



AGENCY OF AGRICULTURE, FOOD & MARKETS

Public Health and Agricultural Resource Management Division

Steven Dwinell, Director

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REQUEST FOR PERMIT TO CONDUCT MOSQUITO ADULTICIDE APPLICATIONS

Pursuant to 6 V.S.A. Chapter 87 and the Vermont Rule for Control of Pesticides, a request is made for a permit to conduct mosquito adulticide applications using truck-mounted Ultra Low Volume (ULV) sprayers within the State of Vermont.

A. Applicant Information:

1. Title of Organization: Otter Creek Watershed Insect Control District (OCW)
2. Address: P.O. Box 188, Brandon, VT 05733
3. Telephone number: (802) 247-6779
4. Contact person: Jeffrey A. Schumann, OCW Board of Trustees Chair
Will Mathis, OCW Operations Coordinator
5. Towns included in area of application: Brandon
Goshen
Leicester
Pittsford
Proctor
Salisbury
6. Counties included in area of application: Addison
Rutland

B. Adulthood Materials and Methods

1. Pesticide(s) to be applied (attach labels registered in Vermont):

Product Brand Name	Active Ingredient(s)	EPA Registration Number	Application Rate (active ingredient lbs / acre)	Application Rate (formulation fl oz/minute at 10 mph).
PermaSease 4-4	Permethrin Piperonyl Butoxide	86291-3-96263	.005 .005	12.0
PermaSease 3-15	Permethrin Piperonyl Butoxide	86291-4-96263	.003 .017	12.0
Fyfanon-ULV	Malathion	279-3539	.051	3.5
Zenivex E-4 RTU	Etofenprox	2724-807	.005	12.0

See Appendices B.1. - 1 through B.1. - 4 for copies of the labels for the above listed adulthoods.

2. Application equipment to be used, method of droplet production, and target droplet spectrum (reported as Volume Mean Diameter (VMD) for applications (per pesticide to be applied):

Guardian of the Galaxy 190ES, Clark Cougar, and Curtis Dyna-Fog Maxi-Pro 4 ULV sprayers

Droplets produced by being forced through orifices at the sprayer tip

PermaSease 4-4 and PermaSease 3-15 VMD less than 30 microns ($D_v 0.5 < 30\mu$) and 90% of the spray is contained in droplets smaller than 50 microns ($D_v 0.9 < 50\mu$)

Fyfanon VMD less than 30 microns ($D_v 0.5 < 30\mu$) and 90% of the spray is contained in droplets smaller than 50 microns ($D_v 0.9 < 50\mu$)

Zenivex E-4 RTU VMD between 10-30 microns ($10\mu \leq D_v 0.5 \leq 30\mu$) and 90% of the spray is contained in droplets smaller than 50 microns ($D_v 0.9 < 50\mu$)

3. Method and frequency of calibration:

ULV sprayer calibration is verified by Azelis technicians in the spring of each year before first use. Pump output is verified by the OCW Operations Coordinator monthly throughout the spray season or if there is a change in the adulthood being used in a particular sprayer.

Note: Attach Standard Operating Procedure (SOP) if available.

4. Identify and describe your process for deciding when and where to make treatments in accordance with the Integrated Pest Management Plan applicable to this Permit.

The action thresholds for controlling adult mosquito and biting fly pests were established by the OCW Board of Trustees based on historical data and scientific studies. In 1983 W. H. Robinson and R. L. Atkins at Virginia Polytechnic Institute and State University interviewed residents seeking to define the level of mosquito activity that humans find to be a “nuisance”. Then Marco Carrieri, et. al., in a 2008 article published in the Journal of the American Mosquito Control Association, related that “nuisance” sensitivity to 39 adult females being captured in a U.S. Centers for Disease Control and Prevention (CDC) light trap per night.

OCW action thresholds are: fifteen (15) or more biting flies and/or adult mosquitoes which are known to bite humans captured in a 3-minute net sweep or forty (40) or more captured in a CDC light trap for every 24 hours that the trap is set.

5. Attach a copy of the current Vermont Company License issued per the Vermont Rule for Control of Pesticides (CVR 20-31-12).

See Appendix B.5. – 1 OCW Government License and Appendix B.5. – 2 OCW Commercial License

6. Are all applicators currently certified per Rule: Yes X No

C. Methods of Notification

1. Attach a copy of the Notice of Intent that includes:
- the name and address of the permit applicant; a reasonable identification of the affected treatment areas; the towns where the application is to be done; the approximate starting date of the application; that a permit has been requested from the Secretary; the method that the adulticide is to be applied; the common name of the product or active ingredient to be used; the name, position, address, and telephone number of a person from the applicant to contact for further information, the address and phone number of the Agency identifying it as the appropriate place to contact with comments and/or complaints;

Note: The Notice of Intent must be published no earlier than 25 days nor more than 60 days before the commencement of application; this notice must be published for one day a week for two consecutive weeks in each of two newspapers, for every town to be affected by the adulticide application. If the notice is printed in a daily newspaper, then the notice shall be published on Thursdays. If the notice is printed in a weekly newspaper, then the notice shall be published on whatever day the paper is published.

See Appendix C.1. Public Notice of Intent

2. List the newspapers in which you will advertise this application to comply with Section 6.07(e) of the Vermont Rule for Control of Pesticides.
- Addison Independent – published once weekly on Thursday
 - Rutland Herald – published five days per week
 - The Reporter – published weekly on Wednesday

3. Please indicate other notification option chosen to comply with Section 6.07(f) of the Vermont Rule for Control of Pesticides.

Annually, on or about March 15th, the OCW sends a copy of our Public Notice of Intent to all Town Clerks in the district for posting at each town office. This notice also is posted to the Front Porch Forum websites which residents in the district can access. There are individual Front Porch Forum “communities” (webpages) for Salisbury / Leicester / Goshen, Brandon, Pittsford, and Proctor. Over 80% of Vermont households have Front Porch Forum accounts. That notice also is disseminated via VT-ALERT, which reached 397 District subscribers in May 2023. Included in the Public Notice of Intent is information on how interested people can receive an email notification each day that adulticide spraying is expected to occur. Currently over 300 accounts receive those emails.

The process for subscribing to adulticide spraying email notifications and a summary of the OCW No Spray Zone (opt out) policy and procedures are included in the Public Notice of Intent. In addition, that information is included in the end of year report sent to each member town. That end of year report subsequently is published in each town’s Annual Report, which is mailed to all taxpayers in February and posted on each town’s website.

4. Identification of means for individuals to request a no-treatment area on or abutting their property.

See Appendix C.4. No Spray Zone Policy

D. Maps of proposed treatment areas

1. Attach digital or electronic map of the area of proposed application that includes:
 - a. town boundaries
 - b. surface waters
 - c. public water sources and potable water sources
 - d. threatened or endangered species locations

See Appendix D.1. Maps of Proposed Treatment Areas

E. Integrated Pest Management Plan

1. Attach an Integrated Pest Management Plan to comply with Section 6.07(g) of the Vermont Rule for Control of Pesticides (plan submission required every five years) that shall include:
 1. a general statement of policy and goals;
 2. identification of the mosquito species to be controlled, the thresholds at which adult control will be conducted, larvicide control options prior to the use of an adulticide, and an evaluation of non-chemical options;
 3. an assessment or inventory of mosquito breeding habitat and proposed mechanisms to reduce this habitat in the proposed treatment area;
 4. a public notification action plan identifying steps the permittee will take to notify the public of how the permittee plans to reduce mosquito habitat; and
 5. establishment of standards and practices for:
 - a. endangered species protection
 - b. water protection
 - c. wildlife protection, including pollinators, and
 - d. buffer establishment and maintenance

F. Recordkeeping and Reporting

1. Mosquito Surveillance

- a. Identify how you will create and maintain records of mosquito trap type, placement location, date of trap set and trap retrieval, species collected, and numbers of collected traps and trapping dates used to determine treatment locations and times.

The OCW uses net sweeps and Centers for Disease Control and Prevention (CDC) light traps to capture adult mosquitoes and biting flies. CDC light traps are set, collect pests throughout the night, then are retrieved the next day and taken to the OCW's facility for examination. When the nets (from either a CDC light trap or a net sweep) are brought to the OCW shop they are immediately frozen. The frozen contents then are dumped onto a tray, completely randomizing the contents. An OCW technician then counts the adult female mosquitos and also counts the other insects that were in the net. That done, the technician randomly selects specimens from among the adult females to identify them under a microscope as to genus and species. That random selection and identification process is continued until the defined action threshold (40 for light trap / 15 for net sweep) is reached with adult female mosquito species known to bite humans. The OCW Operations Coordinator maintains an Excel spreadsheet in which data is recorded: date of collection, location (town, specific site, latitude, and longitude) where a net sweep was done or a light trap was placed, and whether a net or trap was used. Additional spreadsheet columns are used to record the total number of mosquitoes and biting flies collected and the number of each mosquito genus and species, deer fly, or black fly identified. Finally, air temperature, humidity, ultraviolet index, air quality index, barometric pressure, wind direction, wind speed, moon phase, and general description of the prevailing weather are recorded in the spreadsheet for the time the net sweep was done or the trap was set.

- b. Identify how and at what frequency you will report mosquito surveillance records and records of treatment decisions to the Agency.

The Excel spreadsheet on which mosquito and biting fly surveillance records are kept is posted on the OCW website at <https://ocwicd.com> on the Pest Surveillance page. That spreadsheet is sent to VAAFPHARM as an email attachment every Monday.

2. Pesticide Application

- a. Identify how you will create and maintain records of areas treated, pesticides applied, and pesticide amounts applied per acre or per road mile.

The OCW has established seventeen (17) adulticide spray routes which cover the public and private roads near mosquito breeding areas along which people reside in the district. Those route maps can be viewed at <https://ocwicd.com/route-maps/>. An OCW Application Report form is filled out for each route sprayed and for every request for special service received from citizens. See Appendix F.2. OCW Application Report. The pesticide name and amount used (in gallons) is recorded on the form. OCW standard operating procedure is that spraying is done at a constant ten (10) miles per hour, therefore the amount of active ingredient (AI) applied per acre and per road mile is:

Adulticide	Pounds of AI per acre	Pounds of AI per road mile
PermaSease 4-4	.010	.376
PermaSease 3-15	.020	.751
Fyfanon ULV	.045	1.624
Zenivex E-4 RTU	.005	.169

- b. Identify how and at what frequency you will report pesticide application areas and amounts to the Agency.

All pesticide applications are reported to VAAFM PHARM weekly by way of electronic mail during the application season. Pesticide use is recorded and reported using the form provided in Appendix F.2. At the end of each calendar year the OCW provides, via an Annual Pesticide Report sent to VAAFM PHARM, the number of gallons of each adulticide used, broken down by county.

The Applicant certifies that, to the best of their knowledge, the provided information is true and accurate.

Jeff Schumann

12 January 2024

Jeffery A. Schumann
Chair, OCW Board of Trustees

Date

(NOTE: Additional sheets may be attached to include further information.)

Appendix B.1. – 1 PermaSease 4-4 Label
Appendix B.1. – 2 PermaSease 3-15 Label
Appendix B.1. – 3 Fyfanon ULV Label
Appendix B.1. – 4 Zenivex E-4 RTU Label
Appendix B.5. – 1 OCW Government License
Appendix B.5. – 2 OCW Commercial License
Appendix C.1. Public Notice of Intent
Appendix C.4. No Spray Zone Policy
Appendix D.1. Maps of Proposed Treatment Areas
Appendix F.2. OCW Application Report