in item #10 above, locations where vectors may exist are assessed, and the potential for using alternatives to pesticides is determined on a case-by-case basis. Commonly considered alternatives include: 1) Eliminate artificial sources of standing water; 2) Ensure temporary sources of surface water drain within four days (96 hours) to prevent adult mosquitoes from developing; 3) Control plant growth in ponds, ditches, and shallow wetlands; 4) Design facilities and water conveyance and/or holding structures to minimize the potential for producing mosquitoes; and 5) Use appropriate biological control methods that are available.

Implementing preferred alternatives depends on a variety of factors including availability of agency resources, cooperation with stakeholders, coordination with other regulatory agencies, and the anticipated efficacy of the alternative. If a pesticide-free alternative does not sufficiently reduce the risk to public health, pesticides are considered, beginning with the least amount necessary to effectively control the target vector.

12. Correct Use of Pesticides. Coalition’s or Discharger’s use of pesticides must ensure that all reasonable precautions are taken to minimize the impacts caused by pesticide applications. Reasonable precautions include using the right spraying techniques and equipment, taking account of weather conditions and the need to protect the environment.

This is an existing practice of the District and is required to comply with the Department of Pesticide Regulation’s (DPR) requirements and the terms of our California Department of Public Health (CDPH) Cooperative Agreement. All pesticide applicators receive annual safety and spill training in addition to their regular continuing education.

13. Specify a website where public notices, required in Section VIII.B, may be found.

<http://www.cvmosquito.org>

References:

CVMVCD Mosquito Reduction Best Management Practices (Exhibit B attached); Copies may be also requested by calling the Coachella Valley Mosquito and Vector Control District at (760) 342-8287

CVMVCD Mosquito-borne Virus Surveillance and Response Plan. 2015 (Exhibit C attached); Copies may be also requested by calling the Coachella Valley Mosquito and Vector Control District at (760) 342-8287

MVCAC NPDES Coalition Monitoring Plan.

Copies may requested by calling MVCAC at (916) 440-0826

Exhibit A

District Product Recommended Rates

Larvicides – not effective on pupae

Product	CVMVCD Recommended Rate	Active Ingredient	Mode of Action	Residual	FYI
Altosid Briquet	1 briquet /100sq. feet Apply in non-flowing or low-flowing water up to 2 feet deep. Use 1 additional briquet per 2 ft of water depth deeper than 2 feet	8.62% S-Methoprene	Does not have to be ingested. Insect growth regulator	21 to 30 days	Requires treatment of whole body of water. It's ok to see all instars and pupae when using this product. Re-treat after 30 days
Altosid XR Briquets	1 briquet /100sq. feet Apply in non-flowing or low-flowing water up to 2 feet deep. Use 1 additional briquet per 2 ft of water depth deeper than 2 feet	2.1 % S-Methoprene	Does not have to be ingested Insect growth regulator	District: 75 days; Label: 150 days	It's ok to see all instars and pupae when using this product. Re-treat after 150 days
Altosid Liquid	3-4oz / acre. District Mandated Minimum Rate 0.03 oz/330 sq ft or less Applications should be made within 3-5 days of pupation (2 nd , 3 rd , 4 th larval instars)	5% S-Methoprene	Does not have to be ingested Insect growth regulator	7 to 10 days	It's ok to see all instars and pupae when using this product. Re-treat after 7 days
Altosid Pellets	7.5 to 10 lbs / acre Label Rate: 2.5 - 10 lbs	4.25% S-Methoprene	Does not have to be ingested Insect growth regulator	30 days	It's ok to see all instars and pupae when using this product. Re-treat after 30 days
Altosid Pellets WSP	1 pouch for up to 135 sq. ft.	4.25 % S-Methoprene	Does not have to be ingested Insect growth regulator	30 days	It's ok to see all instars and pupae when using this product. Re-treat after 30 days
Altosid P35	Label Rate: 2.5 – 20 lbs/acre Use at least 15 lbs per acre when treating for <i>Culex</i> mosquitoes	4.25% S-Methoprene	Does not have to be ingested. Insect growth regulator	35 days (when applied at higher rate)	Comparable activity to MetaLarv S-PT, but a higher rate is needed (slower to dissolve than MetaLarv). It's ok to see all instars and pupae when using this product. Re-treat after 35 days
MetaLarv S-PT	7 lbs. / acre. Label Rate: 2.5-10 lbs/ac Use a higher rate when water is deep, has dense vegetation or is polluted, high water flows or mosquito population is high	4.2% S-Methoprene	Does not have to be ingested Insect growth regulator	Up to 42 days	It's ok to see all instars and pupae when using this product. Apply up to 28 days pre-flood. Can be applied to areas containing fish or contact with humans or animals.
MetaLarv XRP	1 briquet /100sq. feet Treat based on surface area	4.2% S-Methoprene	Does not have to be ingested Insect growth regulator	Up to 105 days in shade	It's ok to see all instars and pupae when using this product. Can be applied to areas containing fish or contact with humans or animals.
SumiLarv 0.5G	1 briquet /500 gallons up to 1 ft deep See label for larger and deeper sites.	0.5% pyriproxifen	Does not have to be ingested Insect growth regulator	Up to 42 days. Label suggests re-treat at 28 days.	It's ok to see all instars and pupae when using this product.

Larvicides – not effective on pupae

Product	CVMVCD Recommended Rate	Active Ingredient	Mode of Action	Residual	FYI
Nyguard IGR	Label Rate: 4 – 12 mL per 1500 sq. ft. Use a higher rate when conditions make it difficult to control the population.	10% pyriproxifen	Does not have to be ingested Insect growth regulator	28 days	It's ok to see all instars and pupae when using this product. Do not use in natural waters or active waterways. Do not use in truck mounted sprayers.
Censor	6 - 9 lbs/acre Label Rate:3.5 - 9 lbs, up to 20 lbs Use a higher rate if water has dense vegetation, polluted and mosquito population is high	0.5% Spinosad mixture of spinosyn A & D	Neuro-toxins (interfere with nerve & muscle function)	7 days	Re-apply after 7 days if needed (late instars present)
Natular 2EC ★ OMRI listed	2.5 oz/acre Use a higher rate when water is polluted and mosquito population is high. Label Rate: 1.1 to 2.8 oz/acre, up to 6.4 oz/ac	20.6% Spinosad mixture of spinosyn A & D	Neuro-toxins (interfere with nerve & muscle function)	7 days; up to 14 days	Re-apply after 7 days if needed (late instars present)
Natular 20EC	2.5 oz/acre Use a higher rate when water is polluted and mosquito population is high. Label Rate: 1.1 to 2.8 oz/acre, up to 6.4 oz/ac	20.6% Spinosad mixture of spinosyn A & D	Neuro-toxins (interfere with nerve & muscle function)	7 days; up to 14 days	Re-apply after 7 days if needed (late instars present)
Natular G ★ OMRI listed	6 - 9 lbs/acre Label Rate:3.5 - 9 lbs, up to 20 lbs Use a higher rate if water has dense vegetation, polluted and mosquito population is high	0.5% Spinosad mixture of spinosyn A & D	Neuro-toxins (interfere with nerve & muscle function)	7 days	Re-apply after 7 days if needed (late instars present)
Natular G30 ★ OMRI listed	7 to 10 lbs/acre Label Rate: 5 to 20 lbs/acre Use a higher rate if water has dense vegetation, polluted and mosquito population is high	2.5% Spinosad mixture of spinosyn A & D	Neuro-toxins(interfere with nerve & muscle function)	30 days	More frequent applications may be made if monitoring indicates that larval populations have reestablished by seeing late instars
Natular SC	Label Rate: 1.1 to 2.8 oz/acre, up to 6.4 oz/ac Use a higher rate when water is polluted and mosquito population is high.	22.5% Spinosad mixture of spinosyn A & D	Neuro-toxins (interfere with nerve & muscle function)		Re-apply after 7 days if needed (late instars present)

Larvicides – not effective on pupae

Product	CVMVCD Recommended Rate	Active Ingredient	Mode of Action	Residual	FYI
Natular T30 ★ OMRI listed	1 tablet up to 100 sq/ft (less than 2 feet depth)	5% Spinosad mixture of spinosyn A & D	Neuro-toxins (interfere with nerve & muscle function)	30 days	Water flow may increase the dissolution of the tablet. Evaluate applications for loss of effectiveness by noting presence of late instars.
Natular XRT ★ OMRI listed	1 tablet up to 100 sq/ft (less than 2 feet depth)	6.25% Spinosad mixture of spinosyn A & D	Neuro-toxins (interfere with nerve & muscle function)	District: 90 days Label: 180 days	Water flow may increase the dissolution of the tablet. Evaluate applications for loss of effectiveness by noting presence of late instars
AquaBac 200G	10 lbs. to 20 lbs. / acre Label Rate: 2.5 to 20 lbs/ac Use a higher rate when water has dense vegetation or is polluted and mosquito population is high (especially 3rd and early 4th)	200 toxic units Bacillus thuringiensis israelensis	Stomach poison. Stops feeding, causes breakdown of midgut resulting in death.	48 to 72 hrs (Quick kill)	Not recommended in water below 55° F. Water temp below 68°F larvae reduce their feeding
VectoBac 12AS	16 to 32 oz/ac; Label Rate: 4oz. – 32oz. / acre District Mandated Minimum Rate 0.33 oz/450 sq ft or less Use a higher rate when water has dense vegetation or is polluted and mosquito population is high especially 3rd and early 4th	1200 toxic units Bacillus thuringiensis israelensis	Stomach poison. Stops feeding, causes breakdown of midgut resulting in death.	24 hrs (Quick kill)	7-14 days interval between applications. Not recommended in water below 55° F. Water temp below 68°F larvae reduce their feeding
VectoBac G	10 lbs- 20 lbs / acre Label Rate:2.5 - 20 lbs Use higher rate when water has dense vegetation or polluted & mosquito population is high especially 3rd ,early 4th)	200 toxic units Bacillus thuringiensis israelensis	Stomach poison. Stops feeding, causes breakdown of midgut resulting in death.	24 hrs (Quick kill)	7-14 days interval between applications. Not recommended in water below 55° F. Water temp below 68°F larvae reduce their feeding
VectoBac WDG ★ OMRI listed	1.75-7.0 oz/acre Use a higher rate when water is polluted 7.0-14 oz/acre (especially 3rd and early 4th)	3000 toxic units Bacillus thuringiensis israelensis	Stomach poison. Stops feeding, causes breakdown of midgut resulting in death.	24 hrs (Quick kill)	Not recommended in water below 55° F. Water temp below 68°F larvae reduce their feeding
Spheratax SPH 50G WSP	1 pouch up to 50 sq. ft.	5.0% <i>Bacillus sphaericus</i> , (Bs)	Produces extra-cellular crystalline toxins that destroys the gut lining of larvae when ingested (starvation)	7 to 10 days	Can be used in areas that contain fish and areas by or in contact with humans and pets. Bs bacteria will multiply in larval cadavers. Best choice when high larval counts.

Larvicides – not effective on pupae

Product	CVMVCD Recommended Rate	Active Ingredient	Mode of Action	Residual	FYI
VectoLex WDG	1 - 1.5 lbs/ac. Use higher rates where extended residual control is required or in deep water or dense surface cover	51.2% <i>Bacillus sphaericus</i> , (Bs)	Produces extra-cellular crystalline toxins that destroys the gut lining of larvae when ingested (starvation)	7 to 10 days	Bs bacteria will multiply in larval cadavers. Best choice when high larval counts. 1- 4 weeks interval between applications.
VectoLex WSP	1 pouch up to 50 sq. ft.	7.5% <i>Bacillus sphaericus</i> , (Bs)	Produces extra-cellular crystalline toxins that destroys the gut lining of larvae when ingested (starvation)	7 to 10 days	Can be used in areas by or in contact with humans and animals, including fish. Bs bacteria will multiply in larval cadavers. Best choice when high larval counts.
VectoMax FG ☆ OMRI listed	10 lbs. to 20 lbs. / acre. Label Rate: 5 to 20 lbs/ac Use a higher rate when water has dense vegetation or is polluted and mosquito population is high	Bacillus thuringiensis israelensis & Bacillus sphaericus	Produces extra-cellular crystalline toxins combination that destroys the gut lining of larvae when ingested (starvation)	7 to 10 days	Use in sources where vegetation is present. Per label it can be used where fish are present. For Organic Production.
VectoMax WSP	1 pouch/50 sq. ft.	Bacillus thuringiensis israelensis & Bacillus sphaericus	Produces extra-cellular crystalline toxins combination that destroys the gut lining of larvae when ingested (starvation)	7 to 10 days	Treatment based on surface area. Safe to use in areas by or in contact with humans and animals. For Organic Production
VectoPrime FG	Label rate: 1.25 – 20 lbs/ac Use higher rate in pre-flood applications or when water has dense vegetation or is polluted and mosquito populations is high	6.07% Bacillus thuringiensis israelensis and 0.10% S-Methoprene	Bti destroys gut lining and methoprene inhibits maturation.		Use when all stages of larvae are present. May still see mosquitoes present when the product is working
Duplex G	Label rate: 2.5 – 20 lbs/ac Use higher rate in pre-flood applications or when water has dense vegetation or is polluted and mosquito populations is high	375 toxic units of BTI (5.35%); 1.60% S-Methoprene	Stomach poison. Stops feeding, causes breakdown of midgut resulting in death AND Does not have to be ingested Insect growth regulator	28 days (must use at least 7.5 lbs. per acre to achieve)	Use when all stages of larvae are present. May still see mosquitoes present when the product is working. Wear a respirator.

District Approved Mixtures					
Product	CVMVCD Recommended Rate	Active Ingredient	Mode of Action	Residual	FYI
Vectomix: 4:1 Vectolex FG and Vectobac G	15 to 20 lbs/ac (Use the higher rates in high organic or polluted waters.)	<i>Bacillus thuringiensis israelensis</i> & <i>Bacillus sphaericus</i>	Produces extra-cellular crystalline toxins <u>combination</u> that destroys the gut lining of larvae when ingested	7 to 10 days	Use in sources where vegetation is present.
Duplex Bti 12AS/Altosid 6:1 or 12:1 ratio	16 to 32 oz/acre (mixed product) Use higher rates where extended residual control is required or in deep water or dense surface cover	S-Methoprene & <i>Bacillus thuringiensis israelensis</i>	Bti destroys gut lining and methoprene inhibits maturation.	5 to 10 days	Use when all stages of larvae are present.
Pupacides					
Product	CVMVCD Recommended Rate	Active Ingredient	Mode of Action	Residual	FYI
Agnique MMF	0.5 gal to 1 gal. per acre District Mandated Minimum Rate 0.33 oz/113 sq. ft or less	100% Long chain Multi-branched alcohol	Forms a thin surfactant layer on water surface. Larvae/pupae can't attach to surface & die from exhaustion.	5 to 22 days	Slow acting, longer residual. Use the fan spray method when applying this product.
Coco Bear Larvicide Oil	3 gallon per acre, (9 fl. oz./1000 sq. ft.) Label Rate: 3-5 gallons/ acre, (9-15 fl. oz./ac.). Use higher rates with heavier, denser vegetation and/or substantially polluted water.	10% Mineral Oil	Kills by suffocation. Mosquitoes will not develop resistance	5 to 7 days	Do not apply with wind speeds greater than 15 mph. Apply as a medium or course spray with partial cone spray pattern.

Imported Fire Ant Products

Product	CVMVCD Recommended Rate	Active Ingredient	Mode of Action	Residual	FYI
Advion Fire Ant Bait	1.5 lbs. / acre broadcast or .5 oz./mound uniformly distributed 3-4 feet around the mound.	0.045% Indoxacarb	Blocking of nerve sodium channel	N/A	6 lbs./ac total or 4 applications in a one year period. Retreat after 12-16 weeks if needed. May retreat after 7 days if rain or irrigation within 2-3 hours post-treatment.
Distance Fire Ant Bait	1-1.5 lbs./acre broadcast or 0.35-0.5 ounces per 1000 sq ft	0.5% pyriproxifen	Insect growth regulator which prevents larvae from becoming adults	N/A	Retreat after 12-16 weeks if needed. Do not use another product for fire ants at the site for 7-10 days following treatment
Extinguish Plus	1.5 lbs. / acre broadcast or .5 oz./mound uniformly distributed 3-4 feet around the mound.	0.365% Hydromethylnon & 0.25% S-Methoprene	Metabolic inhibitor affecting the mitochondrial membrane halting oxidative phosphorylation	N/A	Do not exceed 8 lbs./ac./yr. or 4 applications. Do not apply within 6 hours of a rain event.
Siesta Fire Ant Bait	1.5 lbs./acre broadcast Label Rate: 1 – 1.5 lbs./acre or 1 – 2 oz./mound uniformly distributed 3-4 feet around the mound	0.063% Metaflumizone	Blocking of nerve sodium channel	N/A	6 lbs./ac total or 4 applications in a one year period. Retreat after 12-16 weeks if needed. May retreat if rainfall within 12 hours of application.

BEE PRODUCT USE GUIDELINES

Product	Product Application Rate (Label)	Active Ingredient	Mode of Action	CVMVCD Recommended Habitat Use	Persistence
DeltaDust	Amount to be applied will vary with site but should usually be in the range of 2-3 grams per square yard or .5 lbs. per 1000 square feet.	Deltamethrin .05%	Axonic nerve toxin	Single use dust to remove nuisance bees by thoroughly dusting nest, entrance and surrounding areas where insects alight.	Residual up to 8 months. Waterproof

MOSQUITO ADULTICIDE PRODUCT USE GUIDELINES

Product	Product Application Rate (Label)	Active Ingredient	Mode of Action	CVMVCD Recommended Habitat Use	Persistence
Aqua-Reslin	0.007 pounds permethrin/acre for ULV applications. For barrier treatments do not exceed 0.1 lbs. AI/acre.	Permethrin (microencapsulated), 20%, Piperonyl Butoxide, 20%	Axonic nerve toxin	0.007 ponds permethrin/acre for ULV applications. For barrier treatments do not exceed 0.1 lbs AI/acre. Dilute with water only.	Not specified on label.
BVA 13 Oil	Use as diluent in resmethrin, pyrethrum or pyrethroid based mosquito adulticide where dilution of product is required.	Refined Petroleum Distillate, 100%	Diluent	Use as necessary to dilute oil-based adulticide products to achieve proper application rates. Use only with aerial applications. Approved for a wide variety of crops.	Diluent only.
Demand CS	Structural or vegetation barrier treatment applied at 0.2-0.8 fl. oz. Demand CS/1000 sq. ft. of treated surface area	Lambda-cyhalothrin, microencapsulated pyrethroid, 9.7%	Axonic nerve toxin	Structural or vegetation barrier treatment applied to the surface at 0.6 fl. oz. of Demand CS/1000 sq. ft. of treated surface area to contact adult mosquitoes upon landing and resting on the treated surface.	Apply at 7 day intervals for residual control.
DeltaGard	No more than 0.00134 lbs. of a.i./acre/72 hrs. If applying 3 days in a row, use 0.00044 lbs of a.i./acre. Can be applied to crops. No more than 25 applications at 0.00134 of a.i./acre/year (unless evidence of virus activity). No more than 0.036 lbs of a.i. per site per year	Deltamethrin, 2%	Axonic nerve toxin - (Type II pyrethroid)	No application to swamps. Marshes, or tidal areas in CA Helicopter application must be at least at 50 ft. altitude.	Not specified on label
Dibrom Concentrate	No more than 2 fl oz concentrate in 7-day period (can be increased if virus present). No more than 10.73 pounds of naled a.i./acre/year.	Naled, 87.4%	Acetylcholin esterase inhibitor	Helicopter application must be at least at 75 ft. altitude. Apply ½ to 1 fl. oz. of undiluted DIBROM Concentrate per acre (equivalent to 0.05 to 0.1 lb. a.i./acre). Use the 1 fl. oz. rate where heavy vegetation exists; i.e., woodlands) Must use a closed system	Not specified on label
Duet	No more than 0.0036 lb of sumithrin and PBO and 0.00072 lb prallethrin per acre in 1 application or in 24-hours. Do not apply more than 0.0108 lb. each of sumithrin and PBO and 0.0022 lb prallethrin to the same treatment area in a 7 day period. Do not apply more than 0.0216 lb each of sumithrin and PBO and 0.0043 lb prallethrin to the same treatment area in 1 month. Do not exceed 0.1 lb of sumithrin or PBO or 0.02 lb prallethrin per acre in any site in year.	Prallethrin, 1%, Sumithrin, 5% Piperonyl Butoxide, 5%	Axonic nerve toxin	Use a flow rate of 2.6 to 7.8 fl. oz per minute at vehicle speed of 10 mph by truck, only when wind ≥ 1mph. Use a flow rate of 0.43 to 1.28 fl. oz. per acre by helicopter. Apply only at a height greater than 75 feet above ground. May be applied over crops	Not specified on label

Product	Product Application Rate (Label)	Active Ingredient	Mode of Action	CVMVCD Recommended Habitat Use	Persistence
EverGreen ULV 5-25	Do not exceed 25 applications at 0.008 lbs a.i./acre/year. No site should receive more than 0.2 pounds of pyrethrin in a year.	Pyrethrin, 5%. Piperonyl Butoxide, 25%	Axonic nerve toxin	Up to 25 applications of up to 0.008 pounds pyrethrins/acre in a 365 day-period. Up to 0.2 lbs. of pyrethrin/acre/year and up to 2.0 lbs. PBO/acre/year (use the lower value). Helicopter application must be at least at 75 ft. altitude.	Not specified on label
Fyfanon ULV	Do not apply more than 0.23 lb a.i./acre/day Do not treat more than 3 times in a week unless virus activity	Malathion, 96.5%	Acetylcholin esterase inhibitor	Ground application in enclosed cab only. Helicopter application must be at least at 75 ft. altitude. Apply only when weather conditions are favorable; rising air currents may cause undesirable drift	Not specified on label
Merus 3.0 OMRI listed ★	0.0025 lb a.i./ acre is sufficient for <i>Cx. tarsalis</i> . . No site should receive more than 0.2 pounds of pyrethrin in a year.	Pyrethrin, 5%	Axonic nerve toxin	Up to 0.2 lbs. of pyrethrin/acre/year Helicopter application must be at least at 75 ft. altitude.	Not specified on label
Scourge 18+54	Do not exceed 25 applications at 0.007 lbs a.i./acre/year. No site should receive more than 0.18 pounds of resmethrin in a year.	Resmethrin, 18%. Piperonyl Butoxide, 54%	Axonic nerve toxin	No more than 0.007 pounds resmethrin/acre for ULV applications. Helicopter application must be at least at 75 ft. altitude.	Not specified on label
Trumpet EC	No more than one treatment per day. 2 fl oz concentrate in 7-day period (can be increased if virus present). No more than 10.71 pounds of naled a.i./acre/year.	Naled, 78%	Acetylcholin esterase inhibitor	Helicopter application must be at least at 75 ft. altitude. Apply 0.6 to 1.2 fl. oz. of undiluted TRUMPET EC per acre (equivalent to 0.05 to 0.1 lb. a.i./acre). Use the 1.2 fl. oz. rate where heavy vegetation exists; i.e., woodlands). Must use a closed system	Not specified on label

GENERAL NPDES PERMIT FOR BIOLOGICAL AND RESIDUAL
PESTICIDE DISCHARGES FROM VECTOR CONTROL APPLICATIONS
ORDER 2016-0039-DWQ

NPDES NO. CAG990004

GENERAL NPDES PERMIT FOR BIOLOGICAL AND RESIDUAL
PESTICIDE DISCHARGES FROM VECTOR CONTROL
ORDER 2016-0039-DWQ

Attachment E - NOTICE OF INTENT

**WATER QUALITY ORDER 2016-0039-DWQ
GENERAL PERMIT CAG990004**

**STATEWIDE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT FOR BIOLOGICAL AND RESIDUAL PESTICIDE DISCHARGES
TO WATERS OF THE UNITED STATES
FROM VECTOR CONTROL APPLICATIONS**

I. NOTICE OF INTENT STATUS (see Instructions)

Mark only one item

- A. New Applicator
- B. Change of Information: WDID#
- C. Change of ownership or responsibility: WDID#
- D. Enrolled under Order 2011-0002-DWQ: WDID# 7000P000007

II. DISCHARGE INFORMATION

- A. Name: Coachella Valley Mosquito and Vector Control District
- B. Mailing Address: 43-420 Trader Place
- C. City: Indio
- D. County: Riverside
- E. State: CA
- F. Zip Code: 92201
- G. Contact Person: Jeremy Wittie
- H. Email address: jwittie@cvmosquito.org
- I. Title: General Manager
- J. Phone: 760-342-8287

III. BILLING ADDRESS (Enter information only if different from Section II above)

- A. Name

GENERAL NPDES PERMIT FOR BIOLOGICAL AND RESIDUAL
PESTICIDE DISCHARGES FROM VECTOR CONTROL APPLICATIONS

ORDER 2016-0039-DWQ

NPDES NO. CAG990004

B. Mailing Address

C. City

D. County

E. State

F. Zip Code

G. Email address

H. Title

I. Phone

IV. RECEIVING WATER INFORMATION

A. Biological and residual pesticides discharge to (check all that apply)*:

1. Canals, ditches, or other constructed conveyance facilities owned and controlled by Discharger.

Name of the conveyance system:

2. Canals, ditches, or other constructed conveyance facilities owned and controlled by an entity other than the Discharger.

Owner's name: Various – See Attachment A

Name of the conveyance system: applications may be made to various conveyance systems within Riverside County

3. Directly to river, lake, creek, stream, bay, ocean, etc.

Name of water body: Various – See Attachment A – Applications historically have been made to the Whitewater River, the All-American canal, their tributaries, and the canals connected to the Salton Sea

*A map showing the affected areas for items 1 to 3 above may be included.

B. Regional Water Quality Control Board(s) where application areas are located

(REGION 1, 2, 3, 4, 5, 6, 7, 8, or 9): Region 7

(List all regions where pesticide application is proposed.)

A map showing the locations of A1-A3 in each Regional Water Board shall be included.

V. PESTICIDE APPLICATION INFORMATION

A. Target Organisms:

X Vector Larvae

X Adult Vector

B. Pesticide Used: List name, active ingredients and, if known, degradation byproducts

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See Attachment B

C. Period of Application:

Start Date: January 1

End Date: December 31

D. Types of Adjuvants Added by the Discharger:

See Attachment B

VI. PESTICIDES APPLICATION PLAN

A. Has a Pesticides Application Plan been prepared?*

Yes No

If not, when will it be prepared?

*A copy of the Pesticides Application Plan shall be included with the NOI.

B. Is the applicator familiar with its contents?

Yes No

Have potentially affected governmental agencies been notified?

Yes No

*If yes, a copy of the notifications shall be attached to the NOI. See attached

VIII. FEE

Have you included payment of the filing fee (for first-time enrollees only) with this submittal?

Yes No NA

IX. Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. Additionally, I certify that the provisions of the Order, including developing and implementing a monitoring program, will be complied with."

A. Printed Name: Jeremy Wittie

B. Signature:



Date:

6/7/23

C. Title: General Manager

GENERAL NPDES PERMIT FOR BIOLOGICAL AND RESIDUAL
PESTICIDE DISCHARGES FROM VECTOR CONTROL APPLICATIONS
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X. FOR STATE WATER BOARD USE ONLY

WDID: Date NOI Received: Date NOI Processed:

Case Handler's Initial: Fee Amount Received: \$ Check#: