

Santa Clara County Vector Control District (District) Pesticide Application Plan

The NPDES Permit requires a Pesticides Application Plan (PAP) that contains the following 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;**

See attached Vicinity Map of Santa Clara County where Proposed Discharge may occur.

- 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 Pg 26-29 Larval Control and Pgs 29-30, "Adult Control"

- 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;**

Please see Attachments E and F within NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. for Vector Control Applications. Products may be applied by hand, truck, backpack, hand can, helicopter, or airplane according to label directions.

- 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 effect long-term solutions to reduce or eliminate the need for continued applications as described in Best Management Practices for Mosquito Control in California, pg 26 "Source Elimination" and pg 26 and 27 "Source Reduction". The typical sources treated by this District include:

See Appendix A. Types of typical treatment areas for vector control

- 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 Best Management Practices for Mosquito Control in California, pgs 26 and 27, "Mosquito Control Practices". Specific methods used by the District include stocking mosquito fish (*Gambusia affinis*), educating residents that mosquitoes develop in standing water and encouraging them to remove sources of standing water on their property; and working with property owners to find long-term water management strategies that meet their needs while minimizing the need for public health pesticide applications.

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 taken from the District's 2010 pesticide use data as an estimate of pesticide use in 2011. Other public health pesticides in addition to those listed below may be used as part of the agency's best management practices. Please see Appendix B. Pesticides used by Santa Clara County Vector Control District during 2010. Application rates are derived from the pesticide labels.

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:

Please see the Best Management Practices for Mosquito Control in California, pg 19, "Evaluation of BMPs"

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

District's BMPs are described in the Best Management Practices for Mosquito Control in California, pgs 4-19, "Best Management Practices" and in the California Mosquito-borne Virus Surveillance and Response Plan, pg 8 "Larval Control" and pg 9 "Adult Control".

Specific elements have been highlighted below under items a-f.

a. Measures to prevent pesticide spill;

All pesticide applicators receive annual spill prevention and response training. Agency employees ensure daily that application equipment is in proper working order. Spill mitigation devices are placed in all vehicles and pesticide storage areas.

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

Application equipment is calibrated at least annually as required by the Department of Pesticide Regulations (DPR) and the terms of a cooperative agreement with the California Department of Public Health (CDPH).

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;

This will be included in our pesticide applicators annual pesticide application and safety training, continuing education programs, and/or regional NPDES Permit training programs.

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

The District calibrates truck-mounted and handheld larviciding equipment each year to meet application specifications. Supervisors routinely review application records to ensure appropriate amounts of material are being used. Ultra-low volume (ULV) application equipment is calibrated for output and droplet size to meet label requirements. Aerial larviciding equipment is calibrated by the Contractor. Aerial adulticide equipment is calibrated regularly and droplet size will be monitored by the agency to ensure droplets meet label requirements. Airplanes used in urban ULV applications and the primary airplane used for rural ULV application is equipped with advanced guidance and drift management equipment to ensure the best available technology is being used to place product in the intended 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

Please see the Best Management Practices for Mosquito Control in California, pg 26 “Larval Control” and pg 29 “Adult Control”; pgs 35-37, “Appendix B Compounds Approved for Mosquito Control in California”. for general pesticide application BMPs, and the current approved pesticide labels for application BMPs for specific products.

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

Please see the Best Management Practices for Mosquito Control in California, pg 4-19 “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;

The District staff only apply pesticides to sources of mosquitoes that represent imminent 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 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 Best Management Practices for Mosquito Control in California, pg 2, "Mosquito Biology" and the California Mosquito-borne Virus Surveillance and Response Plan pg 5 "Mosquito Infections"; pg 8-9, "Larval Control"; pg 9 "Adult Control"; pg 9-10, "Response Levels"; Table 1, "Mosquito-borne Virus Risk Assessment"; pg 14, "Characterization of Conditions and Responses".

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, pgs 4-19, "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.

This is included in the Best Management Practices for Mosquito Control in California, pg 20, "Evaluation and Efficacy of BMPs" and the California Mosquito-borne Virus Surveillance and Response Plan, pgs 4-7, "Surveillance"; pgs 9-11, "Response Levels" that the agency uses. The 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 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.

The 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 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. 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 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.

The District follows an existing IVM program which includes practices described in the California Mosquito-borne Virus Surveillance and Response Plan, pg 1, “Landowner Responsibility” and pg 40, “Governing Laws and Regulation” and Best Management Practices for Mosquito Control in California, Appendix A, “Guidelines for Adult Mosquito Surveillance”.

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 pg 40, “Governing Laws and Regulation”, 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.

References:

Best Management Practices for Mosquito Control in California. 2010. 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 Santa Clara County Vector Control District at 408-918-4770.

California Mosquito-borne Virus Surveillance and Response Plan. 2010. [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 Santa Clara County Vector Control District at 408-918-4770.

MVCAC NPDES Coalition Monitoring Plan. 2011. [In development at the time of this draft]