

The NPDES Permit requires a Pesticides Application Plan (PAP) that contains the following elements:

1. Description of the target area and adjacent areas, if different from the water body of the target area;

The West Valley Mosquito and Vector Control District is in the Southwest corner of the County of San Bernardino bounded as follows:

- On the South and West by the San Bernardino County Line
- On the North by the northerly boundary of the Cities of Rancho Cucamonga and Upland
- On the East by the Easterly boundary of the City of Rancho Cucamonga and Sphere of Influence boundary of the City of Ontario

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

Please see the Best Management Practices for Mosquito Control in California.

Routinely, public education, environmental management, and source reduction are the primary approaches in mosquito control adopted by the District. Control measures will be implemented when source reduction is inadequate to keep the mosquito populations below the levels of nuisance and disease transmission. The judicious use of pesticides is considered after reviewing surveillance data on mosquitoes and mosquito-borne diseases.

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 NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications was amended to list the approved active ingredients rather than having specific products named. All pesticide label restrictions and instructions will be followed for pesticides that contain the active ingredients listed below. In addition, pesticides that fall under the “minimum risk” category may be used. The minimum risk pesticides have been exempted from FIFRA requirements. These products may be applied by ground (hand, truck, ATV, backpack, etc.) or by air (helicopter or fixed wing aircraft).

List of Active Ingredients:

<i>Bacillus thuringiensis</i> subsp. <i>israelensis</i>
<i>Bacillus sphaericus</i> (<i>Lysinibacillus sphaericus</i>)
Cypermethrin
Deltamethrin
Dichlorvos
Diflubenzuron
Etofenprox
Lambda-Cyhalothrin
Malathion
Methoprene (s-methoprene)
Monomolecular Films
Naled
N-octyl Bicycloheptene Dicarboximide (MGK-264)
Petroleum Distillates
Permethrin
Piperonyl butoxide
Potassium Salts of fatty acids
Prallethrin
Pyrethrin
Resmethrin
Spinosad
Sumithrin
Temephos
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 property owners to implement long-term solutions to reduce or eliminate the need for continued pesticide applications as described in Best Management Practices for Mosquito Control in California. Please see District Boundary Map for our jurisdiction area. The typical sources treated by this District include:

- dairy waste water lagoons
- dairy pastures
- irrigated agricultural fields
- unmaintained above and underground stormwater BMP devices
- Flood control channels
- neglected swimming pools

- natural and manmade riparian habitats
- manmade wetlands
- persistently clogged street gutters and drains
- other small backyard sources.
- miscellaneous standing water sources

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

With all mosquitoes or other vector sources, the WVMVCD's first goal is to look for ways to eliminate the sources, or, if that is not practical, for ways to reduce the vectors through land and water management, public education and biological control. The most commonly used methods and their limitations are included in the Best Management Practices for Mosquito Control in California.

The WVMVCD's best management practices are based on integrated vector management (IVM). The District emphasizes promoting public awareness of removing standing water to curtail mosquito breeding. Neglected swimming pools must be restored to normal operational conditions or drained. Aboveground BMPS, e.g. swales, must be kept weed and debris free and must not allow standing water for more than 96 hours. Underground BMPS, e.g. different types of vaults, must be cleaned out regularly of all debris. Wherever applicable, mosquitofish are planted in neglected swimming pools in vacant properties, fish ponds, water troughs or ponds on defunct dairies, or other permanent water sources that are not connected to any of the waterways. Use of pesticides to control or prevent mosquito breeding is always the last resort.

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

The need to apply products is determined by surveillance. Products are applied per label specifications, which have been determined by EPA under FIFRA. Actual use varies annually depending on environmental factors, mosquito abundance and the presence of potential breeding sources. The pesticide amounts presented below were taken from the WVMVCD's 2016 PUR as an estimate of pesticide use in 2016. Other public health pesticides in addition to those listed below may be used as part of the agency's best management practices.

Pesticides Applied by WVMVCD for Mosquito Control in 2015.

Trade Name	EPA #	Active Ingredients (AIs)	Classification	Usage in 2015
Altosid Pellets	2724-448	s-methoprene	Biorational - IGR	4,725 Lbs
Altosid Liquid Larvicide	432-763	s-methoprene	Biorational - IGR	24.6 Gal.
AquaBac PP-OSF	62637-15	Bacillus thuringiensis israelensis (Bti)	Biopesticide-Microbial	246.1 Lbs
BVA2 Lavicidal oils	70589-1	Petroleum distillate	Surface film-larvicides / pupicide	3.6 Gal.
Drione	4816-353	Pyrethrins, PBO	Pyrethrins / Pyrethroids	5.2 Lbs

FourStar Bti CRG	85685-4	B. thuringiensis israelensis (Bti)	Biopesticide-Microbial	635 Lbs
M-Pede	53219-6-ZA	Potassium salts of unsaturated aliphatic carboxylic acids, Ethyl alcohol	Detergent	2.2 Gal.
Masterline Kontrol Oil	73748-10	Petroleum distillate	Surface film-Larvicide / pupicide	704.2 Gal.
Natular T30	8329-85	Spinosad	Biopesticide-Microbial	0.6 Lbs
Natular NG30	8329-83	Spinosad	Biopesticide-Microbial	814 Lbs
Nuvan Prostrips	5481-553	Dichlorvos	Oragnophosphate-Adulticide	0.07 Lbs
Raid Wasp & Hornet Killer	4822-333	Tetramethrin, Permethrin	Pyrethroids-Adulticide	0.03 Lbs
Summit Dunks	6218-47	B. thuringiensis israelensis (Bti)	Biopesticide-Microbial	5.5 Lbs
Suspend SC	432-763	Pyrethrins	Pyrethroids-Adulticide	0.01 Gal.
VectoBac 12AS	275-102	B. thuringiensis israelensis (Bti)	Biopesticide-Microbial	118.7 Gal.
VectoBac WDG	73049-56	B. thuringiensis israelensis (Bti)	Biopesticide-Microbial	66.5 Lbs
VectoLex WDG	73049-57	Bacillus sphaericus (Bsph)	Biopesticide-Microbial	356.3 Lbs
VectoMax FG	73049-429	Bti and B. sphaericus	Biopesticide-Microbial	0.7 Lbs
VectoMax WSP	73049-429	Bti and B. sphaericus	Biopesticide-Microbial	27.2 Lbs

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

Examples of alternatives to pesticide application include:

- Coordinating with other agencies, such as San Bernardino County Vector Control Program, Water Conservation District, Utilities Districts and Flood Control District, the cities and other governmental agencies to maintain flowing water in flood control channels by removing vegetation and debris;
- Coordinating with Southern Pacific Transportation Co. to abate the vegetation and removing standing water in shallow spots;
- Coordinating with Conservation Districts to implement guidelines on new and current mitigation projects;
- Enforcing vegetation control in retention and detention ponds;
- Inspecting and enforcing the practice of turning over and spread thinly of cow manure every 3 days to prevent fly breeding;
- Enforcing the rule that property owners are responsible for weed abatement;
- Inspecting and enforcing regular clean out of underground BMP devices by property owners or property management companies;

- Aerial surveillance program to identify unmaintained swimming pools and spas;
- Coordinating with US Army Corp of Engineers to remove vegetation and debris from riparian habitat to allow for unobstructed water flow;
- Enforcement of vegetation and water quality management in constructed wetlands to mitigate mosquito breeding;
- Collaboration with CalTrans to mitigate mosquito breeding in drainages associated with highways;
- Enforcement of California Health and Safety Code section 2060-2067.

Also please see the [Best Management Practices for Mosquito Control in California](#)

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

a. measures to prevent pesticide spill;

District staff ensures equipment used to apply pesticides works properly by inspecting before each use and weekly. Supplies to contain spills are prepared in all vehicles that carry pesticides and areas where pesticides are stored. Staff is trained annually and as often as necessary to prevent and contain spills.

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

Equipment used to apply pesticides is calibrated at least once per year as required by the MOU with the CA Dept. of Public Health. However, the pesticide label and associated registration by USEPA and CDPR are the authority of how much product can be legally applied to control the targets.

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;

Applicators are required to complete pesticide training on an annual basis. The local agricultural commissioner and/or CDPH keep records of these training sessions for review. Employees certified by the CDPH must perform at least 20 hours of Continuing Education units to maintain their certification during each 2-year cycle.

d. descriptions of specific BMPs for each spray mode, e.g. aerial spray, truck spray, hand spray, etc.;

District calibrates all equipment used to apply pesticides at least annually. Records of treatments are stored on database and reviewed daily for accuracy. Ultra Low Volume (ULV) equipment is calibrated to apply pesticides per label requirements. The contractor will calibrate aerial equipment used to apply pesticides. Any aircraft that applies pesticides is required to use the best available system to apply the product correctly.

e. descriptions of specific BMPs for each pesticide product used;

Please see: [Best Management Practices for Mosquito Control in California,](http://www.cdph.ca.gov/HealthInfo/discond/Pages/MosquitoBorneDiseases.aspx)
<http://www.cdph.ca.gov/HealthInfo/discond/Pages/MosquitoBorneDiseases.aspx>

f. descriptions of specific BMPs for each type of environmental setting (agricultural, urban, and wetland).

Please see: [Best Management Practices for Mosquito Control in California,](http://www.cdph.ca.gov/HealthInfo/discond/Pages/MosquitoBorneDiseases.aspx)
<http://www.cdph.ca.gov/HealthInfo/discond/Pages/MosquitoBorneDiseases.aspx>

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;

The West Valley Mosquito and Vector Control District staff only apply pesticides to sources of mosquitoes that represent threats to public health or quality of life. The presence of any mosquito may necessitate treatment, however higher thresholds may be applied depending on the agency's resources, disease activity, surveillance data, 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 sources;
- 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;

Mosquitoes Present in the West Valley Mosquito and Vector Control District	
<i>Culex quinquefasciatus</i>	<i>Anopheles hermsi</i>
<i>Culex stigmatosoma</i>	<i>Anopheles fransiscanus</i>
<i>Culex tarsalis</i>	<i>Aedes sierrensis</i>
<i>Culex erythrothorax</i>	<i>Anopheles punctipennis</i>
<i>Culiseta incidens</i>	<i>Aedes vexans</i>
<i>Culiseta inornata</i>	<i>Any introduced new species</i>

Please see the [Best Management Practices for Mosquito Control in California](#) and the [California 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 (4 days) can produce mosquitoes. Source reduction is the agency's preferred solution, and whenever possible the agency works with property owners to implement long-term solutions to reduce or eliminate the need for continued pesticide applications as described in the [Best Management Practices for Mosquito Control in California](#).

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

This is included in the [Best Management Practices for Mosquito Control in California](#) and the [California Mosquito-borne Virus Surveillance and Response Plan](#) that the agency uses. The West Valley Mosquito and Vector Control District continually collects adult and larval mosquito surveillance data, dead bird reports, and sentinel chicken test results, and monitors regional mosquito-borne disease activity detected in humans, horses, birds, and/or other animals, and uses these data to guide mosquito control activities.

11. Examination of Alternatives. Dischargers shall continue to examine alternatives to pesticide use in order to reduce the need for applying larvicides 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
 - Prevention
 - Mechanical or physical 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.

District uses the principles and practices of Integrated Vector Management (IVM) as described on pages 26 and 27 of the Best Management Practices for Mosquito Control in California. 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 vegetation growth in ponds, ditches, and shallow wetlands; 4) Recommend designs of 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. Additional alternatives to using pesticides for managing mosquitoes are listed on pages 4-19 of the Best Management Practices for Mosquito Control in California.

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.

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

This describes the District's existing integrated vector management (IVM) program, as well as the practices described in the California Mosquito-borne Virus Surveillance and Response Plan and Best Management Practices for Mosquito Control in California that are used by this agency.

A "nuisance" is specifically defined in California Health and Safety Code (HSC) §2002(j). This definition allows vector control agencies to address situations where even a low number of vectors may pose a substantial threat to public health and quality of life. In practice, the definition of a "nuisance" is generally only part of a decision to apply pesticides to areas covered under this permit. As summarized in the California Mosquito-borne Virus Surveillance and Response Plan, the overall risk to the public when vectors and/or vector-borne disease are present is used to select an available and appropriate material, rate, and application method to address that risk in the context of our IVM program.

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. If applicable, specify a website where public notices, required in Section VIII.B, may be found.

www.wvmosquito.org.

References:

Best Management Practices for Mosquito Control in California. 2012. Available by download from the California Department of Public Health—Vector-Borne Disease Section at <http://www.westnile.ca.gov/resources.php> under the heading *Mosquito Control and Repellent Information*. Copies may be also requested by calling the California Department of Public Health—Vector-Borne Disease Section at (916) 552-9730 or the West Valley Mosquito and Vector Control District at (909) 635-0307.

California Mosquito-borne Virus Surveillance and Response Plan. 2015. [Note: this document is updated annually by CDPH]. Available by download from the California Department of Public Health—Vector-Borne Disease Section at <http://www.westnile.ca.gov/resources.php> under the heading *Response Plans and Guidelines*. Copies may be also requested by calling the California Department of Public Health—Vector-Borne Disease Section at (916) 552-9730 or the West Valley Mosquito and Vector Control District at (909) 635-0307.

MVCAC NPDES Coalition Monitoring Plan. 2011. *Pending. Information will be available from MVCAC Consultant hired to develop Plan and conduct monitoring.*

West Valley Mosquito and Vector Control District Boundary Map.

