

VILLAGE OF DOWNERS GROVE
Report for the Village
5/7/2019

SUBJECT:	SUBMITTED BY:
Multi-Year Contract for Mosquito Abatement Services	Nan Newlon Director of Public Works

SYNOPSIS

A motion is requested to authorize award of a three-year contract for Mosquito Abatement Services to Clarke Environmental Mosquito Management, Inc. of Saint Charles, Illinois in the amount of \$149,190.

STRATEGIC PLAN ALIGNMENT

The goals for 2017-2019 include *Steward of Financial and Environmental Sustainability* as well as *Exceptional Municipal Services*.

FISCAL IMPACT

The FY19 General Fund Budget provides \$57,000 for this service (Page 4-3, Line 18). The contract amount for FY19 is \$49,730.

RECOMMENDATION

Approval on the May 7, 2019 Consent Agenda.

BACKGROUND

This contract is for the abatement of mosquitoes in both the larval and adult insect stages throughout the Village. The contract includes pricing for three items:

- One application of a slow release mosquito larvicide (up to 180 day control) into 4180 roadside catch basins, inlets and manholes.
- One booster application in late August of a slow release mosquito larvicide (up to 30 days for late season control) into 400 catch basins, inlets and manholes, if warranted and authorized by the Village.
- Spray application of synthetic pyrethroid mosquito adulticide along up to 167 miles, up to two applications if warranted and authorized by the Village.

A Request for Proposals for Mosquito Abatement Services was issued and published March 2019 in accordance with the Village's Purchasing Policy. Proposers were asked to provide prices for three years. Only the below proposal was received:

Service Provider	Total 2019	Total 2020	Total 2021
Clarke Environmental Mosquito Management, Inc.	\$49,730.00	\$49,730.00	\$49,730.00

In the Village there are two predominant species of mosquitoes. The floodwater mosquito is the main nuisance because it is an aggressive biter; however it does not transmit diseases. The second species, the house mosquito, is known to carry West Nile Virus (WNV). Because this mosquito travels less than 1 mile from where it hatched, spraying is an effective means to control its population. The Illinois Department of Public Health and the DuPage County Health Department both monitor house mosquito numbers and test them for the presence of WNV. Both agencies inform staff if high numbers of house mosquitoes are found or if any trap tests positive for WNV within the Village. They also monitor for other diseases including the Zika virus.

Historically the Village has sprayed for mosquitos once a year if conditions are warranted. Funds are included in the proposed contract for a second spray to provide budget authority if determined to be necessary, generally as a result of weather conditions or the presence of WNV.

The contract requires the contractor to supply a hotline number for residents to inquire about spraying, or ask to be placed on a call list or no spray list, or both. If a spraying is requested by the Village, public notification in the paper and on the Village website will include this hotline number. The contractor then notifies those on the call list at least 24 hours prior to spraying, and turns off their spray equipment at each address that requests such. Historically, this list has had 70 to 100 addresses requesting notification and only a few requesting no spray.

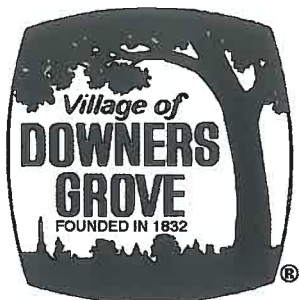
The lowest responsive and responsible proposer is Clarke Environmental Mosquito Management, Inc. of Saint Charles, Illinois. Clarke Environmental Mosquito Management, Inc. has been very active in Northern Illinois for decades and has had several contracts with the Village and adjacent municipalities. Staff is confident that their mosquito abatement work will meet Village specifications for the three year contract.

ATTACHMENTS

Contract Document

Contractor Evaluation Form FY18

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REQUEST FOR PROPOSAL

Name of Proposing Company: Clarke Environmental Mosquito Management, Inc.

Project Name: MOSQUITO ABATEMENT SERVICES
 Proposal No.: RFP-0-19-2019/DC
 Proposal Due: Friday, April 5th @ 10:00 a.m. at Public Works
 Pre-Proposal Conference: Informational Friday, March 29th @ 10:00 a.m. at Public Works
 Facility at 5101 Walnut Ave, Downers Grove, IL, 60515, (630) 434-5460

Required of All Proposers:

Deposit: No

Letter of Capability of Acquiring Performance Bond: No

Required of Awarded Contractor:

Performance Bond/Letter of Credit: No

Certificate of Insurance: Yes

Legal Advertisement Published: March 22, 2019

Date Issued: March 22, 2019

This document consists of 36 pages.

Return one (1) complete original Proposal Document and one (1) duplicate copy on CD or Flash Drive in a sealed envelope marked with the Proposal Number as noted above to:

KERSTIN G. VON DER HEIDE
 VILLAGE FORESTER
 VILLAGE OF DOWNERS GROVE PUBLIC WORKS
 5101 WALNUT AVENUE
 DOWNERS GROVE, IL 60515
 PHONE: 630/434-5475
 FAX: 630/434-5495
www.downers.us

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The VILLAGE OF DOWNERS GROVE will receive proposals Monday thru Friday, 8:00 A.M. to 5:00 P.M. at the Public Works, 5101 Walnut Avenue, Downers Grove, IL 60515.

SPECIFICATIONS MUST BE MET AT THE TIME THE PROPOSAL IS DUE.

The Village Council reserves the right to accept or reject any and all Proposals, to waive technicalities and to accept or reject any item of any Proposal.

The documents constituting component parts of this contract are the following:

- I. REQUEST FOR PROPOSALS
- II. TERMS & CONDITIONS
- III. DETAILED SPECIFICATIONS
- IV. PROPOSER'S RESPONSE TO RFP
- V. PROPOSAL/CONTRACT FORM

DO NOT DETACH ANY PORTION OF THIS DOCUMENT. INVALIDATION COULD RESULT. Proposers MUST submit one (1) complete original of the total Proposal Document and one (1) duplicate copy on CD or Flash Drive. Upon formal award of the Proposal, the successful Proposer will receive a copy of the executed contract.

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I. REQUEST FOR PROPOSALS**1. GENERAL**

- 1.1 Notice is hereby given that the Village of Downers Grove will receive sealed Proposals up to Friday, April 5th @ 10:00 a.m.
- 1.2 Proposals must be received at the Village of Downers Grove by the time and date specified. Proposals received after the specified time and date will not be accepted and will be returned unopened to the Proposer.
- 1.3 Proposal forms shall be sent to the Village of Downers Grove, ATTN: Kerstin G. von der Heide, in a sealed envelope marked "SEALED PROPOSAL". The envelope shall be marked with the name of the project, date, and time set for receipt of Proposals.
- 1.4 All Proposals must be submitted on the forms supplied by the Village and signed by a proper official of the company submitting the Proposal. Telephone, email and fax proposals will not be accepted.
- 1.5 By submitting this Proposal, the Proposer certifies under penalty of perjury that they have not acted in collusion with any other Proposer or potential Proposer.

2. PREPARATION OF PROPOSAL

- 2.1 It is the responsibility of the Proposer to carefully examine the specifications and proposal documents and to be familiar with all of the requirements, stipulations, provisions, and conditions surrounding the proposed services.
- 2.2 No oral or telephone interpretations of specifications shall be binding upon the Village. All requests for interpretations or clarifications shall be made in writing and received by the Village at least five (5) business days prior to the date set for receipt of Proposals. All changes or interpretations of the specifications shall be made by the Village in a written addendum to the Village's proposers of record.
- 2.3 In case of error in the extension of prices in the Proposal, the hourly rate or unit price will govern. In case of discrepancy in the price between the written and numerical amounts, the written amount will govern.
- 2.4 All costs incurred in the preparation, submission, and/or presentation of any Proposal including any Proposer's travel or personal expenses shall be the sole responsibility of the Proposer and will not be reimbursed by the Village.
- 2.5 The Proposer hereby affirms and states that the prices quoted herein constitute the total cost to the Village for all work involved in the respective items and that this cost also includes all insurance, bonds, royalties, transportation charges, use of all tools and equipment, superintendence, overhead expense, all profits and all other work, services and conditions

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necessarily involved in the work to be done and materials to be furnished in accordance with the requirements of the Contract Documents considered severally and collectively.

3. PRE- PROPOSAL CONFERENCE

3.1 A pre-proposal conference may be offered to provide additional information, inspection or review of current facilities or equipment, and to provide an open forum for questions from Proposers. This pre-proposal conference is not mandatory (unless stated "Required" on the cover of this document), but attendance by Proposers is strongly advised as this will be the last opportunity to ask questions concerning the Proposal.

3.2 Questions may be posed in writing to the Village (faxed and emailed questions are acceptable), but must be received by the Village prior to the scheduled time for the pre-proposal conference. Questions received will be considered at the conference. An addendum may be issued as a result of the pre-proposal conference. Such an addendum is subject to the provisions for issuance of an addendum as set forth in Section 2.2 above.

4. MODIFICATION OR WITHDRAWAL OF PROPOSALS

4.1 A Proposal that is in the possession of the Village may be altered by a letter bearing the signature or name of the person authorized for submitting a Proposal, provided that it is received prior to the time and date set for the Proposal opening. Telephone, email or verbal alterations of a Proposal will not be accepted.

4.2 A Proposal that is in the possession of the Village may be withdrawn by the Proposer, up to the time set for the Proposal opening, by a letter bearing the signature or name of the person authorized for submitting Proposals. Proposals may not be withdrawn after the Proposal opening and shall remain valid for a period of ninety (90) days from the date set for the Proposal opening, unless otherwise specified.

5. SECURITY FOR PERFORMANCE

5.1 The awarded contractor, within thirteen (13) calendar days after acceptance of the Proposer's Proposal by the Village, shall furnish security for performance acceptable to the Village when required under the documents. Such security shall be either a satisfactory performance bond (bonding company must be licensed to do business in Illinois) or a letter of credit on the form provided by the Village and available from the Village's Purchasing Manager. Any bond shall include a provision as will guarantee faithful performance of the Illinois Prevailing Wage Act, 820 ILCS 130/1 et seq. **NOTE: As evidence of capability to provide such security for performance, each Proposer shall submit with the Proposal either a letter executed by its surety company indicating the Proposer's performance bonding capability, or a letter from a bank or savings and loan within twenty-five miles of the corporate boundaries of the Village indicating its willingness and intent to provide a letter of credit for the Proposer.**

6. DELIVERY

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- 6.1 All proposal prices are to be quoted, delivered F.O.B. Village of Downers Grove, 5101 Walnut Avenue, Downers Grove, IL 60515.

7. TAX EXEMPTION

- 7.1 The Village is exempt from Illinois sales or use tax for direct purchases of materials and supplies. A copy of the Illinois Sales Tax Exemption Form will be issued upon request. The Village's federal identification will also be provided to selected vendor.

8. RESERVED RIGHTS

- 8.1 The Village reserves the exclusive right to waive sections, technicalities, irregularities and informalities and to accept or reject any and all Proposals and to disapprove of any and all subcontractors as may be in the best interest of the Village. Time and date requirements for receipt of Proposals will not be waived.

II. TERMS AND CONDITIONS

9. VILLAGE ORDINANCES

- 9.1 The successful Proposer will strictly comply with all ordinances of the Village of Downers Grove and laws of the State of Illinois.

10. USE OF VILLAGE'S NAME

- 10.1 The Proposer is specifically denied the right of using in any form or medium the name of the Village for public advertising unless express permission is granted by the Village.

11. SPECIAL HANDLING

- 11.1 Prior to delivery of any product which is caustic, corrosive, flammable or dangerous to handle, the Proposer will provide written directions as to methods of handling such products, as well as the antidote or neutralizing material required for its first aid before delivery. Proposer shall also notify the Village and provide material safety data sheets for all substances used in connection with this Contract which are defined as toxic under the Illinois Toxic Substances Disclosure to Employees Act.

12. INDEMNITY AND HOLD HARMLESS AGREEMENT

- 12.1 To the fullest extent permitted by law, the Proposer shall indemnify, keep and save harmless the Village and its agents, officers, and employees, against all injuries, deaths, losses, damages, claims, suits, liabilities, judgments, costs and expenses, which may arise directly or indirectly from any negligence or from the reckless or willful misconduct of the Proposer, its employees, or its subcontractors, and the Proposer shall at its own expense, appear, defend and pay all charges of attorneys and all costs and other expenses arising therefrom or

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incurred in connection therewith, and, if any judgment shall be rendered against the Village in any such action, the Proposer shall, at its own expense, satisfy and discharge the same. This agreement shall not be construed as requiring the Proposer to indemnify the Village for its own negligence. The Proposer shall indemnify, keep and save harmless the Village only where a loss was caused by the negligent, willful or reckless acts or omissions of the Proposer, its employees, or its subcontractors.

13. NONDISCRIMINATION

13.1 Proposer shall, as a party to a public contract:

- (a) Refrain from unlawful discrimination in employment and undertake affirmative action to assure equality of employment opportunity and eliminate the effects of past discrimination;
- (b) By submission of this Proposal, the Proposer certifies that it is an "equal opportunity employer" as defined by Section 2000(e) of Chapter 21, Title 42, U.S. Code Annotated and Executive Orders #11246 and #11375, which are incorporated herein by reference. The Equal Opportunity clause, Section 6.1 of the Rules and Regulations of the Department of Human Rights of the State of Illinois, is a material part of any contract awarded on the basis of this Proposal.

13.2 It is unlawful to discriminate on the basis of race, color, sex, national origin, ancestry, age, marital status, physical or mental handicap or unfavorable discharge for military service. Proposer shall comply with standards set forth in Title VII of the Civil Rights Act of 1964, 42 U.S.C. Secs. 2000 et seq., The Human Rights Act of the State of Illinois, 775 ILCS 5/1-101 et. seq., and The Americans With Disabilities Act, 42 U.S.C. Secs. 12101 et. seq.

14. SEXUAL HARASSMENT POLICY

14.1 The Proposer, as a party to a public contract, shall have a written sexual harassment policy that:

- 14.1.1 Notes the illegality of sexual harassment;
- 14.1.2 Sets forth the State law definition of sexual harassment;
- 14.1.3 Describes sexual harassment utilizing examples;
- 14.1.4 Describes the Proposer's internal complaint process including penalties;
- 14.1.5 Describes the legal recourse, investigative and complaint process available through the Illinois Department of Human Rights and the Human Rights Commission and how to contact these entities; and
- 14.1.6 Describes the protection against retaliation afforded under the Illinois Human Rights Act.

15. EQUAL EMPLOYMENT OPPORTUNITY

15.1 In the event of the Proposer's non-compliance with the provisions of this Equal Employment

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Opportunity Clause, the Illinois Human Rights Act or the Rules and Regulations of the Illinois Department of Human Rights ("Department"), the Proposer may be declared ineligible for future contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations, and the contract may be canceled or voided in whole or in part, and such other sanctions or penalties may be imposed or remedies invoked as provided by statute or regulation. During the performance of this Contract, the Proposer agrees as follows:

- 15.1.1 That it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, marital status, national origin or ancestry, age, physical or mental disability unrelated to ability, military status, order of protection status, sexual orientation, sexual identity or an unfavorable discharge from military service; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.
- 15.1.2 That, if it hires additional employees in order to perform this Contract or any portion thereof, it will determine the availability (in accordance with the Department's Rules and Regulations) of minorities and women in the area(s) from which it may reasonably recruit and it will hire for each job classification for which employees are hired in such a way that minorities and women are not underutilized.
- 15.1.3 That, in all solicitations or advertisements for employees placed by it or on its behalf, it will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, marital status, national origin or ancestry, age, physical or mental disability unrelated to ability, military status, order of protection status, sexual orientation, or an unfavorable discharge from military services.
- 15.1.4 That it will send to each labor organization or representative of workers with which it has or is bound by a collective bargaining or other agreement or understanding, a notice advising such labor organization or representative of the Proposer's obligations under the Illinois Human Rights Act and the Department's Rules and Regulations. If any such labor organization or representative fails or refuses to cooperate with the Proposer in its efforts to comply with such Act and Rules and Regulations, the Proposer will promptly so notify the Department and the contracting agency and will recruit employees from other sources when necessary to fulfill its obligations thereunder.
- 15.1.5 That it will submit reports as required by the Department's Rules and Regulations, furnish all relevant information as may from time to time be requested by the Department or the contracting agency, and in all respects comply with the Illinois Human Rights Act and the Department's Rules and Regulations.
- 15.1.6 That it will permit access to all relevant books, records, accounts and work sites by personnel of the contracting agency and the Department for purpose of investigation

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to ascertain compliance with the Illinois Human Rights Act and the Department's Rules and Regulations.

15.1.7 That it will include verbatim or by reference the provisions of this clause in every subcontract it awards under which any portion of the contract obligations are undertaken or assumed, so that such provisions will be binding upon such subcontractor. In the same manner as with other provisions of this Contract, the Proposer will be liable for compliance with applicable provisions of this clause by such subcontractors; and further it will promptly notify the contracting agency and the Department in the event any subcontractor fails or refuses to comply therewith. In addition, the Proposer will not utilize any subcontractor declared by the Illinois Human Rights Commission to be ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations.

16. DRUG FREE WORK PLACE

Proposer, as a party to a public contract, certifies and agrees that it will provide a drug free workplace by:

- 16.1 Publishing a statement: (1) Notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance, including cannabis, is prohibited in the Village's or Proposer's workplace. (2) Specifying the actions that will be taken against employees for violations of such prohibition. (3) Notifying the employee that, as a condition of employment on such contract or grant, the employee will: (A) abide by the terms of the statement; and (B) notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.
- 16.2 Establishing a drug free awareness program to inform employees about: (1) the dangers of drug abuse in the workplace; (2) the Village's or Proposer's policy of maintaining a drug free workplace; (3) any available drug counseling, rehabilitation and employee assistance programs; (4) the penalties that may be imposed upon employees for drug violations.
- 16.3 Providing a copy of the statement required above to each employee engaged in the performance of the contract or grant and to post the statement in a prominent place in the workplace.
- 16.4 Notifying the contracting or granting agency within ten (10) days after receiving notice of any criminal drug statute conviction for a violation occurring in the workplace from an employee or otherwise receiving actual notice of such conviction.
- 16.5 Imposing a sanction on, or requiring the satisfactory participation in a drug abuse assistance or rehabilitation program by, any employee who is so convicted as required by section 5 of the Drug Free Workplace Act.
- 16.6 Assisting employees in selecting a course of action in the event drug counseling, treatment and rehabilitation is required and indicating that a trained referral team is in place.

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16.7 Making a good faith effort to continue to maintain a drug free workplace through implementation of the Drug Free Workplace Act.

17. SUBSTANCE ABUSE PREVENTION ON PUBLIC WORKS PROJECTS ACT

17.1 In the event this is a public works project as defined under the Prevailing Wage Act, 820 ILCS 130/2, Proposer agrees to comply with the Substance Abuse Prevention on Public Works Projects Act, 820 ILCS 265/1 *et seq.*, and further agrees that all of its subcontractors shall comply with such Act. As required by the Act, Proposer agrees that it will file with the Village prior to commencing work its written substance abuse prevention program and/or that of its subcontractor(s) which meet or exceed the requirements of the Act.

18. PREVAILING WAGE ACT

18.1 This contract is not being performed in conjunction with a public works construction or demolition project and is not subject to the Prevailing Wage Act.

19. PATRIOT ACT COMPLIANCE

19.1 The Proposer represents and warrants to the Village that neither it nor any of its principals, shareholders, members, partners, or affiliates, as applicable, is a person or entity named as a Specially Designated National and Blocked Person (as defined in Presidential Executive Order 13224) and that it is not acting, directly or indirectly, for or on behalf of a Specially Designated National and Blocked Person. The Proposer further represents and warrants to the Village that the Proposer and its principals, shareholders, members, partners, or affiliates, as applicable are not, directly or indirectly, engaged in, and are not facilitating, the transactions contemplated by this Contract on behalf of any person or entity named as a Specially Designated National and Blocked Person. The Proposer hereby agrees to defend, indemnify and hold harmless the Village, and its elected or appointed officers, employees, agents, representatives, engineers and attorneys, from and against any and all claims, damages, losses, risks, liabilities and expenses (including reasonable attorney's fees and costs) arising from or related to any breach of the foregoing representations and warranties.

20. INSURANCE REQUIREMENTS

20.1 Prior to starting the work, Contractor and any Subcontractors shall procure, maintain and pay for such insurance as will protect against claims for bodily injury or death, or for damage to property, including loss of use, which may arise out of operations by the Contractor or Subcontractor or any Sub-Sub Contractor or by anyone employed by any of them, or by anyone for whose acts any of them may be liable. Such insurance shall not be less than the greater of coverages and limits of liability specified below or any coverages and limits of liability specified in the Contract Documents or coverages and limits required by law unless otherwise agreed to by the Village.

Workers Compensation	\$500,000	Statutory
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Employers Liability	\$1,000,000	Each Accident
	\$1,000,000	Disease Policy Limit
	\$1,000,000	Disease Each Employee
Comprehensive General Liability	\$2,000,000	Each Occurrence
	\$2,000,000	Aggregate
		<i>(Applicable on a Per Project Basis)</i>
Commercial Automobile Liability	\$1,000,000	Each Accident
Professional Errors & Omissions	\$2,000,000	Each Claim
(pursuant to section 20.9 below)	\$2,000,000	Annual Aggregate
Umbrella Liability (pursuant to section 20.5 below)	\$ 5,000,000	

- 20.2 Commercial General Liability Insurance required under this paragraph shall be written on an occurrence form and shall include coverage for Products/Completed Operations, Personal Injury with Employment Exclusion (if any) deleted, Blanket XCU and Blanket Contractual Liability insurance applicable to defense and indemnity obligations and other contractual indemnity assumed under the Contract Documents. The limit must be on a "Per Project Basis".
- 20.3 Comprehensive Automobile Liability Insurance required under this paragraph shall include coverage for all owned, hired and non-owned automobiles.
- 20.4 Workers Compensation coverage shall include a waiver of subrogation against the Village.
- 20.5 Comprehensive General Liability, Employers Liability and Commercial Automobile Liability Insurance may be arranged under single policies for full minimum limits required, ~~or~~ by a combination of underlying policies with the balance provided by Umbrella and/or Excess Liability policies.
- 20.6 Contractor and all Subcontractors shall have their respective Comprehensive General Liability (including products/completed operations coverage), Employers Liability, Commercial Automobile Liability, and Umbrella/Excess Liability policies endorsed to add the "Village of Downers Grove, its officers, officials, employees and volunteers" as "additional insureds" with respect to liability arising out of operations performed; claims for bodily injury or death brought against the Village by any Contractor or Subcontractor employees, or the employees of Subcontractor's subcontractors of any tier, however caused, related to the performance of operations under the Contract Documents. Such insurance

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afforded to the Village shall be endorsed to provide that the insurance provided under each policy shall be *Primary and Non-Contributory*.

- 20.7 Contractor and all Subcontractors shall maintain in effect all insurance coverages required by the Contract Documents at their sole expense and with insurance carriers licensed to do business in the State of Illinois and having a current A. M. Best rating of no less than A-VIII. In the event that the Contractor or any Subcontractor fails to procure or maintain any insurance required by the Contract Documents, the Village may, at its option, purchase such coverage and deduct the cost thereof from any monies due to the Contractor or Subcontractor, or withhold funds in an amount sufficient to protect the Village, or terminate this Contract pursuant to its terms.
- 20.8 All insurance policies shall contain a provision that coverages and limits afforded hereunder shall not be canceled, materially changed, non-renewed or restrictive modifications added, without thirty (30) days prior written notice to the Village. Renewal certificates shall be provided to the Village not less than five (5) days prior to the expiration date of any of the required policies. All Certificates of Insurance shall be in a form acceptable to Village and shall provide satisfactory evidence of compliance with all insurance requirements. The Village shall not be obligated to review such certificates or other evidence of insurance, or to advise Contractor or Subcontractor of any deficiencies in such documents, and receipt thereof shall not relieve the Contractor or Subcontractor from, nor be deemed a waiver of the right to enforce the terms of the obligations hereunder. The Village shall have the right to examine any policy required and evidenced on the Certificate of Insurance.
- 20.9 Only in the event that the Work under the Contract Documents includes design, consultation, or any other professional services, Contractor or the Subcontractor shall procure, maintain, and pay for Professional Errors and Omissions insurance with limits of not less than \$2,000,000 per claim and \$2,000,000 annual aggregate. If such insurance is written on a claim made basis, the retrospective date shall be prior to the start of the Work under the Contract Documents. Contractor and all Subcontractors agree to maintain such coverage for three (3) years after final acceptance of the Project by the Village or such longer period as the Contract Documents may require. Renewal policies during this period shall maintain the same retroactive date.
- 20.10 Any deductibles or self-insured retentions shall be the sole responsibility of the Insured. At the option of the Village, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the Village, its officers, officials, employees and volunteers; or the Proposer shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

21. COPYRIGHT/PATENT INFRINGEMENT

- 21.1 The Proposer agrees to indemnify, defend, and hold harmless the Village against any suit, claim, or proceeding brought against the Village for alleged use of any equipment, systems, or services provided by the Proposer that constitutes a misuse of any proprietary or trade secret information or an infringement of any patent or copyright.

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22. COMPLIANCE WITH OSHA STANDARDS

- 22.1 Equipment supplied to the Village must comply with all requirements and standards as specified by the Occupational Safety and Health Act. All guards and protectors as well as appropriate markings will be in place before delivery. Items not meeting any OSHA specifications will be refused.

23. CERCLA INDEMNIFICATION

- 23.1 In the event this is a contract that has environment aspects, the Proposer shall, to the maximum extent permitted by law, indemnify, defend, and hold harmless the Village, its officers, employees, agents, and attorneys from and against any and all liability, including without limitation, costs of response, removal, remediation, investigation, property damage, personal injury, damage to natural resources, health assessments, health settlements, attorneys' fees, and other related transaction costs arising under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, 42 U.S.C.A. Sec. 9601, et seq., as amended, and all other applicable statutes, regulations, ordinances, and under common law for any release or threatened release of the waste material collected by the Proposer, both before and after its disposal.

24. BUY AMERICA

- 24.1 This contract is not being financed by Federal funds and a Buy America Certificate is not applicable.

25. CAMPAIGN DISCLOSURE

- 25.1 Any contractor, proposer, bidder or vendor who responds by submitting a bid or proposal to the Village of Downers Grove shall be required to submit with its submission, an executed Campaign Disclosure Certificate, attached hereto.
- 25.2 The Campaign Disclosure Certificate is required pursuant to the Village of Downers Grove Council Policy on Ethical Standards and is applicable to those campaign contributions made to any member of the Village Council.
- 25.3 Said Campaign Disclosure Certificate requires any individual or entity bidding to disclose campaign contributions, as defined in Section 9-1.4 of the Election Code (10 ILCS 5/9-1.4), made to current members of the Village Council within the five (5) year period preceding the date of the bid or proposal release.
- 25.4 By signing the bid or proposal documents, contractor/proposer/bidder/vendor agrees to refrain from making any campaign contributions as defined in Section 9-1.4 of the Election Code (10 ILCS 5/9-1.4) to any Village Council member and any challengers seeking to serve as a member of the Downers Grove Village Council.

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26. SUBLETTING OF CONTRACT

- 26.1 No contract awarded by the Village shall be assigned or any part subcontracted without the written consent of the Village Manager. In no case shall such consent relieve the Contractor from their obligation or change the terms of the contract.

All approved subcontracts shall contain language which incorporates the terms and conditions of this Contract.

27. TERM OF CONTRACT

- 27.1 The term of this Contract will be for three (3) years unless terminated sooner in accordance with Section 28.

28. TERMINATION OF CONTRACT

- 28.1 The Village reserves the right to terminate the whole or any part of this Contract, upon written notice to the Contractor, for any reason and/or in the event that sufficient funds to complete the Contract are not appropriated by the Village.

- 28.2 The Village further reserves the right to terminate the whole or any part of this Contract, upon written notice to the Contractor, in the event of default by the Contractor. Default is defined as failure of the Contractor to perform any of the provisions of this Contract or failure to make sufficient progress so as to endanger performance of this Contract in accordance with its terms. In the event that the Contractor fails to cure the default upon notice, and the Village declares default and termination, the Village may procure, upon such terms and in such manner as the Village may deem appropriate, supplies or services similar to those so terminated. The Contractor shall be liable for any excess costs for such similar supplies or services unless acceptable evidence is submitted to the Village that failure to perform the Contract was due to causes beyond the control and without the fault or negligence of the Contractor. Any such excess costs incurred by the Village may be set-off against any monies due and owing by the Village to the Contractor.

29. BILLING & PAYMENT PROCEDURES

- 29.1 Payment will be made upon receipt of an invoice referencing Village purchase order number. Once an invoice and receipt of materials or service have been verified, the invoice will be processed for payment in accordance with the Village payment schedule. The Village will comply with the Local Government Prompt Payment Act, 50 ILCS 505/1 et seq., in that any bill approved for payment must be paid or the payment issued to the Proposer within 60 days of receipt of a proper bill or invoice. If payment is not issued to the Proposer within this 60 day period, an interest penalty of 1.0% of any amount approved and unpaid shall be added for each month or fraction thereof after the end of this 60 day period, until final payment is made.
- 29.2 The Village shall review in a timely manner each bill or invoice after its receipt. If the Village determines that the bill or invoice contains a defect making it unable to process the

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payment request, the Village shall notify the Contractor requesting payment as soon as possible after discovering the defect pursuant to rules promulgated under 50 ILCS 505/1 et seq. The notice shall identify the defect and any additional information necessary to correct the defect.

- 29.3 Please send all invoices to the attention of Kerstin G. von der Heide, Village of Downers Grove, 5101 Walnut Avenue, Downers Grove, IL 60515.

30. RELATIONSHIP BETWEEN THE PROPOSER AND THE VILLAGE

- 30.1 The relationship between the Village and the Proposer is that of a buyer and seller of professional services and it is understood that the parties have not entered into any joint venture or partnership with the other.

31. STANDARD OF CARE

- 31.1. Services performed by Proposer under this Contract will be conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. No other representations express or implied, and no warranty or guarantee is included or intended in this Contract, or in any report, opinions, and documents or otherwise.
- 31.2 If the Proposer fails to meet the foregoing standard, Proposer will perform at its own cost, and without reimbursement from the Village, the professional services necessary to correct errors and omissions caused by Proposer's failure to comply with the above standard and reported to Proposer within one (1) year from the completion of Proposer's services for the Project.
- 31.3 For Professional Service Agreements (i.e. Engineer, Consultant): Project site visits by Proposer during construction or equipment installation or the furnishing of Project representatives shall not make Proposer responsible for: (i) constructions means, methods, techniques, sequences or procedures; (ii) for construction safety precautions or programs; or (iii) for any construction contactor(s') failure to perform its work in accordance with contract documents.

32. GOVERNING LAW

- 32.1 This Contract will be governed by and construed in accordance with the laws of the State of Illinois without regard for the conflict of laws provisions. Venue is proper only in the County of DuPage and the Northern District of Illinois.

33. SUCCESSORS AND ASSIGNS

- 33.1 The terms of this Contract will be binding upon and inure to the benefit of the parties and their respective successors and assigns; provided, however, that neither party will assign this Contract in whole or in part without the prior written approval of the other. The Proposer

Village of Downers Grove

will provide a list of key staff, titles, responsibilities, and contact information to include all expected subcontractors.

34. WAIVER OF CONTRACT BREACH

34.1 The waiver by one party of any breach of this Contract or the failure of one party to enforce at any time, or for any period of time, any of the provisions hereof will be limited to the particular instance and will not operate or be deemed to waive any future breaches of this Contract and will not be construed to be a waiver of any provision except for the particular instance.

35. AMENDMENT

35.1 This Contract will not be subject to amendment unless made in writing and signed by all parties.

36. NOT TO EXCEED CONTRACT

36.1 The contract price is a "not-to-exceed" cost. At any time additional work is necessary or requested, and the not-to-exceed price is increased thereby, any change, addition or price increase must be agreed to in writing by all parties who have executed the initial contract.

36.2 Change orders for public works projects which authorize an increase in the contract price that is 50% or more of the original contract price or that authorize or necessitate any increase in the price of a subcontract under the contract that is 50% or more of the original subcontract price must be resubmitted for bidding in the same manner by which the original contract was bid. (50 ILCS 525/1)

37. SEVERABILITY OF INVALID PROVISIONS

37.1 If any provisions of this Contract are held to contravene or be invalid under the laws of any state, country or jurisdiction, contravention will not invalidate the entire Contract, but it will be construed as if not containing the invalid provision and the rights or obligations of the parties will be construed and enforced accordingly.

38. NOTICE

38.1 Any notice will be in writing and will be deemed to be effectively served when deposited in the mail with sufficient first class postage affixed, and addressed to the party at the party's place of business. Notices shall be addressed to the Village as follows:

**Village Manager
Village of Downers Grove
801 Burlington Ave.
Downers Grove, IL 60515**

Village of Downers Grove

And to the Proposer as designated in the Contract Form.

39. COOPERATION WITH FOIA COMPLIANCE

- 39.1 Contractor acknowledges that the Freedom of Information Act may apply to public records in possession of the Contractor or a subcontractor. Contractor and all of its subcontractors shall cooperate with the Village in its efforts to comply with the Freedom of Information Act. 5 ILCS 140/1 et.seq.

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III. DETAIL SPECIFICATIONS**A. Competitive Sealed Proposal**

The Village of Downers Grove, an Illinois municipal corporation (hereinafter referred to as the "Village"), will receive sealed proposals from Contractors for mosquito abatement services identified in the solicitation. Proposals must be received by the date and time specified.

B. Informational Pre-proposal Conference

For the purpose of familiarizing proposers with the project, answering questions, and issuing addenda as needed for clarification of the proposal documents, an informational pre-proposal conference shall be held at the Downers Grove Public Works, 5101 Walnut Avenue, Downers Grove, Illinois 60515, (630) 434-5460. Attendance is not required. Date and time of the meeting are listed on the cover sheet.

C. Objective

This contract is for mosquito abatement services within the incorporated limits of Downers Grove. The specifications contained herein detail how abatement activities shall occur.

D. Qualifications of Contractors

The Contractor shall be required before the award of any contract to show to the complete satisfaction of the Village Forester that it has the necessary facilities, ability, and resources to provide the services specified herein in a satisfactory manner. The Contractor shall be required to give past history and references in order to satisfy the Village Forester in regard to the Contractor's qualifications. The Village Forester shall make reasonable investigations deemed necessary and proper to determine the ability of the Contractor to perform the work. The Village Forester reserves the right to reject any proposal if the evidence submitted by, or investigation of, the Contractor fails to satisfy the Village Forester that the Contractor is properly qualified to carry out the obligations of the contract and to complete the work described herein. In addition to those requirements set forth in Terms and Conditions above, evaluation of the Contractor's qualifications shall include:

1. The ability, capacity, skill, and resources to perform the work or provide the service required
2. The ability of the Contractor to perform the work or provide the service promptly or within the time specified, without delay or interference
3. The character, integrity, reputation, judgement, experience, and efficiency of the Contractor
4. The quality of performance of previous mosquito abatement contracts or services. The Contractor shall have been actively engaged in the mosquito pest management industry for a period of at least three (3) years. The Contractor shall list at least four (4) municipal or other governmental references who can attest to the Contractor's previous satisfactory performance with similar contracts for mosquito abatement
5. The previous or existing compliance by the Contractor with laws and ordinances relating to the contract or service
6. The sufficiency of the financial resources and the ability of the Contractor to perform the contract or provide the service

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7. The quality, availability and adaptability of the supplies, or contractual services to the particular use required
8. The number and scope of conditions attached to the proposal.

E. Proposer Investigations

Before submitting a proposal, each Contractor shall make all investigations and examinations necessary to ascertain all site conditions and requirements affecting the full performance of the contract and to verify any representations made by the Village Forester upon which the Contractor will rely. If the Contractor receives an award as a result of its proposal submission, failure to have made such investigations and examinations will in no way relieve the Contractor from its obligations to comply in every detail with all provisions and requirements of the contract documents, nor will a plea of ignorance of such conditions and requirements be accepted as a basis for any claim whatsoever by the Contractor for additional compensation.

F. Quantities

Whenever a proposal is sought for services, the quantities shall be construed as estimates for the purpose of obtaining unit prices unless otherwise stated. The Village reserves the right to increase or decrease the stated quantities.

G. Proposal Review and Award of Contract

The Village shall review and evaluate all proposals submitted in response to this RFP. This includes reviewing each proposal for compliance with the minimum proposal requirements of the RFP. Failure to comply with any mandatory requirements may disqualify a proposal.

Proposals will then be evaluated and rated in accordance with the evaluation criteria. These evaluation criteria include:

- Conformance to Requirements. Degree to which proposal meets technical needs of the Village. Exceptions will detract from overall rating.
- Clarity of Proposal. Degree to which proposal clearly and concisely follows the Request for Proposal. Answers must include and correspond to questions.
- Service. How the Contractor proposes to deliver service.
- References. Discussions with the Proposer's existing and any former clients.
- Costs. The total cost of abatement services for each year and the sum total cost for all 3 years.

The Village reserves the right to conduct pre-award discussions and/or pre-contract negotiations with any or all responsive and responsible Contractors who submit proposals determined to be reasonably acceptable of being selected for award. Contractors shall be accorded fair and equal treatment with respect to any opportunity for discussion and revision of proposals and such revisions may be permitted after submission of proposals and prior to award of a contract.

The Village may conduct negotiations with the top Contractor(s) if required to determine the acceptability of the proposal in regards to specifications, terms and conditions and cost; therefore, the proposal(s) submitted should contain the vendor's most favorable terms and

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conditions as well as cost with detailed specifications as proposed, since the selection and award may be made without discussion.

The Village will select the highest rated, fully qualified and best suited Contractor for mosquito abatement services. Should the first selected Contractor be unable to fulfill the terms of the contract, the Village reserves the right to enter into a contract with the 2nd selected Contractor. If the Village does not find that any Contractor's solution(s) meet the needs and requirements, the Village is not obligated to enter into any agreement.

H. Term of Contract

The In accordance with terms mentioned in Section 27.1 above, the contract term shall be three (3) complete calendar years starting from date of award (approximately May 1 of 2019) and ending December 31 of 2021.

I. Surveillance and Monitoring of Mosquito Populations

The Contractor shall coordinate with the Village Forester on a weekly basis as to the status of mosquito populations in the area. This includes but is not limited to the House Mosquito (*Culex pipens*) and the Floodwater Mosquito (*Aedes vexans*). Both parties shall convey observed or reported mosquito problems, including data from State of Illinois and DuPage County Health Department traps. If the Contractor has mosquito abatement contracts in other adjacent communities, the Contractor shall report if and when these communities are observing high levels of mosquito populations (including but not limited to both House and Floodwater mosquitos) and if and when a spraying is scheduled.

J. Larval Control

The Contractor shall perform one (1) application of up to 4180 roadside catch basins, inlets and manholes by bicycle using the extended residual slow release mosquito larvicide Natular™XRT for up to 180 day control. The Village Forester shall approve any and all alternative products proposed.

Subject to need and as authorized by the Village Forester, the Contractor shall perform one (1) booster application in late August of up to 400 catch basins, inlets and manholes by bicycle using the extended residual slow release mosquito larvicide Natular™T30 for up to 30 days for late season control. The Village Forester shall approve any and all alternative products proposed.

Both applications shall be performed via bicycle to reduce the Village's carbon footprint. GIS data for both applications showing the number and location of treated basins must be available for review after each application.

K. Adult Control

As authorized by the Village of Downers Grove, the Contractor shall furnish sufficient equipment, equipment operators and material to conduct ground ultra low volume (ULV) applications of synthetic pyrethroid mosquito adulticide Duet along up to 167 miles of improved or semi-improved streets within the incorporated Village limits. The ULV application shall be performed with truck mounted equipment with flow controls to guarantee

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95% accuracy in chemical output. Equipment shall be properly calibrated such that the chemical flow rate is consistent with the Illinois Environmental Protection Agency's labeled maximum for truck specifications. Applications shall be made between sunset on the day the Village requests treatment and sunrise on the following day. In the event weather conditions change during the application period which reduces the effectiveness of the ULV application, the Contractor shall terminate the application and shall complete the application at a time when weather conditions are favorable for a ULV application as approved by the Village. The Village Forester shall approve any and all alternative products proposed.

L. Trade Name

In cases where an item is identified by a manufacturers name, trade name, catalog number, or reference, it is understood that the Contractor proposes to furnish the item so identified and does not propose to furnish an "equal" unless the proposed "equal" is definitely indicated therein by the Contractor. Reference to a specific manufacturer, trade name or catalog is intended to be descriptive but not restrictive and only to indicate to the prospective Contractor articles that will be satisfactory. The Village Forester reserves the right to approve as an equal, or to reject as not being an equal, any article the Contractor proposes to furnish which contains major or minor variations from specification requirements but which may comply substantially therewith. If alternate product other than the product listed is proposed the Contractor must submit the alternate with their proposal.

M. Material Specifications

The Contractor shall supply the Village Forester with the most current Label and Safety Data Sheet (SDS) available for the proposed products. The Contractor is responsible for following the Label and SDS requirements for protective equipment and safe chemical handling. The Contractor must meet OSHA and any other federal, state and local safety requirements. The Contractor will be held responsible for any damage to personnel, Village facilities, chemicals and equipment for these specifications to ensure product safety. The Contractor must ensure that all necessary protective equipment is considered incidental to the contract.

N. Proof of Purchase

Prior to starting the project, the Contractor shall be required to show proof of purchase of specified products.

O. Expiration Dates of Product/ Supplies

Any required product and/or supplies that have expiration dates must have at least nine (9) months of shelf life before the expiration date. Failure to comply with this requirement may result in rejection of any product and/or supplies to be used. If the product is rejected, the Contractor shall be responsible for replacement within forty eight (48) hours at no additional cost to the Village.

P. Spills

The Contractor is solely responsible for any and all spills or leaks prior to and during unloading or transporting of their product. The Contractor hereby agrees to reasonably evacuate and warn those persons that may be affected by the spill and must clean up such spills or leaks to the satisfaction of the Village and in a manner that complies with applicable federal,

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state and local laws and regulations. The Contractor is responsible for any costs associated with spill clean-ups.

Q. Clean Up

The Contractor shall, during the progress of the work, remove and dispose of all materials and product containers. The Contractor shall remove all materials, tools, vehicles and equipment from the Village after a spraying application has been completed. The Contractor shall not store any materials, tools, vehicles or equipment on Village facilities.

R. Unauthorized Product Application

The Contractor must not apply any unauthorized product materials or make unscheduled applications. If the Contractor does apply unauthorized product materials, or make unscheduled applications, the Contractor is responsible for all damages and replacement and/or clean-up of all damaged areas, plants, flowers, etc. caused by such unauthorized application or unscheduled application.

S. Treatment Area Maps

A map of incorporated Downers Grove shall be distributed at the informational pre-proposal meeting. Various Village maps can be found at the Village's website at <http://www.downers.us>. Before any planned application and treatments, the Contractor and Village Forester shall review routes, streets and catch basin locations.

T. Illinois Department of Agriculture Pesticide License and Regulations

The Contractor shall supply proof that all equipment operators have the appropriate State of Illinois Department of Agriculture Pesticide licenses and that they are properly trained to apply the insecticide treatment. The Contractor must possess valid Illinois Pesticide Applicators licenses and be authorized to purchase the items needed to perform mosquito control at the time the proposal is submitted. Copies of all certifications and licenses are required. The Contractor shall keep records of all pesticide applications in accordance with laws and regulations of the Illinois Pesticide Act including but not limited to the EPA registration number and either the brand name or product name of the pesticide, the date and amount applied, and the location at which the pesticide was mixed and or loaded into the application equipment.

U. National Pollutant Discharge Elimination System (NPDES) Permit and Annual Report

In accordance with the provisions of the Illinois Environmental Protection Act, the Illinois Pollution Control Board and Rules and Regulations (35 Ill. Adm. Code, Subtitle C, Chapter 1), and the Clean Water Act, the Contractor shall obtain a NPDES Permit. This includes filing an Annual Report with the Illinois Environmental Protection Agency (IEPA). The Annual Report is to include the NPDES permit number, contact information, the pesticide use pattern and target pests, and the total amount of each pesticide product applied for the reporting year by the USEPA pesticide registration number(s). A copy of the NPDES permit and Annual Report shall be supplied to the Village as proof of coverage.

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V. Response Time and Completion Timeframes

Once notified by the Village Forester of the need to apply larvicides, the Contractor shall schedule the work for early June. Once larvicide applications have begun, all applications within the Village limits shall be completed within a two (2) week timeframe unless changes are approved by the Village Forester. Subject to need, timing of booster applications shall be discussed with the Contractor.

Once notified by the Village Forester of the need for a adulticide spray application, the Contractor shall schedule the work to occur within a two week timeframe. Once spraying has begun, all spraying applications within the Village limits shall be completed within a 24-hour timeframe unless changes are approved by the Village Forester. Subject to need, if a second application is warranted, the Contractor shall schedule the work to occur within a two week timeframe. Once spraying has begun, all spraying applications within the Village limits shall be completed within a 24-hour timeframe unless changes are approved by the Village Forester.

W. Endangered Species and Pollinator Gardens

The Village contains areas of high potential zones for an endangered species (Rusty Patched Bumble Bee). The Contractor must indicate adult mosquito control treatment protocol to be followed and 3 areas where this protocol has been utilized in Illinois.

The Village areas and pollinator gardens will be identified and discussed with the awarded Contractor.

X. Hotline, Call List and No Spray List

The Contractor shall maintain a hotline number which residents may call to inquire about spraying, or ask to be placed on either a call list or no spray list, or both. The Contractor shall notify all on the call list at least 24 hours prior to scheduled spray activities. The Contractor shall honor the no spray list by turning off their spray equipment at each address that requests such.

Y. Contractor Personnel and Equipment

The Contractor shall supply all material, equipment and personnel necessary to complete the work specified. The Contractor shall rent equipment as needed to cover any equipment breakdowns that would cause this contract to not be completed in the allotted time period. All vehicles and equipment shall have the Contractor's name in a visible location.

The Contractor shall employ only competent and efficient employees. All employees and supervisors shall wear uniforms or apparel clearly displaying the company name for ease of identification. All individuals shall be familiar with the mosquito abatement specifications. The Village Forester or other Village representative shall have, throughout the life of the contract, the right of reasonable rejection and approval of staff assigned to the work by the Contractor. If the Village Forester or other Village representative rejects staff, the Contractor must provide replacement staff satisfactory to the Village Forester or other Village representative in a timely manner and at no additional cost to the Village. The day-to-day

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supervision and control of the Contractor's employees is the responsibility solely of the Contractor.

Z. Automatic Vehicle Location (AVL) and Global Positioning System (GPS)

Contractor shall provide complete AVL/GPS technology for the purpose of tracking abatement activities. The AVL/GPS system shall be accessible via the internet on a secure website available to authorized Village staff, with a login and password. The AVL/GPS system shall include and initiate broadcasting data when abatement activities are activated or to begin.

In order for the Village to monitor the efficiency of the spraying operation, the following information shall be provided by the AVL:

- **SPEED:** The speed of the vehicle during the abatement operation shall be monitored. The AVL shall be able to determine when the vehicle is performing the operation and report the vehicle speed. This speed shall be measured in one mile per hour increments. The AVL shall be able to measure speeds accurately from a minimum of 3 miles per hour to a maximum of 40 miles per hour.
- **TRACKING:** The accuracy of the vehicle's location shall be to within 50 feet or less of the actual location. The AVL shall show the following but not limited – spray on or off, and the location of a single vehicle or all the vehicles. It is preferred that the vehicle's location be displayed on street map window with user controlled sizing and placement. Data shall be submitted at a minimum, to include but not be limited to 30 second intervals to the secured website for monitoring.
- **MANAGEMENT REPORTS:** As a minimum, daily management reports on all the vehicles shall be provided by the AVL to include routes traveled, and the time of day the routes were traveled.
- **RELIABILITY:** The AVL shall maintain a 95% performance level.
- **COVERAGE:** The AVL coverage area shall include all of the Village of Downers Grove.
- **FREQUENCY:** All monitored functions shall be available upon the request of the Village's inspector/representative or his/her designee.

In order for the Village to monitor the efficiency of the larvicide applications, the following information shall be provided by the GPS technology:

- **TRACKING:** The accuracy of the GPS's location shall be to within 5 feet or less of the actual location.
- **MANAGEMENT REPORTS:** As a minimum, daily management reports on all the bicycles shall be provided to include routes traveled, and the time of day the routes were traveled.
- **COVERAGE:** The coverage area shall include all of the Village of Downers Grove.
- **FREQUENCY:** All monitored functions shall be available upon the request of the Village's inspector/representative or his/her designee.

AA. Work Crew Supervision

The Contractor shall provide qualified supervision of each crew at all times while working under this contract. Each supervisor shall be fluent in English and be authorized by the

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Contractor to accept and act upon all directives issued by the Village Forester or other Village representative.

AB. Workdays, Working Hours, and After Hours Contact

The Contractor shall schedule larvicide activities between 7:00 a.m. and 5:00 p.m., and adulticide spraying activities between the hours of 7:00 p.m. and 7:00 a.m., Monday through Friday, unless authorized by the Village Forester or other Village representative.

The Contractor shall supply a contact phone number which shall be more than just an answering machine in case an emergency situation arises which needs to be discussed.

AC. Traffic Control

The Contractor shall conduct its operations in a manner that will not interrupt pedestrian or vehicle traffic except as approved by the Village. The work area shall be confined to the smallest area possible to allow maximum use of the street or sidewalk and to minimize any hazard to traffic or pedestrians.

AD. Inspection of Work

All work shall be completed to the satisfaction of the Village Forester or Forestry representative and same shall resolve any questions as to proper procedures or quality of workmanship.

AE. Unsatisfactory Work

If, at any time during the contract, the service performed or work done by the Contractor is considered by the Village to create a condition that threatens the health, safety, or welfare of the community, the Contractor shall, on being notified by written notice, immediately correct such deficient service or work. In the event the Contractor fails, upon written notice, to correct the deficient service or work, the Village shall have the right to order correction of the deficiency by separate contract or with its own resources at the expense of the Contractor as stated in Section 28.2 above. The Village reserves the right to terminate the whole or any part of this contract in the event the awarded Contractor fails to perform any of the provisions of this contract.

AF. Costs and Basis of Payment

The Contractor affirms and states that the prices submitted herein constitute the total cost to the Village for all work involved in the respective items. This cost also includes all insurance, bonds, royalties, transportation charges, use of all tools and equipment, superintendence, overhead expense, inspection costs, all profits and all other work, services and conditions necessarily involved in the work to be done in accordance with the requirements of the Contract Documents considered severally and collectively.

The Contractor shall be paid for the work described herein on a per item basis for all of incorporated Downers Grove. The contract unit prices shall remain firm for the contract term.

The Contractor shall send all invoices to the Village Forester. The Village will pay the Contractor after receipt of a correct invoice for reasonable work allocable to the contract or

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after the date of acceptance of work that meets the contract requirements, whichever occurs later.

AG. Questions during the Proposal Process

All questions shall be directed to:

Kerstin G. von der Heide, Village Forester,
Phone (630) 434-5475 and FAX (630) 434-5495
Email: kvonderheide@downers.us

AH. Proposal Form Submission

Each proposer shall submit:

1. Proposers must submit an original and one (1) duplicate copy on CD or Flash Drive of the total Proposal
2. Completed Cover page
3. Unit Prices and Extensions
4. Phone numbers for 24 hour contact and Hotline phone number
5. A listing of the equipment operators with pesticide licenses
6. A list of equipment
7. Description of how the service is to be provided. Include previous experience and examples from other municipalities. List at least four (4) municipal or other governmental references who can attest to the Contractor's previous satisfactory performance with similar contracts for mosquito abatement. Include names, addresses and phone numbers. The Contractor must indicate adult mosquito control treatment protocol to be followed for an endangered species (Rusty Patched Bumble Bee) and 3 areas where this protocol has been utilized in Illinois.
8. Signature block completed including an after-hours phone number other than an answering machine.
9. W-9 form
10. Proposer's Certification and applicable insurance information supplied
11. Completed Suspension or Debarment Certificate
12. Completed Campaign Disclosure Certificate.

Village of Downers Grove

IV. PROPOSER'S RESPONSE TO RFP

The undersigned Contractor offers to provide to the Village of Downers Grove, an Illinois municipal corporation, mosquito abatement services at the following prices and conforming to the terms and conditions of this RFP.

A. Unit Prices and Extensions

List Unit Prices, Extensions and Totals for each year. The Village Forester shall approve any and all alternative products proposed.

May 1, 2019 to December 31, 2019.

Description	Unit Price per Catch Basin/Mile	Extension Total (Unit times # Basins/Miles)
Application larvicide Naturlar™XRT to up to 4180 catch basins	\$6.10 per basin	\$25,498.00
Application larvicide Naturlar™T30 to up to 400 catch basins	\$3.80 per basin	\$1,520.00
1 st spray adulticide Duet to entire Village up to 167 miles	\$68.00 per mile	\$11,356.00
2 nd spray adulticide Duet to entire Village up to 167 miles	\$68.00 per mile	\$11,356.00
Total for Mosquito Abatement Services		\$49,730.00

Attach all pertinent labels and SDS sheets

Village of Downers Grove

January 1, 2020 to December 31, 2020.

Description	Unit Price per Catch Basin/Mile	Extension Total (Unit times # Basins/Miles)
Application larvicide Naturlar™XRT to up to 4180 catch basins	\$6.10 per basin	\$25,498.00
Application larvicide Naturlar™T30 to up to 400 catch basins	\$3.80 per basin	\$1,520.00
1 st spray adulticide Duet to entire Village up to 167 miles	\$68.00 per mile	\$11,356.00
2 nd spray adulticide Duet to entire Village up to 167 miles	\$68.00 per mile	\$11,356.00
Total for Mosquito Abatement Services		\$49,730.00

January 1, 2021 to December 31, 2021.

Description	Unit Price per Catch Basin/Mile	Extension Total (Unit times # Basins/Miles)
Application larvicide Naturlar™XRT to up to 4180 catch basins	\$6.10 per basin	\$25,498.00
Application larvicide Naturlar™T30 to up to 400 catch basins	\$3.80 per basin	\$1,520.00
1 st spray adulticide Duet to entire Village up to 167 miles	\$68.00 per mile	\$11,356.00
2 nd spray adulticide Duet to entire Village up to 167 miles	\$68.00 per mile	\$11,356.00
Total for Mosquito Abatement Services		\$49,730.00

COMBINED Total all 3 years = \$149,190.00

Village of Downers Grove

B. Phone NumbersName and phone number of 24- hour contact Emily Galsberg847-421-9117Hotline Phone Number 800-942-2555**C. Personnel**

Attach a list of licensed equipment operators who shall be present each workday. Each operator must be able to provide proof of a valid pesticide operator's license.

D. Equipment

Attach a list of equipment

E. Description of service

Attach a description of how the mosquito abatement service shall be provided. Include previous experience and examples from other municipalities, including AVL/GPS technology.

Village of Downers Grove

Please Note: Those listed with a *
are also in Rusty Patched Bumble Bee areas

MUNICIPAL REFERENCE LIST

Municipality: Bloomington Township
 Address: 123 N. Rosedale, Bloomington, IL 60108
 Telephone # 630-529-7715
 Forestry Contact Name Micheal Hovde, Jr, Supervisor
 Year of the contract Years Served - 35+

Municipality Downers Grove Township *
Address: 4340 Prince Street, Downers Grove, IL 60515
Telephone # 630-719-6611
Forestry Contact Name Mark Thoman, Supervisor
Year of the contract Years Served - 35+

Municipality: Village of Burr Ridge *
 Address: 7660 S. County Line Road, Burr Ridge, IL 60521
 Telephone # 630-654-8181
 Forestry Contact Name Mr. David Preissig, Operations Supervisor
 Year of the contract Years Served - 35+

Municipality Village of Hinsdale *
Address: 19 E. Chicago Avenue, Hinsdale, IL 60521
Telephone # 630-789-7041
Forestry Contact Name Mr. George Peluso, Director of Public Services
Year of the contract Years Served - 30+

Municipality: West Chicago Mosquito Abatement District *
 Address: 493 Duane Street, Glen Ellyn, IL 60137
 Telephone # 630-231-3591
 Forestry Contact Name Mrs. Dona Smith, President
 Year of the contract Years Served - 25+

Municipality Village of Westmont *
Address: 31 W. Quincy Street, Westmont, IL 60559
Telephone # 630-981-6210
Forestry Contact Name Mr. Steve May, Village Manager
Year of the contract Years Served - 35+

Municipality: Wheaton Mosquito Abatement District *
 Address: P.O. Box 933, Wheaton, IL 60189
 Telephone # 630-479-0048
 Forestry Contact Name Mr. Alan Bolds
 Year of the contract Years Served - 50+

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V. PROPOSAL/CONTRACT FORM

*****THIS PROPOSAL, WHEN ACCEPTED AND SIGNED BY AN AUTHORIZED SIGNATORY OF THE VILLAGE OF DOWNERS GROVE, SHALL BECOME A CONTRACT BINDING UPON BOTH PARTIES.**

Entire Block Must Be Completed When A Submitted Proposal Is To Be Considered For Award

PROPOSER:

Clarke Environmental Mosquito Mgmt, Inc.

Company Name

Date: 4/2/2019

675 Sidwell Court

Street Address of Company

eglasberg@clarke.com

Email Address

Saint Charles, IL 60174

City, State, Zip

Emily Glasberg

Contact Name (Print)

800-323-5727

Business Phone

847-421-9117

24-Hour Telephone

630-443-3070

Fax


Signature of Officer, Partner or
Sole Proprietor

Clark E. Wood, VP Service Operations

Print Name & Title

ATTEST: If a Corporation


Signature of Corporation Secretary

VILLAGE OF DOWNERS GROVE:

Authorized Signature

Title

Date

ATTEST:

Signature of Village Clerk

Date

In compliance with the specifications, the above-signed offers and agrees, if this Proposal is accepted within 90 calendar days from the date of opening, to furnish any or all of the services upon which prices are quoted, at the price set opposite each item, delivered at the designated point within the time specified above.

Village of Downers Grove



VENDOR W-9 REQUEST FORM

The law requires that we maintain accurate taxpayer identification numbers for all individuals and partnerships to whom we make payments, because we are required to report to the I.R.S all payments of \$600 or more annually. We also follow the I.R.S. recommendation that this information be maintained for all payees including corporations.

Please complete the following substitute W-9 letter to assist us in meeting our I.R.S. reporting requirements. The information below will be used to determine whether we are required to send you a Form 1099. Please respond as soon as possible, as failure to do so will delay our payments.

BUSINESS (PLEASE PRINT OR TYPE):

NAME: Clarke Environmental Mosquito Management, Inc.

ADDRESS: 675 Sidwell Court

CITY: Saint Charles

STATE: IL

ZIP: 60174

PHONE: 800-323-570 FAX: 630-443-3070

TAX ID #(TIN): 36-2391274

(If you are supplying a social security number, please give your full name)

REMIT TO ADDRESS (IF DIFFERENT FROM ABOVE):

NAME: _____

ADDRESS: _____

CITY: _____

STATE: _____ ZIP: _____

TYPE OF ENTITY (CIRCLE ONE):

- Individual
- Sole Proprietor
- Partnership
- Medical
- Charitable/Nonprofit
- Limited Liability Company -Individual/Sole Proprietor
- Limited Liability Company-Partnership
- Limited Liability Company-Corporation
- Corporation
- Government Agency

SIGNATURE: Clarke Spord

DATE: 4/1/2019

Village of Downers Grove

PROPOSER'S CERTIFICATION (page 1 of 3)

With regard to Mosquito Abatement Services, Proposer Clarke Environmental Mosquito Management, Inc. hereby certifies
(Name of Project) (Name of Proposer)
the following:

1. Proposer is not barred from bidding this contract as a result of violations of Section 720 ILCS 5/33E-3 (Bid Rigging) or 720 ILCS 5/33E-4 (Bid-Rotating);
2. Proposer certifies that it has a written sexual harassment policy in place and is in full compliance with 775 ILCS 5/2-105(A)(4);
3. Proposer certifies that it is in full compliance with the Federal Highway Administrative Rules on Controlled Substances and Alcohol Use and Testing, 49 C. F.R. Parts 40 and 382 and that all employee drivers are currently participating in a drug and alcohol testing program pursuant to the Rules.
4. Proposer further certifies that it is not delinquent in the payment of any tax administered by the Department of Revenue, or that Proposer is contesting its liability for the tax delinquency or the amount of a tax delinquency in accordance with the procedures established by the appropriate Revenue Act. Proposer further certifies that if it owes any tax payment(s) to the Department of Revenue, Proposer has entered into an agreement with the Department of Revenue for the payment

Village of Downers Grove

PROPOSER'S CERTIFICATION (page 2 of 3)

of all such taxes that are due, and Proposer is in compliance with the agreement.

BY: Clark E. Wood
Proposer's Authorized Agent Clark E. Wood, VP Service Operations

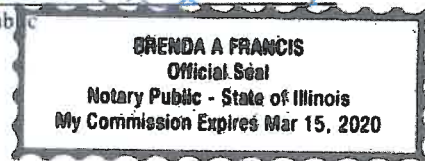
3 6 - 2 3 9 1 2 7 4

FEDERAL TAXPAYER IDENTIFICATION NUMBER

or _____
Social Security Number

Subscribed and sworn to before me
this 1st day of April, 2019.

Brenda A Francis
Notary Public



(Fill Out Applicable Paragraph Below)

(a) **Corporation**

The Proposer is a corporation organized and existing under the laws of the State of Illinois, which operates under the Legal name of Clarke Environmental Mosquito Management, Inc and the full names of its Officers are as follows:

President: J. Lyell Clarke, III

Secretary: Kevin Magro

Treasurer: Clark E. Wood

and it does have a corporate seal. (In the event that this Proposal is executed by other than the President, attach hereto a certified copy of that section of Corporate By-Laws or other authorization by the Corporation which permits the person to execute the offer for the corporation.)

(b) **Partnership**

Signatures and Addresses of All Members of Partnership:

Village of Downers Grove

PROPOSER'S CERTIFICATION (page 3 of 3)

The partnership does business under the legal name of: _____
 which name is registered with the office of _____ in the state of
 _____.

(c) Sole Proprietor

The Proposer is a Sole Proprietor whose full name is: _____
 and if operating under a trade name, said trade name is: _____
 which name is registered with the office of _____ in the state of
 _____.

5. Are you willing to comply with the Village's preceding insurance requirements within 13 days of the award of the contract? Yes _____

Insurer's Name HUB International

Agent HUB International Midwest

Street Address 1411 Opus Place, Suite 450

City, State, Zip Code Downers Grove, IL 60515

Telephone Number 630-468-5600

I/We affirm that the above certifications are true and accurate and that I/we have read and understand them.

Print Name of Company: Clarke Environmental Mosquito Management, Inc.

Print Name and Title of Authorizing Signature: Clark E. Wood, VP Service Operations

Signature: 

Date: 4/1/2019

Village of Downers Grove

Suspension or Debarment Certificate
--

Non-Federal entities are prohibited from contracting with or making sub-awards under covered transactions to parties that are suspended or debarred or whose principals are suspended or debarred. Covered transactions include procurement for goods or services equal to or in excess of \$100,000.00. Contractors receiving individual awards for \$100,000.00 or more and all sub-recipients must certify that the organization and its principals are not suspended or debarred.

By submitting this offer and signing this certificate, the Proposer certifies to the best of its knowledge and belief, that the company and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any federal, state or local governmental entity, department or agency;
2. Have not within a three-year period preceding this Proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction, or convicted of or had a civil judgment against them for a violation of Federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and
4. Have not within a three-year period preceding this application/proposal/contract had one or more public transactions (Federal, State or local) terminated for cause or default.

If the Proposer is unable to certify to any of the statements in this certification, Proposer shall attach an explanation to this certification.

Company Name: Clarke Environmental Mosquito Management, Inc.

Address: 675 Sidwell Court

City: Saint Charles, IL Zip Code: 60174

Telephone: (800) 323-5727 Fax Number: (630) 443-3070

E-mail Address: eqlasberg@clarke.com

Authorized Company Signature: 

Print Signature Name: Clark Wood Title of Official: VP Service Operations

Date: 4/1/2019

Village of Downers Grove

CAMPAIGN DISCLOSURE CERTIFICATE

Any contractor, proposer, bidder or vendor who responds by submitting a bid or proposal to the Village of Downers Grove shall be required to submit with its submission, an executed Campaign Disclosure Certificate.

The Campaign Disclosure Certificate is required pursuant to the Village of Downers Grove Council Policy on Ethical Standards and is applicable to those campaign contributions made to any member of the Village Council.

Said Campaign Disclosure Certificate requires any individual or entity bidding to disclose campaign contributions, as defined in Section 9-1.4 of the Election Code (10 ILCS 5/9-1.4), made to current members of the Village Council within the five (5) year period preceding the date of the bid or proposal release.

By signing the bid or proposal documents, contractor/proposer/bidder/vendor agrees to refrain from making any campaign contributions as defined in Section 9-1.4 of the Election Code (10 ILCS 5/9-1.4) to any Village Council member and any challengers seeking to serve as a member of the Downers Grove Village Council.

Under penalty of perjury, I declare:

Bidder/vendor has not contributed to any elected Village position within the last five (5) years.


Signature Clark Wood
Print Name

Bidder/vendor has contributed a campaign contribution to a current member of the Village Council within the last five (5) years.

Print the following information:

Name of Contributor: _____
(company or individual)

To whom contribution was made: _____

Year contribution made: _____ Amount: \$ _____

Signature Print Name



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
4/2/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER HUB International Midwest Limited 55 East Jackson Boulevard Chicago IL 60604	CONTACT NAME: CSU Chicago PHONE (A/C, No, Ext): 312-922-5000 FAX (A/C, No): E-MAIL ADDRESS: CSUChicago@hubinternational.com <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 80%;">INSURER(S) AFFORDING COVERAGE</th> <th style="width: 20%;">NAIC #</th> </tr> <tr> <td>INSURER A : Lexington Insurance Company</td> <td style="text-align: right;">19437</td> </tr> <tr> <td>INSURER B : Commerce & Industry Insurance Company</td> <td style="text-align: right;">19410</td> </tr> <tr> <td>INSURER C : National Union Fire Insurance Company of Pittsburg</td> <td style="text-align: right;">19445</td> </tr> <tr> <td>INSURER D : Federal Insurance Company</td> <td style="text-align: right;">20281</td> </tr> <tr> <td>INSURER E :</td> <td></td> </tr> <tr> <td>INSURER F :</td> <td></td> </tr> </table>	INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A : Lexington Insurance Company	19437	INSURER B : Commerce & Industry Insurance Company	19410	INSURER C : National Union Fire Insurance Company of Pittsburg	19445	INSURER D : Federal Insurance Company	20281	INSURER E :		INSURER F :	
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INSURED Clarke Environmental Mosquito Management, Inc. 675 Sidwell Court St Charles, IL 60174															

COVERAGES CERTIFICATE NUMBER: 1427449806 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD	WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS														
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Pollution Legal <input type="checkbox"/> Liability GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:			EG1950828	11/1/2018	11/1/2019	<table border="0" style="width: 100%;"> <tr> <td>EACH OCCURRENCE</td> <td style="text-align: right;">\$ 1,000,000</td> </tr> <tr> <td>DAMAGE TO RENTED PREMISES (Ea occurrence)</td> <td style="text-align: right;">\$ 300,000</td> </tr> <tr> <td>MED EXP (Any one person)</td> <td style="text-align: right;">\$ 25,000</td> </tr> <tr> <td>PERSONAL & ADV INJURY</td> <td style="text-align: right;">\$ 1,000,000</td> </tr> <tr> <td>GENERAL AGGREGATE</td> <td style="text-align: right;">\$ 2,000,000</td> </tr> <tr> <td>PRODUCTS - COMP/OP AGG</td> <td style="text-align: right;">\$ 2,000,000</td> </tr> <tr> <td>Pollution Legal Liab</td> <td style="text-align: right;">\$ 1,000,000</td> </tr> </table>	EACH OCCURRENCE	\$ 1,000,000	DAMAGE TO RENTED PREMISES (Ea occurrence)	\$ 300,000	MED EXP (Any one person)	\$ 25,000	PERSONAL & ADV INJURY	\$ 1,000,000	GENERAL AGGREGATE	\$ 2,000,000	PRODUCTS - COMP/OP AGG	\$ 2,000,000	Pollution Legal Liab	\$ 1,000,000
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B	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY			CA6530642	11/1/2018	11/1/2019	<table border="0" style="width: 100%;"> <tr> <td>COMBINED SINGLE LIMIT (Ea accident)</td> <td style="text-align: right;">\$ 1,000,000</td> </tr> <tr> <td>BODILY INJURY (Per person)</td> <td style="text-align: right;">\$</td> </tr> <tr> <td>BODILY INJURY (Per accident)</td> <td style="text-align: right;">\$</td> </tr> <tr> <td>PROPERTY DAMAGE (Per accident)</td> <td style="text-align: right;">\$</td> </tr> </table>	COMBINED SINGLE LIMIT (Ea accident)	\$ 1,000,000	BODILY INJURY (Per person)	\$	BODILY INJURY (Per accident)	\$	PROPERTY DAMAGE (Per accident)	\$						
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C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below		N/A	WC077711058 WC077711059	11/1/2018 11/1/2018	11/1/2019 11/1/2019	<table border="0" style="width: 100%;"> <tr> <td><input checked="" type="checkbox"/> PER STATUTE</td> <td><input type="checkbox"/> OTHER</td> <td></td> </tr> <tr> <td>E.L. EACH ACCIDENT</td> <td></td> <td style="text-align: right;">\$ 1,000,000</td> </tr> <tr> <td>E.L. DISEASE - EA EMPLOYEE</td> <td></td> <td style="text-align: right;">\$ 1,000,000</td> </tr> <tr> <td>E.L. DISEASE - POLICY LIMIT</td> <td></td> <td style="text-align: right;">\$ 1,000,000</td> </tr> </table>	<input checked="" type="checkbox"/> PER STATUTE	<input type="checkbox"/> OTHER		E.L. EACH ACCIDENT		\$ 1,000,000	E.L. DISEASE - EA EMPLOYEE		\$ 1,000,000	E.L. DISEASE - POLICY LIMIT		\$ 1,000,000		
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D D C	**Aviation Liability Excess Aviation Liability Property-Replacement Cost			SASICOM60090817-05 SASICOM60090917-05 031187822	11/1/2018 11/1/2018 11/1/2018	11/1/2019 11/1/2019 11/1/2019	<table border="0" style="width: 100%;"> <tr> <td>Limit</td> <td style="text-align: right;">\$5,000,000 CSL</td> </tr> <tr> <td>Limit</td> <td style="text-align: right;">\$45,000,000 CSL</td> </tr> <tr> <td>Limit/Deductible:</td> <td style="text-align: right;">50,588,933</td> </tr> </table>	Limit	\$5,000,000 CSL	Limit	\$45,000,000 CSL	Limit/Deductible:	50,588,933								
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Limit/Deductible:	50,588,933																				

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
 -Pollution Legal Liability includes coverage for Third Party On-site, Third Party Off-site, Hostile Fire and Building Equipment, Products Pollution, Contractors Pollution and Transportation Cargo.
 -**Aviation Liability includes bodily injury to \$5,000,000 passengers and physical damage to Hull.
 -Property- All Risks of Direct Physical Loss/Damage, subject to policy terms & conditions.

Village of Downers Grove, its officers, officials, employees and volunteers are included as additional insureds under Automobile Liability and General Liability, on a primary and non-contributory basis, when agreed in a written contract, subject to policy terms, conditions and exclusions. Umbrella follows form. A waiver of subrogation applies under Workers Compensation in favor of the additional insureds listed, when agreed in a written contract, subject to policy terms, conditions and exclusions.

CERTIFICATE HOLDER VILLAGE OF DOWNERS GROVE 5101 WALNUT AVENUE DOWNERS GROVE IL 60515	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE
---	--



Village of Downers Grove

Public Works

**Proposal No. RFP-0-19-2019/DC
for MOSQUITO ABATEMENT SERVICES**

Submitted by:
Clarke Environmental Mosquito Management, Inc.,
a Clarke Company

Representatives:
Emily Glasberg

April 5, 2019



675 Sidwell Court
Saint Charles, IL 60174
630-894-2000 P
800-323-5727
630-443-3070 F
www.clarke.com



CLARKE ENVIRONMENTAL MOSQUITO MANAGEMENT, INC.

**PROPOSAL FOR
THE VILLAGE OF DOWNERS GROVE
MOSQUITO ABATEMENT SERVICES**

RFP-0-19-2-19/DC

Table of Contents

Tab No.	Item Description
1	Section IV. Proposer's Response to RFP <ul style="list-style-type: none"> • Cover Page • A. Unit Prices and Extensions • B. Phone Numbers • C. Personnel • D. Equipment • E. Description of Service
2	Municipal Reference List
3	Section V. Proposal / Contract Form <ul style="list-style-type: none"> • Proposal Contract Form • Vendor W-9 Request Form • Proposer's Certification • Suspension or Disbarment Certificate • Campaign Disclosure Certificate
4	Certificate of Insurance
5	Corporate and Product Information <ul style="list-style-type: none"> • Clarke Brochure • Labels • SDS sheets



675 Sidwell Court
St. Charles, IL 60174
630.894.2000 P
630.443.3070 F
www.clarke.com

April 2, 2019

Ms. Kerstin G. Von Der Heide
Village Forester
Village of Downers Grove
5101 Walnut Avenue
Downers Grove, IL 60515

Dear Ms. Von Der Heide:

Clarke Environmental Mosquito Management, Inc. (Clarke) is pleased to submit our proposal for the 2019 Village of Downers Grove Mosquito Abatement Services contract.

Since 1946, Clarke Mosquito Control has been setting an unparalleled standard of excellence in the mosquito control industry. Clarke utilizes an integrated, high tech approach that provides mosquito control services, products, equipment and education to governmental customers throughout the United States.

The corporation is led by Dr. J. Lyell Clarke, III, a Medical Entomologist. The Clarke Mosquito Control staff of over 135 employees includes specialists in entomology, biology, operations, public relationship, aviation, cartography, regulatory affairs, research and development, and insecticide formulations. The staff has the experience to develop and implement mosquito control solutions customized to the community's needs.

Our corporate office is based in suburban Chicago. Clarke currently serves over 200 governmental customers in Illinois, including municipalities, townships, counties, mosquito abatement districts, and federal agencies (FEMA). We provide services to neighboring communities including the City of Darien and Villages of Westmont, Lisle, Hinsdale, Lombard, Burr Ridge and Woodridge. Clarke is able to provide individualized services to each program while maintaining a regional approach.

Clarke has a fleet of 100 trucks, a local helicopter, and a partnership with Dynamic Aviation for fixed-wing aerial application. Contracts range in scope from surveillance consulting, complete integrated programs for nuisance control and disease prevention, to emergency response contract for disease outbreaks or hurricanes. Clarke is flexible to design a program that fits a community's needs and budget.

We appreciate your consideration and look forward to providing the Village of Downers Grove with an unsurpassed level of quality services for years to come. If any questions arise, please do not hesitate to contact me directly at 847-421-9117.

Sincerely,

Emily Glasberg
Key Accounts Manager / Entomologist

TAB 1

Village of Downers Grove



REQUEST FOR PROPOSAL

Name of Proposing Company: Clarke Environmental Mosquito Management, Inc.

Project Name: MOSQUITO ABATEMENT SERVICES
 Proposal No.: RFP-0-19-2019/DC
 Proposal Due: Friday, April 5th @ 10:00 a.m. at Public Works
 Pre-Proposal Conference: Informational Friday, March 29th @ 10:00 a.m. at Public Works
 Facility at 5101 Walnut Ave, Downers Grove, IL, 60515, (630) 434-5460

Required of All Proposers:

Deposit: No

Letter of Capability of Acquiring Performance Bond: No

Required of Awarded Contractor:

Performance Bond/Letter of Credit: No

Certificate of Insurance: Yes

Legal Advertisement Published: March 22, 2019

Date Issued: March 22, 2019

This document consists of 36 pages.

Return one (1) complete original Proposal Document and one (1) duplicate copy on CD or Flash Drive in a sealed envelope marked with the Proposal Number as noted above to:

KERSTIN G. VON DER HEIDE
 VILLAGE FORESTER
 VILLAGE OF DOWNERS GROVE PUBLIC WORKS
 5101 WALNUT AVENUE
 DOWNERS GROVE, IL 60515
 PHONE: 630/434-5475
 FAX: 630/434-5495
www.downers.us

Village of Downers Grove

IV. PROPOSER'S RESPONSE TO RFP

The undersigned Contractor offers to provide to the Village of Downers Grove, an Illinois municipal corporation, mosquito abatement services at the following prices and conforming to the terms and conditions of this RFP.

A. Unit Prices and Extensions

List Unit Prices, Extensions and Totals for each year. The Village Forester shall approve any and all alternative products proposed.

May 1, 2019 to December 31, 2019.

Description	Unit Price per Catch Basin/Mile	Extension Total (Unit times # Basins/Miles)
Application larvicide Naturlar™XRT to up to 4180 catch basins	\$6.10 per basin	\$25,498.00
Application larvicide Naturlar™T30 to up to 400 catch basins	\$3.80 per basin	\$1,520.00
1 st spray adulticide Duet to entire Village up to 167 miles	\$68.00 per mile	\$11,356.00
2 nd spray adulticide Duet to entire Village up to 167 miles	\$68.00 per mile	\$11,356.00
Total for Mosquito Abatement Services		\$49,730.00

Attach all pertinent labels and SDS sheets

Village of Downers Grove

January 1, 2020 to December 31, 2020.

Description	Unit Price per Catch Basin/Mile	Extension Total (Unit times # Basins/Miles)
Application larvicide Naturlar™XRT to up to 4180 catch basins	\$6.10 per basin	\$25,498.00
Application larvicide Naturlar™T30 to up to 400 catch basins	\$3.80 per basin	\$1,520.00
1 st spray adulticide Duet to entire Village up to 167 miles	\$68.00 per mile	\$11,356.00
2 nd spray adulticide Duet to entire Village up to 167 miles	\$68.00 per mile	\$11,356.00
Total for Mosquito Abatement Services		\$49,730.00

January 1, 2021 to December 31, 2021.

Description	Unit Price per Catch Basin/Mile	Extension Total (Unit times # Basins/Miles)
Application larvicide Naturlar™XRT to up to 4180 catch basins	\$6.10 per basin	\$25,498.00
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2 nd spray adulticide Duet to entire Village up to 167 miles	\$68.00 per mile	\$11,356.00
Total for Mosquito Abatement Services		\$49,730.00

COMBINED Total all 3 years = \$149,190.00

Village of Downers Grove

B. Phone Numbers

Name and phone number of 24- hour contact Emily Galsberg

847-421-9117

Hotline Phone Number 800-942-2555

C. Personnel

Attach a list of licensed equipment operators who shall be present each workday. Each operator must be able to provide proof of a valid pesticide operator's license.

D. Equipment

Attach a list of equipment

E. Description of service

Attach a description of how the mosquito abatement service shall be provided. Include previous experience and examples from other municipalities, including AVL/GPS technology.



Clarke Environmental Mosquito Management, Inc. 2019 List of Licensed Commercial Applicators and Operators

*Renewal papers submitted to state for '19. Anticipated May authorization.

***Additional employees will be receiving their applicator licenses in May.
We will forward you the updated list once the renewals are completed.**

License No	License Type	Licensee Name
CA08998787	COMMERCIAL APPLICATOR	ABEL, LEISHA
CO04394948	COMMERCIAL OPERATOR	ADESANYA, TOLUWANI
CO04394955	COMMERCIAL OPERATOR	AKRAM, KAMRAN
CO03195625	COMMERCIAL OPERATOR	ALMANZA, CALVIN
CO04398419	COMMERCIAL OPERATOR	ALTHEIMER, DAVID
CO04388141	COMMERCIAL OPERATOR	ANDERSON, MASON
CO04390858	COMMERCIAL OPERATOR	ANDERSON, MATTHEW
CO04395171	COMMERCIAL OPERATOR	APUZZO, CHRISTOPHER
CO04388156	COMMERCIAL OPERATOR	ARELLANO, CHRIS
CA04386660	COMMERCIAL APPLICATOR	BAGIOTTI, DARREL
CO04392019	COMMERCIAL OPERATOR	BAILEY, GWENDOLYN
CO04392953	COMMERCIAL OPERATOR	BAKER, STEVEN
CO04390917	COMMERCIAL OPERATOR	BARGMAN, TIMOTHY
CO04394577	COMMERCIAL OPERATOR	BARKEMEYER, GEORGE
CO04390862	COMMERCIAL OPERATOR	BARTOS, NATALIE
CO04391839	COMMERCIAL OPERATOR	BARTOS, WILLIAM
CO03195626	COMMERCIAL OPERATOR	BAUTISTA, KATHLEEN
CO04388192	COMMERCIAL OPERATOR	BELL, CHRISTOPHER
CO04388147	COMMERCIAL OPERATOR	BELL, DARRENCE
CO04391842	COMMERCIAL OPERATOR	BEVAN, MICHAEL
CO04393816	COMMERCIAL OPERATOR	BEYER, BRIAN
CO04390864	COMMERCIAL OPERATOR	BLANCO, MAURICE
DA04374519	DEALER / APPLICATOR	BOLAND, ADAM
CO04395399	COMMERCIAL OPERATOR	CARBAJAL, IVAN
CO04391838	COMMERCIAL OPERATOR	CARLSON, BRIAN
CO04394847	COMMERCIAL OPERATOR	CASPARY, RYAN
CO04366996	COMMERCIAL OPERATOR	CAULKINS, SEAN
CO04390853	COMMERCIAL OPERATOR	CEISEL, COLIN
CA04386370	COMMERCIAL APPLICATOR	CERESE, GEORGE
CO04391849	COMMERCIAL OPERATOR	CHATMAN, MIKE
CO04392064	COMMERCIAL OPERATOR	CHIERO, KATHRYN
CO04398412	COMMERCIAL OPERATOR	CHITTENDEN, RYAN
CO04392068	COMMERCIAL OPERATOR	CIANCIO, LUKE
CO04395685	COMMERCIAL OPERATOR	CICI, EMILIO
CO04388134	COMMERCIAL OPERATOR	CIPOLLA, SABRINA
CO04398798	COMMERCIAL OPERATOR	CIRAR A, ROBERT



License No	License Type	Licensee Name
CA04386419	COMMERCIAL APPLICATOR	CLARKE, JOHN
CA04355940	COMMERCIAL APPLICATOR	CLARKE, ROBERT
CO03164904	COMMERCIAL OPERATOR	COMPTON, DAVID
CO04391997	COMMERCIAL OPERATOR	CONNOR, GRANT
CA04392006	COMMERCIAL APPLICATOR	COVARRUBIAS, MICHAEL
CO04392003	COMMERCIAL OPERATOR	CURRAN, ISABELLE
CA04344095	COMMERCIAL APPLICATOR	DENGLER, RYAN
CO04388142	COMMERCIAL OPERATOR	DENTON, DEREK
CO04390861	COMMERCIAL OPERATOR	DESCH, CHRIS
CO04398421	COMMERCIAL OPERATOR	DIVINAGRACIA, ELSON
CO04376572	COMMERCIAL OPERATOR	DOLE, JOSHUA
CA04395823	COMMERCIAL APPLICATOR	DREWS, DEREK
CO04394211	COMMERCIAL OPERATOR	DUX, ANDREW
CO04390616	COMMERCIAL OPERATOR	DUX, WILLIAM
CO04388154	COMMERCIAL OPERATOR	EKINS, CARL
CO04388144	COMMERCIAL OPERATOR	ELLMAN, JOSEPH
CO04395278	COMMERCIAL OPERATOR	ESCOBAR, PEDRO
CO04373347	COMMERCIAL OPERATOR	FACHET, DANIEL
CO04388158	COMMERCIAL OPERATOR	FETT, CHRISTOPHER
CO04398415	COMMERCIAL OPERATOR	FOSTER, MICHAEL
CA04389419	COMMERCIAL APPLICATOR	GARZA, BRIANNA
CO04380364	COMMERCIAL OPERATOR	GEANCONTERI, MARIANO
CO04394958	COMMERCIAL OPERATOR	GEROVAC, MICHAEL
CO03195635	COMMERCIAL OPERATOR	GIELCZYNSKI, ALEKSANDER
CO04395640	COMMERCIAL OPERATOR	GODZISZEWSKI, DAN
CA04395821	COMMERCIAL APPLICATOR	GRA, TRAVIS
CO04356708	COMMERCIAL OPERATOR	GREEN, JAMES
CO04392974	COMMERCIAL OPERATOR	GREEN, QUANTARIUS
CO04395638	COMMERCIAL OPERATOR	GRUENDLER, ERIK
CO04394222	COMMERCIAL OPERATOR	HALAS, JESSICA
CO04395279	COMMERCIAL OPERATOR	HANSEN, ALLEN
CA04386411	COMMERCIAL APPLICATOR	HARBAUGH, RICHARD
CA04386371	COMMERCIAL APPLICATOR	HAUFLE, JOE
CO04374377	COMMERCIAL OPERATOR	HEELEY, LEE
CO04376215	COMMERCIAL OPERATOR	HENKER, RAYMOND
CO04388163	COMMERCIAL OPERATOR	HESS, CHRISTINE
CA92693980	COMMERCIAL APPLICATOR	HILER, MITCH
CO04395269	COMMERCIAL OPERATOR	HOLT, WESTON
CO04357218	COMMERCIAL OPERATOR	HUGGINS, KELLY
CO04393461	COMMERCIAL OPERATOR	HUYNH, HENRY
CO04392069	COMMERCIAL OPERATOR	JACKMAN, JOHN
CO04392076	COMMERCIAL OPERATOR	JACOB, JEFFREY



License No	License Type	Licensee Name
CO04395280	COMMERCIAL OPERATOR	JAYSWAL, NEIL
CO04398423	COMMERCIAL OPERATOR	JOHNSON, JOSEPH
CA04398469	COMMERCIAL APPLICATOR	KENNEALLY, DANIEL
CO04391995	COMMERCIAL OPERATOR	KIDWAI, AHMER
CO04391850	COMMERCIAL OPERATOR	KRAMER, BETH
CA92695306	COMMERCIAL APPLICATOR	KROLL, MICHAEL
CO04394947	COMMERCIAL OPERATOR	KRUEGER, RYON
CO04394946	COMMERCIAL OPERATOR	KWARTENG, MAVIS
CO04398403	COMMERCIAL OPERATOR	LAMBERT, LEE
CO04394224	COMMERCIAL OPERATOR	LARDI, CHRISTIAN
CA04367575	COMMERCIAL APPLICATOR	LAVEZZI, LAUREN
CO03195630	COMMERCIAL OPERATOR	LEIBFORTH, JORDAN
CO04394959	COMMERCIAL OPERATOR	LEITER, DANIEL
CO04364620	COMMERCIAL OPERATOR	LEITSCH, THOMAS
CO04395641	COMMERCIAL OPERATOR	LEROY V, LAETICIA
CO04392083	COMMERCIAL OPERATOR	LEVAND, JAMES
CO04375104	COMMERCIAL OPERATOR	LEVERENZ, FREDERICK
CA04386412	COMMERCIAL APPLICATOR	LEVOY, KORY
CA04395378	COMMERCIAL APPLICATOR	LINDEMAN, JACQUELINE
CA04391342	COMMERCIAL APPLICATOR	LIS, DANIEL
CO04395620	COMMERCIAL OPERATOR	LOBA, IZABELA
CA04374321	COMMERCIAL APPLICATOR	LYSY, PAUL
CO04395405	COMMERCIAL OPERATOR	LYTTLE, DANIELLE
CO04392897	COMMERCIAL OPERATOR	MA, RUOCHEN
CO04395178	COMMERCIAL OPERATOR	MARRUFO, ELIZABETH
CO04388161	COMMERCIAL OPERATOR	MCDANIELS, ANDREW
CA04391353	COMMERCIAL APPLICATOR	MCELLIGOTT, JOHN
CO04390863	COMMERCIAL OPERATOR	MCGHEE, NICHOLAS
CA04345915	COMMERCIAL APPLICATOR	MCNEIL, PETER
CO04398442	COMMERCIAL OPERATOR	MEYERS, MICHAEL
CO03793504	COMMERCIAL OPERATOR	MIDDENDORP, DARIEN
CO04391514	COMMERCIAL OPERATOR	MILAZZO, JOHN
CA04382295	COMMERCIAL APPLICATOR	MILLER, DOUGLAS
CO04392000	COMMERCIAL OPERATOR	MILLER, TIMOTHY
CO04390859	COMMERCIAL OPERATOR	MOHR, EMILY
CO04388148	COMMERCIAL OPERATOR	MOKDAANSKI, NICK
CO04373235	COMMERCIAL OPERATOR	MOORE, JULIA
CO04373535	COMMERCIAL OPERATOR	MROZ, GERALD
CA04370249	COMMERCIAL APPLICATOR	MULHOLLAND, TRENTEN
CO04351508	COMMERCIAL OPERATOR	MURPHY, THOMAS
CO04394960	COMMERCIAL OPERATOR	NADUPPARAMBIL, CYRIAC
CO04395629	COMMERCIAL OPERATOR	NAVARRETE, LUIS



License No	License Type	Licensee Name
CO04388151	COMMERCIAL OPERATOR	NOLAN, JAMES
CO03194212	COMMERCIAL OPERATOR	NOLAN, MICHAEL
CO04391521	COMMERCIAL OPERATOR	NORDMAN, JACOB
CA04329017	COMMERCIAL APPLICATOR	NOVAK, CHRISTOPHER
CO04395618	COMMERCIAL OPERATOR	NUNEZ, MELISSA
CO04393636	COMMERCIAL OPERATOR	OCAMPO, JOBANNY
CO04392015	COMMERCIAL OPERATOR	ORTIZ, PAUL
CO04394786	COMMERCIAL OPERATOR	PAHOMI, ERIN
CO04392086	COMMERCIAL OPERATOR	PEREZ, VLADIMIRO
CA04375061	COMMERCIAL APPLICATOR	PETERS, JACOB
CO04395166	COMMERCIAL OPERATOR	PETERSON, ALAN
CO04395748	COMMERCIAL OPERATOR	PFLUGER, TIMOTHY
CA04391360	COMMERCIAL APPLICATOR	PHILP, RHONDA
CO04395408	COMMERCIAL OPERATOR	PIRAMIDE, ZACHARY
CO04395619	COMMERCIAL OPERATOR	PLEITT, ALEEXANDER
CO04375936	COMMERCIAL OPERATOR	POKRYWKA, KEVIN
CO04391857	COMMERCIAL OPERATOR	POLICH, MICHAEL
CO04390918	COMMERCIAL OPERATOR	PUKALA, CHRISTIAN
CA04389414	COMMERCIAL APPLICATOR	PURDOM, THOMAS
CA04309577	COMMERCIAL APPLICATOR	QUINN, WILLIAM
CO04392002	COMMERCIAL OPERATOR	RAIDT, WILLIAM
CO08992008	COMMERCIAL OPERATOR	RAMSAY, PETER
CO04392090	COMMERCIAL OPERATOR	RESPONDI, CHARLES
CO04398452	COMMERCIAL OPERATOR	RICHTER, MATTHEW
CO04388157	COMMERCIAL OPERATOR	RILES, GERALD
CO04394687	COMMERCIAL OPERATOR	RIPLEY, WAYNE
CO04394794	COMMERCIAL OPERATOR	ROBAK, AUSTIN
CO04398427	COMMERCIAL OPERATOR	ROBLES, JOSE
CO04391847	COMMERCIAL OPERATOR	ROGLIN, BRUCE
CO04388135	COMMERCIAL OPERATOR	ROGMAN, MICHAEL
CA04367573	COMMERCIAL APPLICATOR	ROMANUS, MINDELYN
CO04374797	COMMERCIAL OPERATOR	ROZYLOWICZ, BRENDAN
CO04393814	COMMERCIAL OPERATOR	SALCEDO, ALYSSA
CO04395361	COMMERCIAL OPERATOR	SALGADO, JORGE
CO04393484	COMMERCIAL OPERATOR	SCHNEIDER, JEFF
CA04386372	COMMERCIAL APPLICATOR	SELANDER, MICHELLE
CO04398441	COMMERCIAL OPERATOR	SEROVSKI, ELENA
CO04392012	COMMERCIAL OPERATOR	SHANNON, MATT
CO04364897	COMMERCIAL OPERATOR	SITKO, KAMIL
CA04386421	COMMERCIAL APPLICATOR	SLATER, ADAM
CO04398439	COMMERCIAL OPERATOR	SMALLEY, MATT
CO04392918	COMMERCIAL OPERATOR	SMITH, THOMAS



License No	License Type	Licensee Name
CO04394214	COMMERCIAL OPERATOR	SOLAK, NATHAN
CO04394223	COMMERCIAL OPERATOR	STANCZYK, KAMIL
CO04392925	COMMERCIAL OPERATOR	STANFIELD, VICTOR
CO04398424	COMMERCIAL OPERATOR	STEVENS, JOSHUA
CA04344094	COMMERCIAL APPLICATOR	STOLTZNER, JEREMIAH
CO04395622	COMMERCIAL OPERATOR	STRICKLAND, BRANDON
CO04388153	COMMERCIAL OPERATOR	STUBE, THOMAS
CO04390866	COMMERCIAL OPERATOR	SWANSON, DONALD
CO03192071	COMMERCIAL OPERATOR	SZYMCZYK, PAWEL
CO04350481	COMMERCIAL OPERATOR	TANIS, DAVID
CA04386422	COMMERCIAL APPLICATOR	TASSO, VINCENT
CO04391998	COMMERCIAL OPERATOR	TIEDJE, DANIEL
CO04395637	COMMERCIAL OPERATOR	TINAJERO, SILVANO
CO04394846	COMMERCIAL OPERATOR	TOLEMY, ADAM
CO04394209	COMMERCIAL OPERATOR	TRENT, AISHA
CO04398806	COMMERCIAL OPERATOR	TRIBBLE, JASON
CO04394957	COMMERCIAL OPERATOR	TROJAN, MICHAEL
CO04394218	COMMERCIAL OPERATOR	URAI, JUSTIN
CO04388149	COMMERCIAL OPERATOR	VAN ACKER, BENJAMIN
CO04390857	COMMERCIAL OPERATOR	VAZQUEZ, LESSLI
CO04394236	COMMERCIAL OPERATOR	VON EHRENKROOK, BRANDON
CO04388159	COMMERCIAL OPERATOR	VRUNO, JOSEPH
CO04365826	COMMERCIAL OPERATOR	WAGNER, GREGORY
CO04394228	COMMERCIAL OPERATOR	WAWRZYNIAK, ANDREW
CO04374802	COMMERCIAL OPERATOR	WEINELL, AUSTIN
CO04374605	COMMERCIAL OPERATOR	WELTHER, EDWARD
CO04392009	COMMERCIAL OPERATOR	WILSON, DREW
CA04386655	COMMERCIAL APPLICATOR	WISE, CRAIG
CO04388150	COMMERCIAL OPERATOR	WISNIEWSKI, ANTHONY
CO04395621	COMMERCIAL OPERATOR	WOJCIK, JAMES
CA08985019	COMMERCIAL APPLICATOR	WOOD, CLARK
CO04395623	COMMERCIAL OPERATOR	ZARCO, MARICRUZ
CO04394225	COMMERCIAL OPERATOR	ZEC, NERMIN
CO04391996	COMMERCIAL OPERATOR	ZIMMERMAN, BENJAMIN
CO04388139	COMMERCIAL OPERATOR	ZORRILLA, MARCO

*Renewal papers submitted to state for '19. Anticipated May authorization.

***Additional employees will be receiving their applicator licenses in May.
We will forward you the updated list once the renewals are completed.**



Clarke Environmental Mosquito Management, Inc. 2019 Fleet Listing

Clarke Environmental Mosquito Management, Inc., ("Clarke") will equip the Operations Office with fleet for effective and efficient operations.

The following lists the Clarke fleet, helicopters, and fixed-wing aircraft:

VEHICLE	ST	YEAR	MAKE	MODEL	VIN
ATLANTA	418	2003	Chevrolet	S-10	1GCDT19XX38131196
ATLANTA	P5	2010	TOYOTA	Prius	JTDKN3DU7A0045687
ATLANTA	P8	2013	Toyota	Prius	JTDKN3DU4D5565823
HENDRY	511	2012	TOYOTA	PRIUS	JTDKN3DU1C1492609
HENDRY	512	2012	CHEVROLET	Colorado	1GCHTCFEXC8118481
HENDRY	564	2014	CHEVROLET	SILVERADO 1500	1GCVKPEH7EZ132943
HENDRY	568	2011	CHEVROLET	SILVERADO 1500	1GCRKSE32BZ199387
HENDRY	591	2014	CHEVROLET	SILVERADO 1500	1GCNKPEH1EZ177795
HENDRY	596	2012	FORD	F-150	1FTFW1ETXCKD98022
HENDRY	600	2016	CHEVROLET	Colorado	1GCHSBEA1G1270336
HENDRY	601	2016	CHEVROLET	Colorado	1GCHSBEA9G1278670
HENDRY	602	2016	CHEVROLET	Colorado	1GCHSBEAXG1281786
HENDRY	606	2016	CHEVROLET	Colorado	1GCHSBEA6G1300365
HENDRY	607	2016	CHEVROLET	Colorado	1GCHSBEA2G1283483
HENDRY	610	2016	CHEVROLET	Colorado	1GCHSBEA6G1334094
IDAHO	158	2007	CHEVROLET	SILVERADO 2500	1GCHK24U97E124531
IDAHO	202	2007	CHEVROLET	SILVERADO 2500	1GCHK24U57E182765
IDAHO	203	2007	CHEVROLET	SILVERADO 2500	1GCHK24U07E184939
IDAHO	P6	2010	TOYOTA	PRIUS III	JTDKN3DU7A0042921
IDAHO	QA7	2002	CHEVROLET	SILVERADO 2500	1GCGC24U02Z282038
KISSIMMEE	519	2009	CHEVROLET	SILVERADO 1500	1GCEK29C39Z254710
KISSIMMEE	524	2009	CHEVROLET	SILVERADO 1500	1GCEK29J59E154002
KISSIMMEE	597	2012	TOYOTA	Prius	JTDKN3DU6A0045776
KISSIMMEE	603	2016	CHEVROLET	Colorado	1GCHSBEA1G1278906
KISSIMMEE	604	2016	CHEVROLET	Colorado	1GCHSBEA2G1269020
KISSIMMEE	MERV	2005	Thomas Bus		1T8UY0B2951159608
MIAMI	612	2017	CHEVROLET	SILVERADO 1500	1GCNCNEHXHZ118931
MIAMI	613	2017	CHEVROLET	SILVERADO 1500	1GCNCNEHXHZ203614
MICHIGAN	206	2006	CHEVROLET	SILVERADO 1500	2GCEK19VX61295951



VEHICLE	ST	YEAR	MAKE	MODEL	VIN
MICHIGAN	218	2013	FORD	F-150 SUPERCREW	1FTFW1ET2DFB92011
MICHIGAN	223	2003	CHEVROLET	S-10	1GCDT19XX38240421
MINNESOTA	11	2006	CHEVROLET	SILVERADO 1500	3GCEC14X46G242515
MINNESOTA	22	2006	CHEVROLET	SILVERADO 1500	3GCEC14X16G266951
MINNESOTA	33	2003	CHEVROLET	SILVERADO 1500	1GCEK14V03Z173268
MINNESOTA	44	2005	CHEVROLET	SILVERADO 1500	1GCEK14V95E188765
MINNESOTA	55	2006	CHEVROLET	SILVERADO 1500	3GCEC14X76G173982
MINNESOTA	77	2005	CHEVROLET	SILVERADO 1500	1GCEK14VX5Z273932
MINNESOTA	88	2016	CHEVROLET	SILVERADO 1500	1GCNCNEH3GZ301716
MINNESOTA	99	2013	FORD	ESCAPE SE 4X4	1FMCU9GX8DUD39639
MINNESOTA	107	2003	CHEVROLET	SILVERADO 2500	1GCHK24U23E295180
MINNESOTA	183	2003	CHEVROLET	SILVERADO 1500	2GCEC19V631297527
PENNSYLVANIA	421	2003	CHEVROLET	S-10	1GCDT19X438172438
PENNSYLVANIA	219	2014	FORD	F-150 Supercrew	1FTFW1ET7EKD68768
PENNSYLVANIA	409	2003	CHEVROLET	S-10	1GCDT19X138237102
PENNSYLVANIA	326	2003	CHEVROLET	S-10	1GCDT19X938194855
PUTNAM	614	2017	CHEVROLET	SILVERADO 1500	1GCNCNEHXH2141979
PUTNAM	184	2004	CHEVROLET	COLORADO	1GCDT136048128387
PUTNAM	504	2001	CHEVROLET	SILVERADO 1500	1GCEC14W51Z226307
PUTNAM	507	2009	CHEVROLET	SILVERADO 1500	1GCEK29059Z207393
PUTNAM	508	2014	CHEVROLET	SILVERADO 1500	1GCNKPEH8EZ123538
PUTNAM	509	2014	CHEVROLET	SILVERADO 1500	1GCVKPEH2EZ260331
PUTNAM	510	2015	CHEVROLET	SILVERADO 1500	1GCNKPEH5FZ192088
PUTNAM	595	2012	FORD	ESCAPE HYBRID	1FMCU4K3XCXB39184
PUTNAM	605	2016	CHEVROLET	Colorado	1GCHSBEAXG1283022
RICHMOND	455	2009	CHEVROLET	SILVERADO 1500	1GCEK29J69Z108042
RICHMOND	484	2015	CHEVROLET	SILVERADO 1500	1GCVKREC7FZ237306
RICHMOND	Prius	2013	TOYOTA	PRIUS THREE	JTDKN3DU2D0355718
ROSELLE	100	2003	CHEVROLET	SILVERADO 2500	1GCHK29U33E238396
ROSELLE	106	2003	CHEVROLET	SILVERADO 2500	1GCHK24U33E291459
ROSELLE	108	2004	CHEVROLET	SILVERADO 2500	1GCHK24U14E277643
ROSELLE	109	2005	CHEVROLET	SILVERADO 2500	1GCHK24U55E214255
ROSELLE	110	2005	CHEVROLET	SILVERADO 2500	1GCHK24U25E282318
ROSELLE	111	2005	CHEVROLET	SILVERADO 2500	1GCHK24U45E314928
ROSELLE	112	2005	CHEVROLET	SILVERADO 2500	1GCHK24U95E206949
ROSELLE	113	2006	CHEVROLET	SILVERADO 2500	1GCHK29U96E237113
ROSELLE	120	2014	CHEVROLET	Silverado 1500	1GCNCPEH6EZ319989
ROSELLE	121	2014	CHEVROLET	Silverado 1500	1GCNCPEH4EZ340310



VEHICLE	ST	YEAR	MAKE	MODEL	VIN
ROSELLE	122	2014	CHEVROLET	Silverado 1500	1GCNCPEH0EZ337663
ROSELLE	123	2014	CHEVROLET	Silverado 1500	1GCNCPEH5EZ325332
ROSELLE	138	2003	CHEVROLET	SILVERADO 2500	1GCGC24U53Z102683
ROSELLE	139	2003	CHEVROLET	SILVERADO 2500	1GCHC24U93Z217808
ROSELLE	140	2004	CHEVROLET	SILVERADO 2500	1GCHC24U94E128801
ROSELLE	141	2004	CHEVROLET	SILVERADO 2500	1GCHC24U74E157150
ROSELLE	142	2004	CHEVROLET	SILVERADO 2500	1GCHC24U94E231524
ROSELLE	143	2004	CHEVROLET	SILVERADO 2500	1GCHC24U34E147554
ROSELLE	150	2013	CHEVROLET	SILVERADO 1500	1GCNCPEX4DZ170939
ROSELLE	151	2013	CHEVROLET	SILVERADO 1500	1GCNCPEX4DZ213014
ROSELLE	152	2013	CHEVROLET	SILVERADO 1500	1GCNCPEX7DZ190666
ROSELLE	153	2013	CHEVROLET	SILVERADO 1500	1GCNCPEX2DZ220186
ROSELLE	185	2015	CHEVROLET	Colorado	1GCHSAEA6F1257218
ROSELLE	186	2015	CHEVROLET	Colorado	1GCHSAEA7F1257387
ROSELLE	187	2015	CHEVROLET	Colorado	1GCHSAEA0F1264052
ROSELLE	188	2015	CHEVROLET	Colorado	1GCHSAEA0F1264519
ROSELLE	189	2016	CHEVROLET	Colorado	1GCHSBEA4G1101007
ROSELLE	195	1998	DODGE	RAM 3500	1B7MC33D9WJ128460
ROSELLE	197	2007	CHEVROLET	SILVERADO 2500	1GCHK24U07E199019
ROSELLE	210	2017	CHEVROLET	Colorado	1GCHSBEA3H1193213
ROSELLE	211	2017	CHEVROLET	Colorado	1GCHSBEA7H1164295
ROSELLE	212	2017	CHEVROLET	Colorado	1GCHSBEA9H1200374
ROSELLE	213	2017	CHEVROLET	Colorado	1GCHSBEAXH1151542
ROSELLE	214	2017	CHEVROLET	Colorado	1GCHSBEAXH1207625
ROSELLE	215	2017	CHEVROLET	Colorado	1GCHTBEAXH1168290
ROSELLE	216	2017	CHEVROLET	Colorado	1GCHTBEA5H1201549
ROSELLE	217	2013	FORD	F-150 SUPERCREW	1FTFW1ET4DFB92012
ROSELLE	407	2001	CHEVROLET	SILVERADO 1500	1GCHC24U71Z265773
ROSELLE	ER1	2012	TOYOTA	TACOMA	5TFNX4CN9CX013714
ROSELLE	ER2	2012	TOYOTA	TACOMA	5TFNX4CN4CX013930
ROSELLE	ER3	2013	TOYOTA	TACOMA	5TFNX4CN4DX024332
ROSELLE	ER4	2013	TOYOTA	TACOMA	5TFNX4CN6DX020802
ROSELLE	ER5	2013	CHEVROLET	SILVERADO 1500	1GCNCPEX8DZ173150
ROSELLE	ER6	2011	FORD	FUSION HYBRID	3FADP0L36BR223879
ROSELLE	L1	2010	FORD	ESCAPE HYBRID	1FMCU5K30AKC15286
ROSELLE	L2	2011	FORD	ESCAPE HYBRID	1FMCU5K37BKC64793
ROSELLE	L3	2012	FORD	ESCAPE	1FMCU0C77CKC27636
ROSELLE	L4	2011	FORD	ESCAPE HYBRID	1FMCU5K36BKC53817



VEHICLE	ST	YEAR	MAKE	MODEL	VIN
ROSELLE	P1	2008	TOYOTA	Prius	JTDKB20U383440841
ROSELLE	P10	2010	TOYOTA	Prius	JTDKN3DU5A0027611
ROSELLE	P11	2009	TOYOTA	Prius	JTDKB20U993475837
ROSELLE	P12	2009	TOYOTA	Prius	JTDKB20U993523529
ROSELLE	P13	2012	TOYOTA	Prius	JTDKN3DU8C5399305
ROSELLE	P14	2013	TOYOTA	PRIUS THREE	JTDKN3DU8D5571639
ROSELLE	P2	2008	TOYOTA	Prius	JTDKB20UX83406055
ROSELLE	P3	2008	TOYOTA	Prius	JTDKB20U487750702
ROSELLE	P4	2010	TOYOTA	Prius	JTDKB20UX93501104
ROSELLE	P7	2008	TOYOTA	Prius	JTDKB20U093476942
ROSELLE	P9	2010	TOYOTA	Prius	JTDKN3DU2A0028375
WELLINGTON	588	2000	CHEVROLET	SILVERADO 1500	1GCEK19V9YE344767
WELLINGTON	590	2009	CHEVROLET	SILVERADO 1500	1GCEK290X9Z250787
WELLINGTON	592	2014	CHEVROLET	SILVERADO 1500	1GCNKPEH3EZ254005
WELLINGTON	593	2014	CHEVROLET	SILVERADO 1500	1GCNKPEH5EZ195149
WELLINGTON	594	2014	CHEVROLET	SILVERADO 1500	3GCUKPEC7EG252371
WELLINGTON	598	2012	FORD	ESCAPE HYBRID	1FMCU0C79CKC27637
WELLINGTON	608	2016	CHEVROLET	Colorado	1GCHSBEA8G1287005
WELLINGTON	609	2016	CHEVROLET	Colorado	1GCHSBEA1G1330132
WELLINGTON	611	2016	CHEVROLET	Silverado 1500	1GCNKNEH3GZ416660

Clarke Helicopter Fleet

AIRCRAFT #	MAKE	MODEL	CAPABILITY
N324CM	Bell	206	Granular, Liquid & ULV

CLARKE ENVIRONMENTAL MOSQUITO MANAGEMENT, INC.
Operational Plan and Scope of Work
For Village of Downers Grove
Environmental Mosquito Management:
A Biorational Approach to Protecting Public Health

The techniques and approach, outlined in this document, are the tools used to build a control strategy and program for a community.

Introduction

In the last century, the United States has faced outbreaks from several known mosquito borne illnesses, including West Nile Virus, St Louis Encephalitis, Eastern Equine Encephalitis, Yellow Fever, LaCrosse Encephalitis, Chikungunya, and most recently Zika virus. Our approach to the control of mosquitoes takes both public and environmental health into account, while simultaneously delivering proactive and efficient mosquito abatement services.

Our methodology is founded on the basic concepts of Integrated Pest Management (IPM), favoring the balanced use of cultural, biological and chemical procedures that are environmentally compatible and economically feasible to reduce mosquito populations to a tolerable level (Owens 1986). Consequently, we consider our control strategy as a process and not just a reaction (e.g. spraying and insecticide) to mosquito presence.

Taking IPM to the next level, we offer municipalities and their residents **Environmental Mosquito Management** programs that emphasize:

- ❖ **Surveillance and Monitoring**
 - Mosquito Borne Disease Monitoring
 - *Aedes vexans* Brood Prediction Model
 - Weather Monitoring
- ❖ **Industry Leading Mapping and Data Tracking**
 - GIS, GPS, GeoTab, and proprietary PRIUS Software for accurate data collection
- ❖ **Intensive Larval Control**
 - Optimized Control via PRIUS Database
 - Prescription Larval Control
- ❖ **Adult Control**
 - The adult mosquito control component of the Environmental Mosquito Management process involves careful and strategic chemical applications only when established thresholds (Vector Index, Minimum Infection Rate, etc.) are reached.
- ❖ **OMRI-Listed and EPA-approved products**
- ❖ **Entomological Consultation, Reporting, and Outreach**
 - Customized Reports
 - 5 Entomologists in Chicagoland Area
 - Public Relations Support

The objectives of the Environmental Mosquito Management program are to reduce the potential of mosquito-borne disease transmission in order to provide a healthy atmosphere for community residents.

Surveillance and Monitoring

The foundation of the Environmental Mosquito Management program is surveillance. Defining the distribution and density of target mosquito species in relation to human populations is essential to the success of any program at controlling disease vectors. A variety of surveillance tools are utilized to monitor mosquito populations. Below is a just small sample of traps used.

Surveillance Network

New Jersey Light Trap Network



An important supplement to any mosquito control program is a New Jersey Light Trap. Developed in the 1930s, the trap helps determine species diversity and monitors mosquito populations. These traps are located in residential areas and are operated between dusk and dawn (the peak activity period for many species) and should be maintained each year to identify historic and habitat mosquito sites. A 25-watt bulb in the trap attracts mosquitoes, which are drawn into the trap via an electric fan. Data generated by the trap catches serve several purposes: it confirms the arrival of predicted floodwater mosquito migrations, reflects the effectiveness of mosquito control efforts and identifies fluctuations in adult mosquito populations.

West Nile Virus Surveillance Trap

A vital tool in adult mosquito and arbovirus surveillance is the West Nile virus, or gravid, trap. Developed by the Centers for Disease Control and Surveillance, the trap primarily collects gravid (*Culex*) mosquitoes (principal vectors of West Nile virus), which makes it particularly effective in tracking the disease. A gravid female mosquito has taken a blood meal and is ready to lay her eggs. Typically, (*Culex*) mosquitoes search for water rich in organic material to lay their eggs. If they've obtained their blood meal from an infected animal, they can transmit the virus to their eggs. The mosquitoes are captured live, which allows us to test them for arboviruses and get an early indicator that the virus is present in the area.



Centers for Disease Control and Prevention (CDC) Trap



Mosquitoes looking for a blood meal are mainly attracted by carbon dioxide, exhaled by humans and animals. The CDC trap provides carbon dioxide as bait through dry ice (frozen carbon dioxide) and a light source to attract female mosquitoes. This trap is set out at prime activity hours for the species targeted. A fan draws mosquitoes into a net and the live mosquitoes are trapped for arbovirus testing. CDC traps often show a very high species diversity and large overall mosquito numbers, indicating the presence of a mosquito-borne virus and relative indices of adult mosquito species.

Mosquito-Borne Disease Monitoring. Clarke has played an integral role in the control of major public health vector-borne disease epidemics including the St. Louis encephalitis virus (SLE) in 1975, West Nile virus (WNV) 1999 – 2016 outbreaks, and Zika virus (ZIKV) 2016. The current number of WNV human cases has reached over 41,000, including over 1,700 fatalities.

We have helped public health agencies address the issue of preparedness to handle sporadic and outbreak-associated vector-borne diseases by establishing proactive



laboratory-based surveillance, prevention and control programs to limit the impact of the virus in the United States. Our surveillance databases provide an early warning system to protect public health from WNV and other mosquito-borne diseases. Since 1999 Clarke has conducted gravid and ABC CO₂ trapping of the *Culex* for the testing of WNV. In addition, we provide BG Sentinel, Gravid Aedes Trap (GAT) and I2Care trapping for *Aedes aegypti* and *Ae. albopictus*. Based on the environmental additional trapping has been used to collect mosquitoes. Mosquitoes collected from traps are identified, sorted and counted by biologists and interns. Both RAMP and PCR testing is used

to monitor for WNV. Surveillance results have been shared with CDC, state, county and local governmental agencies.

***Aedes vexans* Brood Prediction.** During the course of a season, *Aedes vexans* (floodwater) mosquito broods periodically migrate into a community and override the local larviciding effort. The precise knowledge of when peak periods will occur, in conjunction with light trap counts and public feedback, enables the accurate timing of adult mosquito control applications.

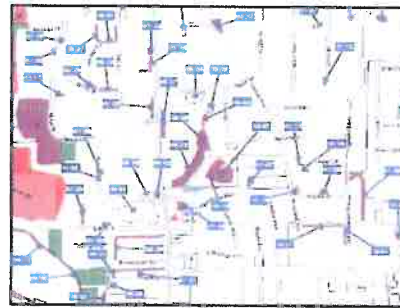
In 1967, Clarke developed a thermal summation technique which predicts the arrival of *Aedes vexans* broods and peak periods (Clarke and Wray 1967). The original manual charting technique has been modernized and incorporated in the Clarke PRIUS database. Consulting meteorologists provide the precipitation and temperature data for the model to track *Aedes vexans* brood patterns across the Midwest, including Cook County.

Weather Monitoring. Climatological data and weather conditions (wind velocity, temperature, and precipitation) are critical factors in the monitoring and control efforts of a mosquito management operation. For these reasons, Clarke has retained the services of certified consulting meteorologists since 1978. Daily forecast and storm warnings are used to ensure operations are performed during optimal conditions.

Mapping and Data Tracking

The basis of a community's mosquito control program is a comprehensive larval site survey. The objective of this survey is to clearly define, map, and categorize potential larval development sites. Clarke performs an aerial survey to systematically map all potential mosquito development sites within the community boundary. In preparation of the survey, a helicopter is utilized with a cartographer as well as ground survey teams. Larval sites are plotted using GIS layers, the acreage is measured and a reference number and habitat type are assigned. Computerized field inspection maps are developed from the master larval site survey. Other operational maps include harborage areas, catch basins, fish stocking locations and aerial and truck adulticiding routes. These operational maps are updated annually to reflect community growth and development.

PRIUS Database. To implement the Environmental Mosquito Management program, Clarke utilizes a proprietary software system, PRIUS, for resource requirement planning, operational scheduling, larval site history tracking, adult mosquito population monitoring, NPDES compliance and budget/financial reporting.



Site-specific information is recorded for each mapped site. Data includes the sites that actually produce larvae, the time of season, frequency of larval occurrence and the species found in each site. This information ultimately serves to provide a field inspection and control strategy for each site within the community.

PRIUS provides a cost effective, site specific (prescription-oriented) plan that prioritizes field operations. Control pressure is maintained on the sites most likely to produce mosquitoes. PRIUS allows mosquito control programs to become more environmentally oriented, as larval control is performed specific to the needs of each site.

Clarke utilizes a fleet of 47 state of the art truck mounted ULV sprayers in the Chicago area. Each Clarke truck is outfitted with SmartFlow II (SMII) variable control and, GEOTAB. SMII allows the adult mosquito control equipment (the sprayer) to vary its chemical output based on the speed of the vehicle providing the correct amount of insecticide per acre at any speed below 24MPH. GPS allows Clarke to verify location and speed throughout the application allowing accurate application rates and effective treatments with real-time vehicle tracking.



GEOTAB, a fleet management system, is installed in every Clarke truck. This system allows managers to monitor driver behavior for improving overall safety and cutting fuel consumption.

Larval Control

The foundation and focus of the Environmental Mosquito Management program is the environmentally sensitive control of larvae within the community. Effective control of mosquito larvae will prevent their development into adult mosquitoes and therefore, reduce the need for adult mosquito control measures.

The key to environmentally oriented larval control is the organization and classification of active and potential larval development sites obtained from comprehensive larval site surveys. Site data and mosquito activity is recorded in our PRIUS database for daily decision making and for seasonal data analysis.

Prescription-Oriented Larvicides. As noted in the IDPH publication, *Mosquitoes in Illinois, Recommendations for Prevention and Control* – 1988, a single insecticide may not be suitable for control of larvae in every habitat. For example, *Bacillus thuringiensis var. israelensis (Bti)* is effective against floodwater mosquitoes, in the relatively clean water of woodland pools, but it is much less effective against *Culex* spp. in polluted water. In polluted water VectoLex®, Natular™ or Altosid are much more effective. In addition, *Bti* is totally ineffective when used as a pre-hatch or pre-flood treatment (Clarke and Rowley 1984).



To achieve larval control, The Environmental Mosquito Management program utilizes the most environmentally sound and effective products presently available including, but not limited to, Natular™, VectoBac®, VectoLex®, and Altosid®. **Just as no one medicine is prescribed for all illnesses, no one larvicide is suitable for control of mosquitoes in every habitat.** PRIUS allows for prescription larval control, a pest management strategy based on habitat type and species history.

Catch Basin Control. The open street catch basin must be considered the primary *Culex* larval development area within a community. Heavy production of these mosquitoes is often found in water with high organic content, particularly in catch basins and sewage disposal plants. Retrospective observations following outbreaks of SLE and WNV, have suggested *Culex* development in catch basins as a major contributing factor (Mack et al. 1967; Covell & Resh 1971). Open street catch basins, inlets, and manholes will be treated with a sustained-release larvicide control product. Bicycle teams, teams walking or right-hand drive vehicles, all using GPS, are utilized to ensure proper placement into each catch basin.





Street catch basin is treated with Natular® XRT for sustainability and lower carbon footprint. For additional information regarding Clarke's sustainability efforts use the following link: www.clarke.com/sustainability. A copy of the Clarke 2017 Sustainability Report, "Building On..." is also enclosed in this RFP.

Helicopter Larviciding. Helicopter pre-hatch applications are available to the Village utilizing residual larvicide products, such as Natular G30, to be used for large, inaccessible sites found to be developing larvae.

Source Reduction Recommendations to Resolve Sanitation Violations. As part of routine inspections, Clarke inspectors will note areas such as clogged ditches or streams, neglected swimming pools, and illegal tire and trash dump sites which could potentially be public health hazards. These violations will be outlined in reports, Clarke will assist the community's code enforcement and health officials in any way possible to permanently correct or eliminate these areas as larval development sites.

Adult Mosquito Management

The adult mosquito management portion of the Environmental Mosquito Management process consists of two phases: harborage adulticiding and residential adulticiding. Adulticiding harborage areas where mosquitoes congregate can reduce the dispersal of the adult mosquito population into residential areas. As a result, residential adulticiding is limited only to periods during a health alert.

Adulticiding in Mosquito Harborage Areas. Harborage areas can be defined as cool, humid spots where adult mosquitoes congregate during sunny warm dry periods in the daytime hour, before undertaking localized feeding flights near dusk. The treatment of harborage areas with residual insecticides is often termed perimeter or "barrier" treatments. Residual treatment of harboring vegetation not only controls adult mosquitoes within, but also often prevents rapid re-infestation to adjacent residential areas. Insecticides with longer residual effect are traditionally applied by a power backpack sprayer. Insecticides can also be applied by ULV misting with a truck or ATV to achieve a contact kill. Both methods can be used for public event treatments.

Adulticiding in Residential Areas. The decision to adulticide in a community is based upon multiple factors, including those listed below. Clarke entomologists are available to work with the Village to determine exact action thresholds.

- Increased risk based on Centers for Disease Control West Nile Virus Guidelines.
- Significant increase in the number of mosquitoes that can carry disease.
- Presence of West Nile virus (WNV) in mosquito batches.
- Vector Index (VI)
- Minimum Infection Rate (MIR)
- Weather contributing to an increase in mosquito populations.
- Confirmed human case of WNV or other mosquito-borne diseases.

Truck routes are designed to provide uniform and thorough coverage of all streets. Exact mileages are determined for each route. Post treatment email reports can be sent to the multiple contacts within the organization, following adult applications.

Adulticiding via Aircraft. In emergency situations when wide-scale adulticiding is needed, Clarke has aerial capabilities through our partnership with Dynamic Aviation.



Clarke and Dynamic Aviation are leading providers of mosquito control application services to federal, state and local governments throughout the United States. Our combined experience can ensure the reliability demanded by public health officials facing emergencies arising from flooding and mosquito vectored diseases.

Our Roselle based JetRanger 206IIIB is also equipped to provide smaller scale adult mosquito applications, if necessary.

Residential Adulticiding – Operational Guidelines. Once the decision has been made to perform a ULV application, adulticiding will be performed in accordance with the label.

Adulticide Products. All chemicals used in the adulticiding program shall be applied with strict compliance to state and federal EPA label recommendations. Primary adult mosquito control products used are Duet®, Biomist®, Merus™ and Zenivex. However, Clarke is able to provide applications using all EPA approved adult mosquito control products.

ULV Equipment. All truck mounted sprayers are cold-aerosol ultra-low-volume (ULV) machines. Either gas or electric powered equipment can be utilized. Routine preventative maintenance includes monthly droplet size testing and daily flow rate calibration checks

ULV Quality Control. Detailed spray route maps are the basis for residential and harborage ULV applications. At the conclusion of a ULV spraying, actual versus theoretical insecticide consumption amounts are analyzed via SmartFlow. Routes can be reviewed for accuracy using the GeoTab and SmartFlow II (see “Mapping & Data Tracking”).

Environmental Mosquito Management Products

Products Proposed for Larval Control

Natular™ is the first and only complete formulation portfolio of larvicides with an active ingredient that is a product of a naturally occurring soil bacterium. All formulations, developed and manufactured exclusively by Clarke, contain the patented ingredient, spinosad. There are granular, tablet and liquid formulations to fit the variety of habitat situations that need to be larvicided. Natular is in a chemical class (IRAC Class 5) different from all other larvicides and has a unique mode of action, together helping fight resistance. Natular was recognized in 2010 with the EPA Presidential Green Chemistry Challenge Award. Available in six formulations, 5 OMRI Listed (Organic Materials Review Institute) all formulations are also made with inert ingredients that are on the EPA Minimal Risk List and Natular is the first larvicide evaluated as a Reduced Risk product by the EPA.



Products Proposed for Adult Mosquito Control

- 1) **Duet® Dual-action Adulticide** - an advanced dual-action mosquito adulticide, combines the proven efficacy of sumithrin (the active ingredient found in Anvil) plus the exceptional knockdown of prallethrin. Together, these two active ingredients cause "benign agitation", a unique, non-biting excitation that draws mosquitoes from a resting state enabling greater control of the natural population. Highly effective against *Culex*, *Aedes aegypti* and *Ae. Albopictus* (Suman et.al. 2012).
 - Effectively controls more mosquitoes, more quickly
 - Duet's active ingredients break down by sunlight into carbon dioxide and water vapor.

Entomological Consultation, Reporting, and Outreach

Program Staff. Clarke maintains a professional and experienced staff. Clarke utilizes a team approach to implement the Environmental Mosquito Management process. This team is led by Lyell Clarke, a Ph.D. in medical entomology, and includes a local staff of entomologists, biologists, cartographers, regulatory specialists, human resource specialists and safety personnel. In addition Clarke recruits a summer staff from major universities. When possible students are solicited from the life science disciplines and often receive college credits for an internship experience. All field personnel are trained and are licensed by the Illinois Dept. of Agriculture to perform mosquito control.

Clarke can also provide resistance testing, chemical viable and field operations efficacy and NPDES compliance.

Program Staff Quality Control. An important part of any mosquito control operation is the use of quality control supervisors. Post treatment control supervisors are used to confirm the performance and effectiveness of all seasonal and full-time personnel.

Public Relations. Release of accurate and well-timed information to the public is extremely important because an informed populace is much more likely to cooperate with and support mosquito control efforts. In addition they may be encouraged to protect themselves personally and reduce mosquito larval development on their private property. Public Relations support is available to the Village, at no additional charge, to assist with network and cable television interviews, radio interview, press releases, public service announcements and web site content. Presentations on all phases of mosquito control are available to interested civic groups, service clubs, and schools.



Insurance Coverage. Sound insurance protection is a fundamental responsibility of any pest control contractor. Clarke Environmental Mosquito Management has secured and will continue to maintain the highest coverage limits available in the market. The company currently has an insurance package with **\$25 million coverage limits**, which includes bodily injury, property damage and comprehensive chemical liability for ground and air operations. The insurance policy specifically covers all aspects of mosquito control operations, including the application of insecticide products in residential areas.

Program Reports. Communication between the Village and Clarke is key to a successful program. Regular meetings are scheduled throughout the season to discuss the program. In addition, the Village will be provided reports outlining surveillance data, services performed, and program recommendations on a continuous basis. A comprehensive annual report is prepared for each community at the conclusion of the season.

REFERENCES CITED

- Clarke, J.L., Jr., and F.C. Wray. 1967. Predicting Influxes of *Aedes vexans* in Urban Areas. *Mosq. News* 27:156-163.
- Clarke, J.L., III, and W.A. Rowley. 1984. Evaluation of Granular *Bacillus thuringiensis var israelensis* (Serotype H – 14) Formulations Against Mosquito Larvae in Central Iowa. *J. Amer. Control Assoc.* 44:502-505.
- Covell, C.V., Jr., and V.H. Resh . 1971 Relative Abundance of *Culex pipiens* and *Culex restuans* in Catch Basins in Jefferson County, Kentucky. *Mosq. News* 31: 73-76
- Mack, T.M., B.F. Brown, W.D. Sudia, J.C. Todd, H. Maxfield, and P.H. Coleman 1967. Investigation of and Epidemic of St. Louis Encephalitis in Danville, Kentucky, 1964. *J. Med, Entomol.* 4:70-75
- Owens, J.M. 1986. Urban Pest Management: Concept and Context. In *Advances in Urban Pest Management*, G.W. Bennett and J.M. Owens (eds.). Van Nostrand Reinhold Co., New York, pp. 1-12.
- Suman DS, Healy SP, Farajollahi A, Crans SS, Gaugler R. 2012. Efficacy of DUET™ dual-action adulticides against caged *Aedes albopictus* with the use of an ultra-low-volume cold aerosol sprayer. *Journal of the American Mosquito Control Association.* 28(4): 338-340.



2019-2021 Proposal

**Clarke Environmental Mosquito Management, Inc.,
Professional Services Outline for
The 2019-2021 Village of Downers Grove
Environmental Mosquito Management (EMM) Program**

Part I. General Service

- A. Aerial Survey and Geographic Information System (GIS) Mapping
- B. Computer System and Record Keeping Database
- C. Public Relations and Educational Brochures
- D. Mosquito Hotline Citizen Response – (800) 942-2555
- E. Comprehensive Insurance Coverage naming the Village of Downers Grove additionally insured
- F. Program Consulting and Quality Control Staff
- G. Monthly Operational Reports, Periodic Advisories, and Annual Report
- H. Regulatory compliance on local, state, and federal levels

Part II. Surveillance and Monitoring

- A. Floodwater Mosquito Migration Model:
The use of weather data and computer model to predict the arrival of *Aedes vexans* brood (hatch) and peak annoyance periods. (Clarke will contact the Village of Downers Grove representative and inform her/him of the impending brood arrival.)
- B. Weather Monitoring – Operational Forecasts
- C. Arbovirus Surveillance:
Clarke New Jersey Light Trap Network to monitor and evaluate adult mosquito activity.

Part III. Larval Control

- 1. Catch Basins: One treatment of up to 4,180 street side catch basins, inlets and manholes using Natular® XRT sustained release insecticide for control of up to 180 days will be performed via bicycle.
- 2. Catch Basins: One treatment of up to 400 street side catch basins, inlets and manholes using Natular® T30 sustained release insecticide for control of up to 30 days will be performed via bicycle.


Part IV. Adult Control

- A. Adulticiding in Residential Areas:
As authorized, community-wide truck ULV treatments of up to 167 miles of streets will be performed using Duet®.
- B. Adulticiding Operational Procedures
 - 1. Notification of community contact.
 - 2. Weather limit monitoring and compliance.
 - 3. Notification of residents on Clarke Call Notification List.
 - 4. ULV particle size evaluation.
 - 5. Insecticide dosage and quality control analysis.

ACCOUNT NAME:
OCEAN SIDE
 ACCOUNT NUMBER:
O860

CB SECTION 1
 August 29, 2018
 ● CATCH BASINS (101)

WARNING: This document is the property of Clarke Environmental Mosquito Mgmt., Inc. Any unauthorized use of this property will be prosecuted as a theft of labor, services, or property. (Chapter 38, §16-1 and §16-3 of the IL. REV. STATUTES)




TAB 2

Village of Downers Grove

Please Note: Those listed with a *
are also in Rusty Patched Bumble Bee areas

MUNICIPAL REFERENCE LIST

Municipality: Bloomington Township
 Address: 123 N. Rosedale, Bloomington, IL 60108
 Telephone # 630-529-7715
 Forestry Contact Name Micheal Hovde, Jr, Supervisor
 Year of the contract Years Served - 35+

Municipality Downers Grove Township *
Address: 4340 Prince Street, Downers Grove, IL 60515
Telephone # 630-719-6611
Forestry Contact Name Mark Thoman, Supervisor
Year of the contract Years Served - 35+

Municipality: Village of Burr Ridge *
 Address: 7660 S. County Line Road, Burr Ridge, IL 60521
 Telephone # 630-654-8181
 Forestry Contact Name Mr. David Preissig, Operations Supervisor
 Year of the contract Years Served - 35+

Municipality Village of Hinsdale *
Address: 19 E. Chicago Avenue, Hinsdale, IL 60521
Telephone # 630-789-7041
Forestry Contact Name Mr. George Peluso, Director of Public Services
Year of the contract Years Served - 30+

Municipality: West Chicago Mosquito Abatement District *
 Address: 493 Duane Street, Glen Ellyn, IL 60137
 Telephone # 630-231-3591
 Forestry Contact Name Mrs. Dona Smith, President
 Year of the contract Years Served - 25+

Municipality Village of Westmont *
Address: 31 W. Quincy Street, Westmont, IL 60559
Telephone # 630-981-6210
Forestry Contact Name Mr. Steve May, Village Manager
Year of the contract Years Served - 35+

Municipality: Wheaton Mosquito Abatement District *
 Address: P.O. Box 933, Wheaton, IL 60189
 Telephone # 630-479-0048
 Forestry Contact Name Mr. Alan Bolds
 Year of the contract Years Served - 50+

Treatment Protocol for Rusty Patched Bumble Bee for Village of Downers Grove

Clarke consults with the Illinois DNR when mosquito adulticide service areas overlap or appear to overlap with demarcated Rusty Patched Bumble Bee zones; we also provide the IDNR product information and treatment protocols.

The IDNR has reviewed the ULV protocols and concluded the following:

*The Department has determined adverse impacts within the treatment area are unlikely for state-listed species and natural areas, including the **rusty-patched bumblebee (Bombus affinis)**, given the following recommendations are implemented:*

- *No treatments are to be conducted within Illinois Nature Preserves properties and a 300-foot buffer should be maintained around all Nature Preserve properties;*
- *All treatments employ Ultra-Low Volume (ULV) methodology;*
- *Treatments only occur at night, and only in response to threshold disease or vector levels;*
- *And the applicant strictly adheres to the EPA label restrictions when applying*

Our treatment thresholds are based on local disease levels and mosquito population densities, which have been established to help prevent the amplification of arbovirus in the vector and host populations (see Operational Plan).

Clarke will only perform ULV adult mosquito control in Rusty Patched Bumble Bee zones during the following time range: treatments will begin no earlier than 2 hours after sunset; treatments will end no later than 2 hours before sunrise.

ULV adult mosquito control applications will be performed using sumithrin-based products, based on research related to honey bee toxicity.

TAB 3

Village of Downers Grove

V. PROPOSAL/CONTRACT FORM

*****THIS PROPOSAL, WHEN ACCEPTED AND SIGNED BY AN AUTHORIZED SIGNATORY OF THE VILLAGE OF DOWNERS GROVE, SHALL BECOME A CONTRACT BINDING UPON BOTH PARTIES.**

Entire Block Must Be Completed When A Submitted Proposal Is To Be Considered For Award

PROPOSER:

Clarke Environmental Mosquito Mgmt, Inc.

Date: 4/2/2019

Company Name

eglasberg@clarke.com

Email Address

675 Sidwell Court

Street Address of Company

Emily Glasberg

Contact Name (Print)

Saint Charles, IL 60174

City, State, Zip

847-421-9117

24-Hour Telephone

800-323-5727

Business Phone



Signature of Officer, Partner or Sole Proprietor

630-443-3070

Fax

Clark E. Wood, VP Service Operations

Print Name & Title

ATTEST: If a Corporation


Signature of Corporation Secretary

VILLAGE OF DOWNERS GROVE:

Authorized Signature

ATTEST:

Title

Signature of Village Clerk

Date

Date

In compliance with the specifications, the above-signed offers and agrees, if this Proposal is accepted within 90 calendar days from the date of opening, to furnish any or all of the services upon which prices are quoted, at the price set opposite each item, delivered at the designated point within the time specified above.

Village of Downers Grove



VENDOR W-9 REQUEST FORM

The law requires that we maintain accurate taxpayer identification numbers for all individuals and partnerships to whom we make payments, because we are required to report to the I.R.S all payments of \$600 or more annually. We also follow the I.R.S. recommendation that this information be maintained for all payees including corporations.

Please complete the following substitute W-9 letter to assist us in meeting our I.R.S. reporting requirements. The information below will be used to determine whether we are required to send you a Form 1099. Please respond as soon as possible, as failure to do so will delay our payments.

BUSINESS (PLEASE PRINT OR TYPE):

NAME: Clarke Environmental Mosquito Management, Inc.

ADDRESS: 675 Sidwell Court

CITY: Saint Charles

STATE: IL

ZIP: 60174

PHONE: 800-323-570 FAX: 630-443-3070

TAX ID #(TIN): 36-2391274

(If you are supplying a social security number, please give your full name)

REMIT TO ADDRESS (IF DIFFERENT FROM ABOVE):

NAME: _____

ADDRESS: _____

CITY: _____

STATE: _____ ZIP: _____

TYPE OF ENTITY (CIRCLE ONE):

- Individual
- Sole Proprietor
- Partnership
- Medical
- Charitable/Nonprofit
- Limited Liability Company -Individual/Sole Proprietor
- Limited Liability Company-Partnership
- Limited Liability Company-Corporation
- Corporation
- Government Agency

SIGNATURE: Clarke Spord

DATE: 4/1/2019

Village of Downers Grove

PROPOSER'S CERTIFICATION (page 1 of 3)

With regard to Mosquito Abatement Clarke Environmental
Services, Proposer Mosquito Management, Inc. hereby certifies
(Name of Project) (Name of Proposer)
the following:

1. Proposer is not barred from bidding this contract as a result of violations of Section 720 ILCS 5/33E-3 (Bid Rigging) or 720 ILCS 5/33E-4 (Bid-Rotating);
2. Proposer certifies that it has a written sexual harassment policy in place and is in full compliance with 775 ILCS 5/2-105(A)(4);
3. Proposer certifies that it is in full compliance with the Federal Highway Administrative Rules on Controlled Substances and Alcohol Use and Testing, 49 C. F.R. Parts 40 and 382 and that all employee drivers are currently participating in a drug and alcohol testing program pursuant to the Rules.
4. Proposer further certifies that it is not delinquent in the payment of any tax administered by the Department of Revenue, or that Proposer is contesting its liability for the tax delinquency or the amount of a tax delinquency in accordance with the procedures established by the appropriate Revenue Act. Proposer further certifies that if it owes any tax payment(s) to the Department of Revenue, Proposer has entered into an agreement with the Department of Revenue for the payment

Village of Downers Grove

PROPOSER'S CERTIFICATION (page 2 of 3)

of all such taxes that are due, and Proposer is in compliance with the agreement.

BY: Clark E. Wood
Proposer's Authorized Agent Clark E. Wood, VP Service Operations

3 6 - 2 3 9 1 2 7 4

FEDERAL TAXPAYER IDENTIFICATION NUMBER

or _____
Social Security Number

Subscribed and sworn to before me
this 1st day of April, 2019.

Brenda A Francis
Notary Public



(Fill Out Applicable Paragraph Below)

(a) Corporation

The Proposer is a corporation organized and existing under the laws of the State of Illinois, which operates under the Legal name of Clarke Environmental Mosquito Management, Inc. and the full names of its Officers are as follows:

President: J. Lyell Clarke, III

Secretary: Kevin Magro

Treasurer: Clark E. Wood

and it does have a corporate seal. (In the event that this Proposal is executed by other than the President, attach hereto a certified copy of that section of Corporate By-Laws or other authorization by the Corporation which permits the person to execute the offer for the corporation.)

(b) Partnership

Signatures and Addresses of All Members of Partnership:

Village of Downers Grove

PROPOSER'S CERTIFICATION (page 3 of 3)

The partnership does business under the legal name of: _____
 which name is registered with the office of _____ in the state of
 _____.

(c) Sole Proprietor

The Proposer is a Sole Proprietor whose full name is: _____
 and if operating under a trade name, said trade name is: _____
 which name is registered with the office of _____ in the state of
 _____.

5. Are you willing to comply with the Village's preceding insurance requirements within 13 days of the award of the contract? Yes

Insurer's Name HUB International

Agent HUB International Midwest

Street Address 1411 Opus Place, Suite 450

City, State, Zip Code Downers Grove, IL 60515

Telephone Number 630-468-5600

I/We affirm that the above certifications are true and accurate and that I/we have read and understand them.

Print Name of Company: Clarke Environmental Mosquito Management, Inc.

Print Name and Title of Authorizing Signature: Clark E. Wood, VP Service Operations

Signature: 

Date: 4/1/2019

Village of Downers Grove

Suspension or Debarment Certificate
--

Non-Federal entities are prohibited from contracting with or making sub-awards under covered transactions to parties that are suspended or debarred or whose principals are suspended or debarred. Covered transactions include procurement for goods or services equal to or in excess of \$100,000.00. Contractors receiving individual awards for \$100,000.00 or more and all sub-recipients must certify that the organization and its principals are not suspended or debarred.

By submitting this offer and signing this certificate, the Proposer certifies to the best of its knowledge and belief, that the company and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any federal, state or local governmental entity, department or agency;
2. Have not within a three-year period preceding this Proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction, or convicted of or had a civil judgment against them for a violation of Federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and
4. Have not within a three-year period preceding this application/proposal/contract had one or more public transactions (Federal, State or local) terminated for cause or default.

If the Proposer is unable to certify to any of the statements in this certification, Proposer shall attach an explanation to this certification.

Company Name: Clarke Environmental Mosquito Management, Inc.

Address: 675 Sidwell Court

City: Saint Charles, IL Zip Code: 60174

Telephone: (800) 323-5727 Fax Number: (630) 443-3070

E-mail Address: eglasberg@clarke.com

Authorized Company Signature: 

Print Signature Name: Clark Wood Title of Official: VP Service Operations

Date: 4/1/2019

Village of Downers Grove

CAMPAIGN DISCLOSURE CERTIFICATE

Any contractor, proposer, bidder or vendor who responds by submitting a bid or proposal to the Village of Downers Grove shall be required to submit with its submission, an executed Campaign Disclosure Certificate.

The Campaign Disclosure Certificate is required pursuant to the Village of Downers Grove Council Policy on Ethical Standards and is applicable to those campaign contributions made to any member of the Village Council.

Said Campaign Disclosure Certificate requires any individual or entity bidding to disclose campaign contributions, as defined in Section 9-1.4 of the Election Code (10 ILCS 5/9-1.4), made to current members of the Village Council within the five (5) year period preceding the date of the bid or proposal release.

By signing the bid or proposal documents, contractor/proposer/bidder/vendor agrees to refrain from making any campaign contributions as defined in Section 9-1.4 of the Election Code (10 ILCS 5/9-1.4) to any Village Council member and any challengers seeking to serve as a member of the Downers Grove Village Council.

Under penalty of perjury, I declare:

[X] Bidder/vendor has not contributed to any elected Village position within the last five (5) years.

Signature: [Handwritten Signature] Clark Wood Print Name

[] Bidder/vendor has contributed a campaign contribution to a current member of the Village Council within the last five (5) years.

Print the following information:

Name of Contributor: _____ (company or individual)

To whom contribution was made: _____

Year contribution made: _____ Amount: \$ _____

Signature _____ Print Name _____

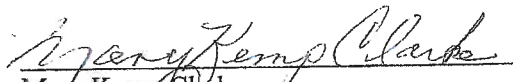
**UNANIMOUS WRITTEN CONSENT
OF THE BOARD OF DIRECTORS OF
CLARKE ENVIRONMENTAL MOSQUITO MANAGEMENT, INC.**

The undersigned, being all of the directors of Clarke Environmental Mosquito Management, Inc. (the "Company"), in lieu of a special meeting of the board of directors, do hereby consent in writing to the adoption of the following resolutions:

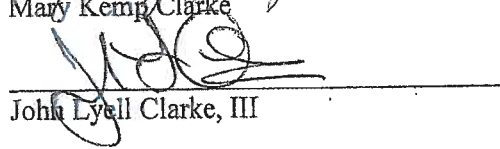
RESOLVED, that for the period commencing January 1, 2019 and continuing through December 31, 2028, any one or more of the persons serving as officers of the Company at the time of submission of a bid are hereby authorized to sign and submit all documents necessary to submit any and all bid proposals for the provision of goods and/or services to any and all governmental entities, corporations, other entities and/or individuals and to take any and all other actions necessary for the submission of such bid proposals.

RESOLVED FURTHER, that all actions taken by any officer of the Company in furtherance of these resolutions are hereby ratified, affirmed and approved in all respects as the acts of the Company.

Dated: December 19, 2018



Mary Kemp Clarke



John Lyell Clarke, III

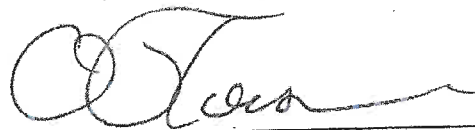
[Being all the directors of the Company]

CERTIFICATE OF SECRETARY

The undersigned, Andrew P. Tecson, hereby certifies that: (i) he is the duly qualified Secretary of Clarke Environmental Mosquito Management, Inc., an Illinois corporation (the "Company"); and (ii) the unanimous written consent of the Company's board of directors (attached hereto as Exhibit A) is a true and correct copy of the unanimous written consent executed by the board of directors of the Company and remains in force and effect.

Dated: December 19, 2018

Secretary of the Company:

A handwritten signature in black ink, appearing to read "A. Tecson", written over a horizontal line.

Andrew P. Tecson

Exhibit A
Unanimous Written Consent

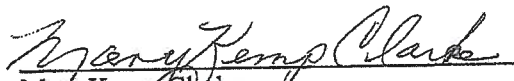
**UNANIMOUS WRITTEN CONSENT
OF THE BOARD OF DIRECTORS OF
CLARKE ENVIRONMENTAL MOSQUITO MANAGEMENT, INC.**

The undersigned, being all of the directors of Clarke Environmental Mosquito Management, Inc. (the "Company"), in lieu of a special meeting of the board of directors, do hereby consent in writing to the adoption of the following resolutions:

RESOLVED, that for the period commencing January 1, 2019 and continuing through December 31, 2028, any one or more of the persons serving as officers of the Company at the time of submission of a bid are hereby authorized to sign and submit all documents necessary to submit any and all bid proposals for the provision of goods and/or services to any and all governmental entities, corporations, other entities and/or individuals and to take any and all other actions necessary for the submission of such bid proposals.

RESOLVED FURTHER, that all actions taken by any officer of the Company in furtherance of these resolutions are hereby ratified, affirmed and approved in all respects as the acts of the Company.

Dated: December 19, 2018



Mary Kemp Clarke



John Lyell Clarke, III

[Being all the directors of the Company]

INCUMBENCY CERTIFICATE

The undersigned, being the duly authorized and acting Secretary of Clarke Environmental Mosquito Management, Inc., an Illinois corporation, hereby certifies that the following persons hold the offices set opposite their names:

OFFICE

NAME

Chairperson of the Board	Mary Kemp Clarke
President	John L. Clarke, III
Chief Financial Officer and Vice President	I. Gordon Anderson
Vice President of Operations and General Manager	Joel Freundt
Vice President of Service Operations	Clark Wood
Vice President of Human Resources	Julie Reiter
Executive Vice President, Strategic Partnerships and Alliances	A. Kevin Magro
Vice President, Product Innovation and Government Affairs	Karen Larson
Treasurer	John L. Clarke, III
Secretary	Andrew P. Tecson
Assistant Secretary	Frances Kanouse
Assistant Secretary	A. Kevin Magro

Dated: December 19, 2018



Andrew P. Tecson, Secretary

TAB 4



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

4/2/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER HUB International Midwest Limited 55 East Jackson Boulevard Chicago IL 60604	CONTACT NAME: CSU Chicago PHONE (A/C, No, Ext): 312-922-5000 FAX (A/C, No): E-MAIL ADDRESS: CSUChicago@hubinternational.com													
	<table border="1"> <tr> <th>INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> <tr> <td>INSURER A: Lexington Insurance Company</td> <td>19437</td> </tr> <tr> <td>INSURER B: Commerce & Industry Insurance Company</td> <td>19410</td> </tr> <tr> <td>INSURER C: National Union Fire Insurance Company of Pittsburg</td> <td>19445</td> </tr> <tr> <td>INSURER D: Federal Insurance Company</td> <td>20281</td> </tr> <tr> <td>INSURER E:</td> <td></td> </tr> <tr> <td>INSURER F:</td> <td></td> </tr> </table>	INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A: Lexington Insurance Company	19437	INSURER B: Commerce & Industry Insurance Company	19410	INSURER C: National Union Fire Insurance Company of Pittsburg	19445	INSURER D: Federal Insurance Company	20281	INSURER E:		INSURER F:
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INSURER D: Federal Insurance Company	20281													
INSURER E:														
INSURER F:														
INSURED Clarke Environmental Mosquito Management, Inc. 675 Sidwell Court St Charles, IL 60174														

COVERAGES

CERTIFICATE NUMBER: 1427449806

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Pollution Legal Liability GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:			EG1950828	11/1/2018	11/1/2019	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 25,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 Pollution Legal Liab \$ 1,000,000
B	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY			CA6530642	11/1/2018	11/1/2019	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input checked="" type="checkbox"/> RETENTION \$ 0			EGU1950829	11/1/2018	11/1/2019	EACH OCCURRENCE \$ 25,000,000 AGGREGATE \$ 25,000,000 \$
C	<input checked="" type="checkbox"/> WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below		Y/N N	WC077711058 WC077711059	11/1/2018 11/1/2018	11/1/2019 11/1/2019	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
D	<input checked="" type="checkbox"/> Aviation Liability <input type="checkbox"/> Excess Aviation Liability <input type="checkbox"/> Property-Replacement Cost			SASICOM60090817-05 SASICOM60090917-05 031187822	11/1/2018 11/1/2018 11/1/2018	11/1/2019 11/1/2019 11/1/2019	Limit \$5,000,000 CSL Limit \$45,000,000 CSL Limit/Deductible: 50,588,933

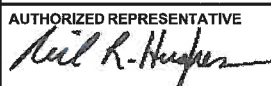
DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

- Pollution Legal Liability includes coverage for Third Party On-site, Third Party Off-site, Hostile Fire and Building Equipment, Products Pollution, Contractors Pollution and Transportation Cargo.
- **Aviation Liability includes bodily injury to \$5,000,000 passengers and physical damage to Hull.
- Property- All Risks of Direct Physical Loss/Damage, subject to policy terms & conditions.

Village of Downers Grove, its officers, officials, employees and volunteers are included as additional insureds under Automobile Liability and General Liability, on a primary and non-contributory basis, when agreed in a written contract, subject to policy terms, conditions and exclusions. Umbrella follows form. A waiver of subrogation applies under Workers Compensation in favor of the additional insureds listed, when agreed in a written contract, subject to policy terms, conditions and exclusions.

CERTIFICATE HOLDER

CANCELLATION

VILLAGE OF DOWNERS GROVE 5101 WALNUT AVENUE DOWNERS GROVE IL 60515	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE 
--	---

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TAB 5



DUET[®]

Dual-Action Adulticide

For use only by federal, state, tribal, or local government officials responsible for public health or vector control, or by persons certified in the appropriate category or otherwise authorized by the state or tribal lead pesticide regulatory agency to perform adult mosquito control applications, or by persons under their direct supervision.

A Quick Knockdown, Oil Soluble Synergized Synthetic Pyrethroid for Effective Control of Adult Mosquitoes, Gnats, Biting and Non-Biting Midges, and Blackflies in Outdoor Residential and Recreational Areas.

ACTIVE INGREDIENTS:	
Prallethrin: (RS)-2-methyl-4-oxo-3-(2-propynyl) cyclopent-2-enyl-(1RS)-cis, trans-chrysanthemate	1.00%
Sumithrin®: 3-Phenoxybenzyl-(1RS, 3RS, 1RS, 3SR)-2,2-dimethyl-3-(2-methylprop-1-enyl) cyclopropanecarboxylate	5.00%
* Piperonyl Butoxide	5.00%
** OTHER INGREDIENTS	89.00%
	100.00%
Contains 0.0717 pounds of Prallethrin/Gallon, 0.359 pounds of Sumithrin®/Gallon and 0.359 pounds of Piperonyl Butoxide (PBO)/Gallon	
*(butylcarbityl)(6-propylpiperonyl) ether and related compounds	
**Contains petroleum distillate	

KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUCION AL USUARIO: Si usted no lee ingles, no use este producto hasta que la etiqueta haya sido explicado ampliamente

FIRST AID

IF SWALLOWED:

- Immediately call a poison control center or doctor.
- Do not induce vomiting unless told to do so by a poison control center or a doctor.
- Do not give **any** liquid to the person.
- Do not give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: Contains petroleum distillates - vomiting may cause aspiration pneumonia.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information regarding medical emergencies or pesticide incidents, call 1-888-740-8712.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE) Mixers, loaders, applicators, and other handlers must wear the following: long-sleeved shirt, long pants, shoes and socks. See engineering controls for additional requirements.

USER SAFETY REQUIREMENTS Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

USER SAFETY RECOMMENDATIONS Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

ENGINEERING CONTROLS Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)]. Human flagging is prohibited. Flagging to support aerial applications is limited to the use of the Global Positioning System (GPS) or mechanical flaggers.

ENVIRONMENTAL HAZARDS

This pesticide is highly toxic to aquatic organisms, including fish and aquatic invertebrates. Runoff from treated areas or deposition of spray droplets into a body of water may be hazardous to fish and aquatic invertebrates. Before making the first application in a season, it is advisable to consult with the state or tribal agency with primary responsibility for pesticide regulation to determine if other regulatory requirements exist. Do not apply over bodies of water (lakes, rivers, permanent streams, natural ponds, commercial fish ponds, swamps, marshes or estuaries), except when necessary to target areas where adult mosquitoes are present, and weather conditions will facilitate movement of applied material away from the water in order to minimize incidental deposition into the water body. Do not contaminate bodies of water when disposing of equipment rinsate or washwaters.

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not

apply to or allow drift onto blooming crops or weeds when bees are foraging in the treatment area, except when applications are made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

USE RESTRICTIONS

For use only by federal, state, tribal, or local government officials responsible for public health or vector control, or by persons certified in the appropriate category or otherwise authorized by the state or tribal lead pesticide regulatory agency to perform adult mosquito control applications, or by persons under their direct supervision.

IN CALIFORNIA: This product is to be applied by County Health Department, State Department of Health Services, Mosquito and Vector Control or Mosquito Abatement District personnel only.

IN FLORIDA: Aerial applications of this product require trained personnel to perform industry accepted assays to monitor resistance formation in targeted mosquitoes.

Do not treat a site with more than 0.0036 lb. of each a.i., Sumithrin and piperonyl butoxide and 0.00072 lbs. prallethrin per acre in a single application or in any 24-hour period. Do not apply more than 0.0108 lb. each of Sumithrin and piperonyl butoxide 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 piperonyl butoxide and 0.0043 lb. prallethrin to the same treatment area in 1 month. Do not exceed 0.1 lb. of Sumithrin or piperonyl butoxide or 0.02 lb. prallethrin per acre in any site in one year. More frequent applications may be made to prevent or control a threat to public and/or animal health determined by a state, tribal, or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

NOTE: When rotating products with other insecticides containing piperonyl butoxide, do not exceed 2 lbs. PBO per acre per year.

Not for use in outdoor residential misting systems. Not for use in metered release systems.

DUET cannot be diluted in water. Dilute this product with light mineral oil if dilution is preferred.

USE INFORMATION

DUET is approved for application as a thermal aerosol and as an Ultra Low Volume (ULV) nonthermal aerosol (cold fog) in mosquito adulticiding programs involving outdoor residential, urban, industrial, and recreational areas where adult mosquitoes are present in annoying numbers, and in vegetation surrounding parks, woodlands, swamps, marshes, overgrown areas and golf courses.

DUET may be applied over crops or to areas favoring drift over crops, including row, tree, fruit, citrus, pasture and other areas where agricultural enterprises take place.

SPRAY DROPLET SIZE DETERMINATION

Ground-based, wide area mosquito abatement application: Spray equipment must be adjusted so that the volume median diameter (VMD) is less than 30 microns (Dv 0.5 < 30 um) and that 90% of the spray is contained in droplets smaller than 50 microns (Dv 0.9 < 50 um). Directions from the equipment manufacturer or vendor, pesticide registrant, or a test facility using a laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

Aerial Equipment, wide area mosquito abatement application: Spray equipment must be adjusted so that the volume median diameter produced is less than 60 microns (Dv 0.5 < 60 um) and that 90% of the spray is contained in droplets smaller than 115 microns (Dv 0.9 < 115 um). The effects of flight speed and, for non-rotary atomizers, nozzle angle on the droplet size spectrum must be considered. Directions from the equipment manufacturer or vendor, pesticide registrant, or a test facility using a wind tunnel and laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

GROUND ULV APPLICATION

To control Mosquitoes and other listed insects, apply DUET at a flow rate of 2.6 to 7.8 fluid ounces per minute at an average vehicle speed of 10 mph using a swath width of 300 feet for acreage calculations (see chart below). For best results, apply when mosquitoes are most active and meteorological conditions are conducive to keeping the spray cloud close to the ground. Certain mosquito species such as *Aedes aegypti* and *Aedes albopictus*, are most active during the day. Application in calm air conditions is to be avoided. Apply only when ground wind speed is greater than or equal to 1 mph. All types of applications should be conducted at temperatures above 50 °F. Under normal residential conditions a flow rate of 4.8 fluid ounces per minute at an average vehicle speed of 10 mph is recommended. If a different vehicle speed is used, adjust rate accordingly. These rates are equivalent to 0.00024 to 0.00072 pounds of Prallethrin and 0.0012 to 0.0036 pounds of Sumithrin® and Piperonyl Butoxide per acre. Vary flow rate according to vegetation density and mosquito population. Use higher flow rate

in heavy vegetation or when populations are high. DUET may also be diluted with a suitable solvent such as mineral oil and applied by GROUND ULV equipment so long as 1.28 fluid ounces per acre of DUET is not exceeded. Refer to the dilution tables on this label for flow rate calculations for diluted end-use formulations of DUET. Use the following tables to calculate application rates:

Pounds a.i./Acre			DUET Fl.oz./Acre	Flow Rates in fluid oz./minute at truck speeds of:			
Prallethrin	Sumithrin®	PBO		5 MPH	10 MPH	15 MPH	20 MPH
0.00072	0.0036	0.0036	1.28	3.9	7.8	11.7	15.6
0.00044	0.0022	0.0022	0.79	2.4	4.8	7.1	9.5
0.00036	0.0018	0.0018	0.64	1.9	3.9	5.8	7.8
0.00024	0.0012	0.0012	0.43	1.3	2.6	3.9	5.2

DUET may be applied through truck mounted thermal fogging equipment. Do not exceed the maximum rates listed above. May be applied at speeds of 5 to 20 mph. To reduce oil requirement and sludge buildup in equipment, use a 60-100-second viscosity mineral "fog" oil or other fuel-type oil. Use a clean, well-maintained and properly calibrated fogger. Do not wet foliage since oil base formulations may be phytotoxic.

Urban ULV Mosquito Control: DUET may be applied for control of resting or flying adult mosquitoes in urban and industrial areas such as utility tunnels, pipe chases, underground basements, underground passages, parking decks, open parking garages, abandoned warehouses, crawl spaces, uninhabited buildings, rail yards, waste yards, junkyards, tire dumps, and other areas where adult mosquitoes may be found. Apply using mechanical-foggers, or truck-mounted ULV equipment, or other spray equipment suitable for this application. Apply at rates up to but not exceeding 0.0036 lb of each a.i., Sumithrin and piperonyl butoxide and 0.00072 lbs. prallethrin per acre in a single application or in any 24-hour period.

AERIAL APPLICATION

DUET may be applied at rates of 0.43 to 1.28 fluid ounces of DUET per acre by fixed wing or rotary aircraft equipped with suitable ULV application equipment. Appropriate spray systems include rotary atomizers, flat fan, high pressure, and high pressure impaction nozzles characterized and oriented to achieve the droplet characteristics specified in this label. DUET may also be diluted with a suitable solvent such as mineral oil and applied by aerial ULV equipment so long as 1.28 fluid ounces per acre of DUET is not exceeded. Refer to the dilution tables on this label for flow rate calculations for diluted end-use formulations of DUET. Do not apply by fixed wing aircraft at a height less than 100 feet above the ground or canopy, or by helicopter at a height less than 75 feet above the ground or canopy unless specifically approved by the state or tribe based on public health needs. When making aerial application at an altitude of less than 100 feet, apply only when wind speed at altitude is greater than or equal to 5 mph. When making application at an altitude of 100 feet or greater, apply only when wind speed at altitude is greater than or equal to 3 mph.

DILUTION CALCULATIONS

For a 4% Sumithrin product, dilute 1 gallon DUET with 0.25 gallon oil. Finished spray contains 0.29 lbs Sumithrin & PBO and 0.06 pounds Prallethrin per gallon.

Dosage Description	Pounds a.i./Acre			Fluid oz. Finished spray/Acre	Flow Rates in fluid oz./minute at truck speeds of:			
	Prallethrin	Sumithrin	PBO		5 MPH	10 MPH	15 MPH	20 MPH
High Population	0.00072	0.0036	0.0036	1.61	4.9	9.7	14.6	19.5
Recommended	0.00044	0.0022	0.0022	0.98	3.0	5.9	8.9	11.9
Light Population	0.00036	0.0018	0.0018	0.80	2.4	4.9	7.3	9.7
	0.00024	0.0012	0.0012	0.54	1.6	3.2	4.9	6.5

For a 2.5% Sumithrin product, dilute 1 gallon DUET with 1 gallon oil. Finished spray contains 0.179 lbs Sumithrin & PBO and 0.036 pounds Prallethrin per gallon.

Dosage Description	Pounds a.i./Acre			Fluid oz. Finished spray/Acre	Flow Rates in fluid oz./minute at truck speeds of:			
	Prallethrin	Sumithrin	PBO		5 MPH	10 MPH	15 MPH	20 MPH
High Population	0.00072	0.0036	0.0036	2.57	7.8	15.6	23.4	31.1
Recommended	0.00044	0.0022	0.0022	1.57	4.8	9.5	14.3	19.0
Light Population	0.00036	0.0018	0.0018	1.28	3.9	7.8	11.7	15.6
	0.00024	0.0012	0.0012	0.86	2.6	5.2	7.8	10.4

For a 2% Sumithrin product, dilute 1 gallon DUET with 1.5 gallons oil. Finished spray contains 0.143 lbs Sumithrin & PBO and 0.029 pounds Prallethrin per gallon.

Dosage Description	Pounds a.i./Acre			Fluid oz. Finished spray/Acre	Flow Rates in fluid oz./minute at truck speeds of:			
	Prallethrin	Sumithrin	PBO		5 MPH	10 MPH	15 MPH	20 MPH
High Population	0.00072	0.0036	0.0036	3.21	9.7	19.5	29.2	38.9
Recommended	0.00044	0.0022	0.0022	1.96	5.9	11.9	17.8	23.8
Light Population	0.00036	0.0018	0.0018	1.61	4.9	9.7	14.6	19.5
	0.00024	0.0012	0.0012	1.07	3.2	6.5	9.7	13.0

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: Store in a cool, dry place. Keep container closed.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL:

[For 2.5-gallon Jugs]: Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with mineral oil and recap. Shake for 10 seconds. Pour rinsate into application equipment or a rinse tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

[For refillable drums & totes]: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into rinsate collection system. Repeat this rinsing procedure two more times. Offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

FOR MORE INFORMATION CALL 1-800-323-5727

NOTICE: To the extent provided by law, Seller makes no warranty, expressed or implied, concerning the use of this product other than as indicated on the label. Buyer assumes all risk of use and/or handling of this material when use and/or handling is contrary to label instructions.

Sumithrin® - Registered Trademark of Sumitomo Chemical Company, Ltd.

Duet® - Registered Trademark of Clarke Mosquito Control Products, Inc.

MANUFACTURED FOR:
 CLARKE MOSQUITO CONTROL PRODUCTS, INC.
 159 N. GARDEN AVENUE
 ROSELLE, ILLINOIS 60172

AVAILABLE PACKAGING: 2.5 GAL, 30 GAL, 55 GAL, 275 GAL TOTE

LOT NO.: Marked on Container Label

EPA REG. NO.: 1021-1795-8329

EPA EST. NO.: _____



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SECTION 1. Identification of the Substance/Mixture and of the Company

Product Identifier

Formulation Identifier: DUET[®] Dual-Action Adulticide

EPA Registration Number: 1021-1795-8329

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant identified uses: An insecticide for mosquito and vector control

Uses advised against: See product label for use restrictions

Details of the Supplier

Clarke Mosquito Control Products, Inc.
675 Sidwell Court
St. Charles, IL 60174 U.S.A.
+1 (630) 894-2000
Email: Clarke@clarke.com

Emergency Telephone Number

24 Hour MEDICAL Emergency: SafetyCall@: (888) 740-8712 or (952) 852-9509

24 Hour TRANSPORTATION Emergency: CHEMTREC@: (800)-424-9300

International: (703) 527-3887

SECTION 2. Hazards identification

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

Classification of the Substance or Mixture

Acute Toxicity (Inhalation): Category 4

Aspiration Toxicity: Category 1

Pictogram:



Signal Word: DANGER

Hazard Statements: Harmful if inhaled.

May be fatal if swallowed and enters airways.

Precautionary Statements:

PREVENTION: Avoid breathing mist/vapors/spray. Use only outdoors or in well-ventilated area.

RESPONSE: IF INHALED- Remove victim to fresh air and keep at rest in a position for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

IF SWALLOWED: Immediately call a poison center/doctor. Do NOT induce vomiting.

STORAGE: Store locked up in a well ventilated place. Keep container tightly closed.

DISPOSAL: Dispose of contents/container to an approved waste disposal plant.

Other Hazards Not Classifiable Under OSHA 2012 HCS - Not applicable



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Comments: This material is considered hazardous by the 2012 OSHA Hazard Communication Standard [29 CFR 1910.1200(a)(1), and the GHS

SECTION 3. Composition/Information on Ingredients

Components

Substance Name	CAS No.	Concentration % w/w
ETOC [®] (Prallethrin)	23031-36-9	1.0
SUMITHRIN [®] (d-Phenothrin)	26002-80-2	5.0
Piperonyl Butoxide	51-03-6	5.0
Petroleum Distillates, hydrotreated light	64742-47-8	10-20 *
White Mineral Oil	8042-47-5	50-75 *

* The exact percentage (concentration) of composition has been withheld as trade secret.

Ingredients not identified are non-hazardous and/or are not required to be disclosed pursuant to 29 CFR 1910.1200 (2012), and are withheld as trade secret.

SECTION 4. First Aid Measures

Description of First Aid Measures

Eye contact: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes then continue rinsing. Call a poison control center/doctor for treatment advice.

Skin Contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Ingestion: If swallowed, IMMEDIATELY call a poison control center or doctor for treatment advice. DO NOT give any liquid to the person. Do not induce vomiting unless told to do so by a poison control center or doctor. Never give anything by mouth to an unconscious person.

Inhalation: Remove affected person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

Indication of Immediate Medical Attention and Special Treatment

Notes to Physician: Contains Pyrethroids and Petroleum Distillates – vomiting may pose an aspiration hazard. For skin effects, a highly efficient therapeutic agent for Pyrethrin/Pyrethroid exposure is topical application of Tocopherol Acetate (Vitamin E).

SECTION 5. Fire-Fighting Measures

Extinguishing Media

Suitable Extinguishing Media: Water Fog, Carbon Dioxide (CO₂), Dry Chemical, foam

Unsuitable Extinguishing Media: Do not use water jet.

Special Hazards Arising From the Substance or Mixture

Specific Hazards: No information available.

Explosion data:

Sensitivity to Mechanical Impact: None

Sensitivity to static discharge: Yes, use proper bonding and/or grounding procedures.

Special Protective Equipment and Precautions for Fire-Fighters

Protection against fire: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Special Procedures: Treat as oil fire. Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Dike for later disposal. Use extinguishing agents



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appropriate for surrounding fire. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

SECTION 6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

General Precautions: Use appropriate protection (see section 8). Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment as required.

Environmental Precautions: Prevent product from entering into drains and waterways. Collect and dispose of this material and its container in accordance with national and regional regulations. If the product has contaminated surface water, inform the appropriate authorities.

Methods and Material for Containment and Cleaning Up

Methods for containment: Prevent further leakage of spillage if safe to do so. Move containers from spill area.

Small spill: Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Large Spill: Prevent entry into sewers, water courses, basements or confined areas. Dam up and soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

SECTION 7. Handling and Storage

Precautions for Safe Handling

Protective measures: Wear a long-sleeved shirt, long pants, shoes and socks. Take prudent precautions to avoid contact with skin, eyes, and clothing. Mechanical ventilation should be used when handling this product in enclosed spaces. Do not contaminate water, food or feedstuffs, by storage, handling, or by disposal.

Hygiene Measures: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store in a cool, dry place. Keep container closed. Always store pesticides in the original container. Store away from food and pet food. Keep out of reach of children.

Electrostatic Accumulation Hazard: This product contains petroleum distillates for which there is potential for the accumulation of static electricity. Consideration should be given to bonding and grounding of equipment during loading, unloading, and transfer of this product.

SECTION 8. Exposure Controls / Personal Protection

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

Control Parameters

Component Name	CAS No.	List	Type	Value
ETOC [®] (Prallethrin)	23031-36-9	OSHA; ACGIH		None
SUMITHRIN [®] (d-Phenothrin)	026002-80	OSHA; ACGIH		None
Piperonyl Butoxide	51-03-6	OSHA; ACGIH		None
Petroleum Distillates	64742-47-8	OSHA & ACGIH	TLV/TWA (as oil-mist, if generated)	5 mg/m ³



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Mineral Oil	8042-47-5	OSHA & ACGIH	PEL / TLV, TWA (oil mist, mineral)	5 mg/m ³
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Exposure controls

Engineering Controls: Use with adequate ventilation. Local exhaust ventilation may be necessary for some operations..

Individual Protection Measures, such as Personal Protection Equipment:

Eye Protection: Safety Glasses, Goggles or Face Shield. Take prudent precautions to avoid contact with eyes.

Skin Protection: Wear a long-sleeved shirt and long pants, shoes and socks.

Hand Protection: It is good industrial hygiene practice to minimize skin contact. If required or preferred, use suitable protective chemical resistant gloves such as latex, nitrile, or neoprene.

Respiratory Protection: None required. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

SECTION 9. Physical and Chemical Properties

Information on Basic Physical and Chemical Properties

Appearance:	Clear, yellow-colored liquid
Color:	1.0 on Gardner Scale
Odor:	Solvent odor
Odor Threshold:	No information available
pH:	Not applicable. Product is not miscible in water
Melting Point:	No information available
Freezing Point:	No information available
Initial Boiling Point:	No information available
Flash Point:	>93.3°C (>200°F) (Tag Closed Cup)
Evaporation Rate:	No information available
Flammability:	No information available
Explosion limits [U/L]:	No information available
Vapor Pressure:	No information available
Vapor Density (Air =1):	Heavier than air
Relative Density:	No information available
Specific Gravity (Water = 1)	0.860 @ 20°C (68°F)
Solubility:	Immiscible
Partition Coefficient:	No information available
Auto-Ignition Temperature:	No information available
Viscosity:	18 cPs @ 22.0°C (71.6°F) Brookfield
Decomposition Temperature:	No information available
Explosive Properties:	No information available
Oxidizing Properties:	No information available
VOC Content (%):	<1.000%

SECTION 10. Stability and Reactivity

Reactivity

No data available

Chemical Stability



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Stable under recommended normal storage conditions

Possibility of Hazardous Reactions

Hazardous Reactions: None under normal conditions
 Hazardous Polymerization: Hazardous polymerization does not occur

Conditions to avoid Extremes of temperature and direct sunlight

Incompatible materials Not compatible with strong acids and bases. Not compatible with oxidizing agents.

Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO₂)

SECTION 11. Toxicological information

Information on Likely Routes of Exposure

Routes of entry: Oral, Dermal, Inhalation

May be fatal if swallowed and enters airways due to petroleum distillate. Vomiting may cause aspiration pneumonia.

Information on Toxicological Effects

Acute Toxicity / Effects

Assessment of acute toxicity: Slightly toxic after ingestion. Relatively non-toxic after short-term inhalation. Moderately toxic after short term skin contact. Some or all of the toxicity data reported is bridged from a substantially similar formula.

Oral, (Rat) LD₅₀ >5,000 mg/kg

Dermal, (Rabbit) LD₅₀ >2,000 mg/kg

Inhalation, Rat LC₅₀ >2.04 mg/l (4 hours)

Skin Corrosion/Irritation: Slight irritation at 72 hours. Irritation Index = 0.92

Serious Eye Damage/Irritation: Irritation clearing in 24 hours.

Skin Sensitization: Negative; Not considered to be a dermal sensitizer (Buehler).

Conditions aggravated by exposure: None known

Chronic Toxicity / Effects

Assessment of repeated dose toxicity: No significant signs or symptoms indicative of any adverse health effects are expected to occur.

Germ Cell Mutagenicity This product has not been tested. The statement has been derived from the properties of the individual components. No data is available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not carcinogenic. This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Marginally higher incidences of benign liver tumors in mice were observed following lifetime high dose exposures to PBO. The significance of these observations is undetermined and under review. The doses at which tumors were observed for PBO greatly exceeded potential exposure from labeled uses.

Reproductive Effects: This product has not been tested. The statement has been derived from the properties of the individual components. No data is available to indicate product or any components present at greater than 0.1% produce a fertility impairing effect. No indication of a developmental toxic / teratogenic effect.

STOT – Single exposure Not classified

STOT – Repeated exposure Not classified

SECTION 12. Ecological Information

Ecotoxicity:

Product specific data is not available. Data referenced is in relation to active ingredients, d-Phenothrin and PBO



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Toxicity to Fish:	d-Phenothrin 96-hr Acute LC ₅₀ 16.7 µg/L (rainbow trout), 15.8 µg/L (bluegill sunfish) PBO: 96-hour Acute LC ₅₀ 6/12 ppm (rainbow trout) Prallethrin LC ₅₀ 0.012 mg/L (rainbow trout)
Toxicity to Aquatic Invertebrates:	d-Phenothrin 48-hr LC ₅₀ 4.4 µg/L <i>Daphnia magna</i> d-Phenothrin 48-hr LC ₅₀ 0.025 µg/L <i>Mysidopsis bahia</i> PBO: 96-hr LC ₅₀ 0.49 ppm, <i>Americamysis bahia</i> Prallethrin 48-hr EC ₅₀ 0.0062 mg/L <i>Daphnia</i>
Toxicity to Plants:	No data available
<u>Persistence and Degradability</u>	
Product specific data not available. Data referenced is in relation to the active ingredients, d-Phenothrin and PBO	
Biodegradability:	Not readily biodegradable (by OECD criteria)
Bioconcentration Factor:	d-Phenothrin: 592 (edible), 4,000 (non-edible) PBO: 2, 175 Prallethrin: no data available
Log Kow:	d-Phenothrin: 6 PBO: 4.95 Prallethrin: 4.49
Depuration:	d-Phenothrin, PBO: 2-4 days
Mobility in Soil:	d-Phenothrin has low water solubility and binds tightly to soil. Based on these properties, d-phenothrin is relatively immobile in soil and its potential to contaminate groundwater is low. PBO is not very soluble in water and adheres moderately to soil with organic matter. Prallethrin is not very water soluble and adheres moderately with organic material. The hazard for prallethrin to move off the site of application with rain or irrigation is rated moderate.

SECTION 13. Disposal Considerations

Waste Treatment and Disposal methods

Pesticide wastes are regulated. Consult product label for chemical substance and container disposal instructions. Avoid release to the environment. Improper disposal of excess product or rinsate is a violation of Federal law. If these wastes cannot be disposed or by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA regional office for guidance.

Container disposal: Rinse thoroughly in accordance with label instructions.

SECTION 14. Transport Information

DOT (US)

Proper Shipping Name: Agricultural Insecticide, N.O.I. Non-Hazardous
Primary Hazard Class/Division: Non-Hazardous

In Non-Bulk quantities (i.e., less than or equal to 119 Gallons / 450 Liters): This material is not regulated by the DOT as a hazardous material.

In Bulk Quantities (more than 119 Gallons / 450 Liters):

UN Number: UN3082

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (d-PHENOTHRIN)

Hazard Class: 9

Packing Group: III

Marine Pollutant: Yes

IMDG (Vessel)



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UN Number: UN3082
 Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (d-PHENOTHRIN)
 Hazard Class: 9
 Packing Group: III
 Marine Pollutant: Yes

ICAO/IATA (Air transport)

UN Number: UN3082
 Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (d-PHENOTHRIN)
 Hazard Class: 9
 Packing Group: III
 Marine Pollutant: Yes

SECTION 15. Regulatory Information

FIFRA Information: This chemical is a pesticide product regulated by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information for safety data sheet, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Signal word: CAUTION
 KEEP OUT OF REACH OF CHILDREN

PRECAUTIONARY STATEMENTS: HAZARDS TO HUMANS AND DOMESTIC ANIMALS: CAUTION. Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

Personal Protective Equipment (PPE): Mixers, loaders, applicators, and other handlers must wear the following: long-sleeve shirt, long pants, shoes and socks. See engineering controls for additional requirements.

User safety requirements: Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

User Safety Recommendations: Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside, then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

Engineering controls: Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)]. Human flagging is prohibited. Flagging to support aerial applications is limited to use of the Global Positioning System (GPS) or mechanical flaggers.

FIRST AID

If swallowed: Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or a doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

Note to physician: Contains petroleum distillates. Vomiting may cause aspiration pneumonia.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information regarding medical emergencies or pesticide incidents call 1-888-740-8712.

Other Federal Regulations

SARA TITLE III CLASSIFICATION

Section 302: None

Section 311/312: Immediate (acute) health hazard

Section 313: This product contains the following chemicals subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

CAS Number	Chemical Name	% by wt.
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26002-80-2	d-phenothrin	5.0
51-03-6	piperonyl butoxide	5.0

CERCLA RQ: None

U.S. California Proposition 65: Not listed

STATE RIGHT-TO-KNOW: National, state, provincial or local emergency planning, community right-to-know or other laws, regulations or ordinances may be applicable--consult applicable national, state, provincial or local laws.

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16. Other Information

DISCLAIMER OF LIABILITY: The information in this SDS was obtained from sources we believe to be reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared as is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

NFPA Health Hazards 2
 Flammability 1
 Instability 0
 Physical and Chemical Properties –

HMIS Health Hazards 1
 Flammability 1
 Physical Hazards 0
 Personal Protection X

[™] DUET is a Trademark of Clarke Mosquito Control Products, Inc.
[®] Sumithrin is a Registered Trademark of Sumitomo Company Ltd.
[®] ETOC is a Registered Trademark of Sumitomo Company Ltd.

End of document



NATULAR[®] T30

Mosquito Larvicide / 30-Day Tablet

Controls larvae of mosquitoes which may carry Dengue, Chikungunya, or Zika.

To be used in governmental mosquito control programs, by professional pest control operators, or in other mosquito or midge control operations.

Active Ingredient:	
Spinosad (a mixture of spinosyn A and spinosyn D)	8.33%
Other ingredients:	91.67%
Total	100.00%

U.S. Patent No. 5,362,634 and 5,496,931

Natular T30 is an 8.33% tablet. This product may absorb moisture; therefore, the weight of the tablet and percent by weight of active ingredient will vary with hydration.

Group

5

INSECTICIDE

Keep Out Of Reach Of Children

CAUTION

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

Harmful if swallowed. Causes moderate eye irritation. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Avoid contact with eyes or clothing. Wear protective eyewear (such as goggles, face shield, or safety glasses).

First Aid

If swallowed:	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything to an unconscious person.
If in eyes:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with warm water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-214-7753 for emergency medical treatment information.

Environmental Hazards

This product is toxic to aquatic organisms. Non-target aquatic invertebrates may be killed in waters where this pesticide is used. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Read all Directions for Use carefully before applying.

Product Information

Natular T30 is a product for killing mosquito and midge larvae. This product's active ingredient, spinosad, is biologically derived from the fermentation of *Saccharopolyspora spinosa*, a naturally occurring soil organism. Natular T30 releases effective levels of spinosad for up to 30 days under typical environmental conditions.

Release of spinosad is affected by the dissolution of the Natular T30 tablet. If tablets become covered by obstructions such as debris, vegetation, or loose sediment as a result of high rainfall or flow, normal dispersion of the active ingredient can be inhibited. Water flow may increase the dissolution of the tablet, thus reducing the residual life of the tablet. Inspect areas of water flow to determine appropriate retreatment intervals. To assure positive results, place Natular T30 tablets where they will not be swept away by flushing action.

Use Precautions

Integrated Pest Management (IPM) Programs

Natular T30 is intended to kill mosquito and midge larvae. Mosquitoes are best controlled when an IPM program is followed. Larval control efforts should be managed through habitat mapping, active adult and larval surveillance, and integrated with other control strategies such as source reduction, public education programs, harborage or barrier adult mosquito control applications, and targeted adulticide applications.

Insecticide Resistance Management (IRM)

Natular T30 contains a Group 5 insecticide.

Insect biotypes with acquired resistance to Group 5 insecticides may eventually dominate the insect population if appropriate resistance management strategies are not followed. Currently, only spinetoram and spinosad active ingredients are classified as Group 5 insecticides. Resistance to other insecticide groups is not likely to impact the effectiveness of this product. Spinosad may be used in rotation with all other labeled products in a comprehensive IRM program.

To minimize the potential for resistance development, the following practices are recommended:

- Base insecticide use on comprehensive IPM and IRM programs
- Do not use less than the labeled rates.
- Routinely evaluate applications for loss of effectiveness.
- Rotate with other labeled effective mosquito larvicides that have a different mode of action.
- In dormant rice fields, standing water within agricultural/crop sites, and permanent marine and freshwater sites, do not make more than 5 applications per year.
- Use insecticides with a different mode of action (different insecticide group) on adult mosquitoes so that both larvae and adults are not

- exposed to products with the same mode of action.
- Contact your local extension specialist, technical advisor, and/or Clarke representative for insecticide resistance management and/or IPM recommendations for the specific site and resistant pest problems.
- For further information or to report suspected resistance, you may contact your local Clarke representative by calling 800-323-5727.

Application

Proper application techniques help ensure adequate coverage and correct dosage necessary to obtain optimum kill of mosquito and midge larvae. Natular T30 tablets provide up to 30 days of residual kill. Natular T30 can be applied prior to flooding, on snow and ice in breeding sites prior to spring thaw, or at anytime after flooding in listed sites. Continue treating through the last brood of the season. Natular T30 tablets will be unaffected in dry down situations and will begin working again during subsequent wetting events until the tablet is exhausted. Note: Natular T30 has no effect on mosquitoes which have reached the pupal or adult stage prior to treatment.

Application Sites and Rates

Natular T30 tablets are designed to kill mosquitoes in small bodies of water. Do not apply to water intended for irrigation. Examples of application sites are:

Storm water drainage areas, sewers and catch basins, woodland pools, snow pools, roadside ditches, retention ponds, freshwater dredge spoils, tire tracks, rock holes, pot holes and similar areas subject to holding water.

Natural and manmade aquatic sites, fish ponds, ornamental ponds and fountains, other artificial water-holding containers, flooded crypts, transformer vaults, abandoned swimming pools, construction and other natural or manmade depressions.

Stream eddies, creek edges, detention ponds.

Freshwater swamps and marshes including mixed hardwood swamps, cattail marsh, common reed wetland, water hyacinth ponds, and similar freshwater areas with emergent vegetation.

Brackish water swamps and marshes, intertidal areas.

Sewage effluent, sewers, sewage lagoons, cesspools, oxidation ponds, septic ditches and tanks, animal waste lagoons and settling ponds, livestock runoff lagoons, wastewater impoundments associated with fruit and vegetable processing and similar areas.

Also for use in dormant rice fields (for application only during the interval between harvest and preparation of the field for the next cropping cycle) and in standing water where mosquito breeding occurs within agricultural areas: pastures/hay fields, rangeland, orchards, vineyards, and citrus groves. Do not apply to waters intended for irrigation.

For mosquito kill in non- or low-flow, shallow depressions (up to 2 feet in depth) treat on the basis of surface area placing 1 Natular T30 tablet per 100 sq ft.

Natular T30 Application Chart

Number of Tablets per 100 sq. ft.	Water Depth (ft)
1	0 - 2
2	2 - 4
3	4 - 6
4	6 - 8

For applications in storm water drainage areas, sewers and catch basins, place Natular T30 tablet into each catch basin.

For application sites connected by a water system, i.e., storm drains or catch basins, treat all of the water holding sites in the system to maximize the efficiency of the treatment program.

For application to small contained sites which may not be amenable to a rate of a single tablet per 100 sq ft, use 1 tablet per contained site (e.g., cesspools and septic tanks, transformer vaults, abandoned pools, and other small artificial water-holding containers).

Restriction: Do not apply to natural or artificial containers of water intended for consumption by people, animals, or livestock.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage and disposal.

Pesticide Storage: Store in a cool dry place in original container only.

Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Handling:

For Refillable Container: Refillable container. Refill this container with spinosad pesticide formulation only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

For Nonrefillable Container: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

WARRANTY: To the extent consistent with applicable law Clarke Mosquito Control Products, Inc. makes no warranty, express or implied, concerning the use of this product other than as indicated on the label. Buyer assumes all risk of use/handling of this material when use and/or handling is contrary to label instructions.

Natular® is a Registered Trademark of Clarke Mosquito Control Products, Inc.

Manufactured For:
Clarke Mosquito Control Products, Inc.
 159 North Garden Avenue
 Roselle, Illinois 60172 U.S.A.
 1-800-323-5727

EPA Reg. No.: 8329-85 EPA Est. No.: _____

Net Weight: _____ Lot No.: _____



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SECTION 1. Identification of the Substance/Mixture and of the Company

1.1 Product Identifier

Formulation Identifier: Natular™ T30

EPA Registration Number: 8329-85

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant Identified Uses: Insecticide for control of mosquito and midge larvae

Uses Advised Against: See product label for use restrictions

1.3 Details of the Supplier of the Safety Data Sheet

Clarke Mosquito Control Products, Inc.
675 Sidwell Court
St. Charles, IL 60174 U.S.A.
+1 (630) 894-2000
Email: Clarke@clarke.com

1.4 Emergency Telephone Number

24-Hour Medical Emergency: POISON CONTROL Toll-free (800) 214 – 7753

24-Hour Transportation Emergency: INFOTRAC (800) 535-5053

SECTION 2. Hazards identification

United States (US)
According to OSHA 29 CFR 1910.1200 HCS (2012)

2.2 Classification of the Substance or Mixture

Not Classified

Hazard Symbol(s): None

Signal Word: None

Hazard statements: None

Precautionary Statements: None

2.3 Other Hazards Not Classifiable Under OSHA 2012 HCS

See product label for any additional hazards

SECTION 3. Composition/Information on Ingredients

3.1 Components

Substance Name	CAS No.	Concentration % w/w
Spinosad:		8.33
Spinosyn A	131929-60-7	
Spinosyn D	131929-63-0	

Ingredients not identified are non-hazardous and/or are not required to be disclosed pursuant to 29 CFR 1910.1200 (2012), and are withheld as trade secret.

SECTION 4. First Aid Measures

4.1 Description of First Aid Measures



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Eye Contact: Hold eye open and rinse slowly and gently with warm water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes then continue rinsing. Call a poison control center/doctor for treatment advice.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed.

Eye Contact: This product may release nuisance dust in handling or use. Dust may cause slight transient (temporary) eye irritation.

4.3 Indication of Immediate Medical Attention and Special Treatment

Treatment: Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. For medical treatment information, contact the poison control hotline at 1-800-214-7753. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

SECTION 5. Fire-Fighting Measures

5.1 Extinguishing Media

Suitable Extinguishing Media: Water Fog, Carbon Dioxide (CO₂), Dry Chemical, Foam

Unsuitable Extinguishing Media: None known

5.2 Special Hazards Arising From the Substance or Mixture

Specific Hazards: Under fire conditions some components may decompose. Combustion products may include CO and NOx.

5.3 Special Protective Equipment and Precautions for Fire-Fighters

Protection Against Fire: Wear positive pressure, self-contained breathing apparatus and protective firefighting clothing (includes fire-fighting helmet, coat, pants, boots, and gloves).

Special Procedures: Fight fires from a protected location. Dike fire control water for later disposal. Keep container cool by spraying with water.

SECTION 6. Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

General Precautions: Use appropriate protection (see section 8)

Environmental Precautions: Prevent product from entering into drains and waterways. Collect and dispose of this material and its container in accordance with national and regional regulations. If the product has contaminated surface water, inform the appropriate authorities. See Section 12 for additional ecological information.

6.2 Methods and Material for Containment and Cleaning Up

Clean Up Methods: Collect all material with shovel, other instrument, or by hand while using appropriate personal protection equipment, and place in closable marked containers.

SECTION 7. Handling and Storage

7.1 Precautions for Safe Handling

Handling: Keep out of reach of children. Do not take internally. Avoid contact with skin and eyes.

Hygiene Measures: Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

7.2 Conditions for Safe Storage, Including Any Incompatibilities



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Storage: Product should be stored in compliance with local regulations. Store in a cool, dry, well-ventilated place in the original container. Protect from excessive heat and cold. Do not store near food, drink, animal feeding stuffs, pharmaceuticals, cosmetics or fertilizers. Keep out of reach of children.

SECTION 8. Exposure Controls / Personal Protection

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

8.1 Control Parameters

Component Name	CAS No.	List	Type	Value
Spinosyn A & Spinosyn D	131929-60-7 131929-63-0	DOW IHG	TWA	0.3 mg/m ³

8.2 Exposure controls

Engineering Controls: Use with adequate ventilation. Wash hands thoroughly after handling. Wash clothing before re-using.

Individual Protection Measures, such as Personal Protection Equipment:

Eye Protection: Safety Glasses, Goggles or Face Shield

Skin Protection: Wear suitable protective clothing

Hand Protection: It is good industrial hygiene practice to minimize skin contact. If required or preferred, use suitable protective chemical resistant gloves such as latex, nitrile, or neoprene.

Respiratory Protection: None required

SECTION 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Appearance:	Solid tablet
Color:	Tan/white
Odor:	Earthy scent
Odor Threshold:	Not Available
pH:	Not Determined
Melting Point:	Not Determined
Freezing Point:	Not Applicable
Initial Boiling Point:	Not Applicable
Flash Point:	Not Determined
Evaporation Rate:	Not Applicable
Flammability:	Not Determined
Explosion limits [U/L]:	Not Applicable
Vapor Pressure:	Not Applicable
Vapor Density:	Not Applicable
Relative Density:	1.9075 g/mL
Solubility:	Not Determined
Partition Coefficient:	Not Determined
Auto-Ignition Temperature:	Not Determined
Viscosity:	Not Applicable
Decomposition Temperature:	Not Available
Explosive Properties:	Not Available



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Oxidizing Properties: Not Available

SECTION 10. Stability and Reactivity

10.1 Reactivity

Not Available

10.2 Chemical Stability

Stable under normal conditions

10.3 Possibility of Hazardous Reactions

Hazardous Reactions: None under normal conditions

Hazardous Polymerization: Not known to occur

10.4 Conditions to Avoid

Protect from direct sunlight and excessive heat.

10.5 Incompatible Materials

Avoid contact with strong oxidizing agents, strong acids, strong bases

10.6 Hazardous Decomposition Products

None known under normal conditions of storage and use

SECTION 11. Toxicological Information

11.1 Information on Likely Routes of Exposure

Eye Contact: This product may release nuisance dust in handling or use. Dust may cause slight transient (temporary) eye irritation.

11.2 Information on Toxicological Effects

Acute Toxicity/Effects*

*Acute toxicity values are not available for Natular™ T30. Presented values are based on toxicity values of a product of similar composition and form.

Oral, Rat LD₅₀ : > 2,000 mg/kg-bw

Dermal, Rat LD₅₀ : > 4,000 mg/kg-bw

Inhalation, Rat LC₅₀ : > 5.0 g/m³

Skin Corrosion/Irritation: Not a skin irritant

Serious Eye Damage/Irritation: Slight irritant. Natular™ T30 is not classified as an eye irritant according to OSHA 2012 HCS

Skin Sensitization: Not a skin sensitizer

STOT – Single exposure: No data is available to indicate product or any components present at greater than 0.1% present a specific target organ toxicity hazard from single exposure.

Chronic Toxicity/Effects

Germ Cell Mutagenicity

This product has not been tested. No data is available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. Spinosad is not mutagenic.

Carcinogenicity:

This product does not contain any carcinogens as listed by OSHA, IARC, or NTP. Spinosad is not carcinogenic.



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Reproductive Effects:	No data is available to indicate product or any components present at greater than 0.1% cause reproductive or teratogenic toxicity. For Spinosad: in laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.
STOT – Repeated Exposure:	In animals, spinosad has been shown to cause vacuolation of cells in various tissues. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

SECTION 12. Ecological Information

12.1 Ecotoxicity

Product specific data is not available. Data referenced is in relation to the active ingredient, Spinosad. Spinosad is moderately toxic to aquatic organisms on an acute basis (LC₅₀/EC₅₀ between 1 and 10 mg/L in the most sensitive species tested).

Toxicity to Fish:	96-hr Acute LC ₅₀ 5.0 mg/L, Common Carp (<i>Cyprinus carpio</i>) 96-hr Acute LC ₅₀ 5.9 mg/L, Bluegill Sunfish (<i>Lepomis macrochirus</i>) 96-hr Acute LC ₅₀ 30 mg/L, Rainbow Trout (<i>Oncorhynchus mykiss</i>)
Toxicity to Aquatic Invertebrates:	48-hr Acute EC ₅₀ 1.5-14.0 mg/L, Water Flea (<i>Daphnia magna</i>) 48-hr LC ₅₀ > 7.9 mg/L, Mysid Shrimp (<i>Americamysis bahia</i>)
Toxicity to Aquatic Plants:	5-d EC ₅₀ 8.1 mg/L, Blue Green Algae (<i>Anabaena flos-aquae</i>)

12.1 Persistence and Degradability

Product specific data not available. Data referenced is in relation to the active ingredient, Spinosad.

Log K _{ow} :	Spinosyn A: 3.91; Spinosyn D: 4.38 (distilled water)
Bioaccumulation:	Bioconcentration potential is low (BCF < 100)
Bioconcentration Factor:	Spinosyn A: 19; Spinosyn D: 33 mL/g (fish)
Mobility in Soil:	Potential for mobility in soil is low (K _{oc} between 500 and 2000)
Partition Coefficient, K _{oc} :	701

SECTION 13. Disposal Considerations

13.1 Waste Treatment and Disposal methods

Consult product label for disposal instructions. Avoid release to the environment. Improper disposal of excess product or rinsate is a violation of the Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA regional office for guidance.

SECTION 14. Transport Information

14.1 DOT (US)	Not regulated (Bulk and Non-Bulk Quantities)
14.2 IMDG (Vessel)	
UN Number:	3077
Hazard Class:	9
Packing Group:	III
Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE SOLID, N.O.S. (Spinosad)
Marine Pollutant:	Yes
14.3 ICAO/IATA (Air transport)	



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UN Number: 3077
 Hazard Class: 9
 Packing Group: III
 Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE SOLID, N.O.S. (Spinosad)
 Environmental Hazard: Yes

SECTION 15. Regulatory Information

FIFRA Information: This chemical is a pesticide product regulated by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information for safety data sheet, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Signal Word: CAUTION
 Keep Out of Reach of Children

PRECAUTIONARY STATEMENTS Hazards to Humans and Domestic Animals: Harmful if swallowed. Causes moderate eye irritation. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Avoid contact with eyes or clothing. Wear protective eyewear (such as goggles, face shield, or safety glasses).

First Aid	
If swallowed:	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything to an unconscious person.
If in eyes:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with warm water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-214-7753 for emergency medical treatment information.	

Other Federal Regulations

SARA TITLE III CLASSIFICATION

Section 302: None
 Section 311/312: Immediate (acute) hazard
 Section 313: None

CERCLA RQ: None

OSHA HAZARD COMMUNICATION STANDARD: This product is not considered a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

U.S. California Proposition 65: Not listed

STATE RIGHT-TO-KNOW: National, state, provincial or local emergency planning, community right-to-know or other laws, regulations or ordinances may be applicable--consult applicable national, state, provincial or local laws.

SECTION 16. Other Information

DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources we believe to be reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared as is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

™ NATULAR is a Trademark of Clarke Mosquito Control Products, Inc.

End of document



NATULAR[®] XRT

Mosquito Larvicide / Extended Release Tablet

Controls larvae of mosquitoes which may carry Dengue, Chikungunya, and Zika.

To be used in governmental mosquito control programs, by professional pest control operators, or in other mosquito or midge control operations.

Active Ingredient (dry weight basis):	
Spinosad (a mixture of spinosyn A and spinosyn D)	6.25%
Other ingredients	93.75%
Total	100.00%

U.S. Patent No. 5,362,634 and 5,496,931

Natular XRT is a 6.25% tablet. This product may absorb moisture; therefore, the weight of the tablet and percent by weight of active ingredient will vary with hydration.

Group	5	INSECTICIDE
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Keep Out Of Reach Of Children

CAUTION

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

Harmful if swallowed. Causes moderate eye irritation. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Avoid contact with eyes or clothing. Wear protective eyewear (such as goggles, face shield, or safety glasses).

First Aid

If swallowed:	<ul style="list-style-type: none"> Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything to an unconscious person.
If in eyes:	<ul style="list-style-type: none"> Hold eye open and rinse slowly and gently with warm water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-214-7753 for emergency medical treatment information.

Environmental Hazards

This product is toxic to aquatic organisms. Non-target aquatic invertebrates may be killed in waters where this pesticide is used. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Read all Directions for Use carefully before applying.

Product Information

Natular XRT is a product for killing mosquito and midge larvae. This product's active ingredient, spinosad, is biologically derived from the fermentation of *Saccharopolyspora spinosa*, a naturally occurring soil organism. Natular XRT tablets release effective levels of spinosad over a period up to 180 days in mosquito breeding sites. The tablet is designed for easy application to catch basins.

Release of spinosad is affected by the dissolution of the Natular XRT tablet. If tablets become covered by obstructions such as debris, vegetation, or loose sediment as a result of high rainfall or flow, normal dispersion of the active ingredient can be inhibited. Water flow may increase the dissolution of the tablet, thus reducing the residual life of the tablet. Inspect areas of water flow to determine appropriate re-treatment intervals. To assure positive results, place Natular XRT tablets where they will not be swept away by flushing action.

Use Precautions

Integrated Pest Management (IPM) Programs

Natular XRT is intended to kill mosquito and midge larvae. Mosquitoes are best controlled when an IPM program is followed. Larval control efforts should be managed through habitat mapping, active adult and larval surveillance, and integrated with other control strategies such as source reduction, public education programs, harborage or barrier adult mosquito control applications, and targeted adulticide applications.

Insecticide Resistance Management (IRM)

Natular XRT contains a Group 5 insecticide. Insect biotypes with acquired resistance to Group 5 insecticides may eventually dominate the insect population if appropriate resistance management strategies are not followed. Currently, only spinetoram and spinosad active ingredients are classified as Group 5 insecticides. Resistance to other insecticide groups is not likely to impact the effectiveness of this product. Spinosad may be used in rotation with all other labeled products in a comprehensive IRM program.

To minimize the potential for resistance development, the following practices are recommended:

- Base insecticide use on comprehensive IPM and IRM programs.
- Do not use less than the labeled rates.
- Routinely evaluate applications for loss of effectiveness.
- Rotate with other labeled effective mosquito larvicides that have a different mode of action.
- In dormant rice fields, standing water within agricultural/crop sites, and permanent marine and freshwater sites, do not make more than 3 applications per year.
- Use insecticides with a different mode of action (different insecticide group) on adult mosquitoes so that both larvae and adults are not exposed to products with the same mode of action.
- Contact your local extension specialist, technical advisor, and/or Clarke representative for insecticide resistance management and/or IPM recommendations for the specific site and resistant pest problems.
- For further information or to report suspected resistance, you may contact your local Clarke representative by calling 800-323-5727.

Application

Proper application techniques help ensure adequate coverage and correct dosage necessary to obtain optimum kill of mosquito and midge larvae. Natular XRT tablets can be applied prior to flooding, on snow and ice in breeding sites prior to spring thaw, or at any time after flooding in listed sites. Under normal conditions, one application will last the entire mosquito season, or up to 180 days, whichever is shorter. Natular XRT tablets will be unaffected in dry down situations and will begin working again during subsequent wetting events until the tablet is exhausted. Note: Natular XRT has no effect on mosquitoes which have reached the pupal or adult stage prior to treatment.

Application Sites and Rates

Natular XRT tablets are designed to kill mosquitoes in natural and manmade depressions that hold water. Do not apply to water intended for irrigation.

Examples of application sites are:

Storm water drainage areas, sewers and catch basins, woodland pools, snow pools, roadside ditches, retention ponds, freshwater dredge spoils, tire tracks, rock holes, pot holes and similar areas subject to holding water.

Natural and manmade aquatic sites, fish ponds, ornamental ponds and fountains, other artificial water-holding containers, flooded crypts, transformer vaults, abandoned swimming pools, construction and other natural or man-made depressions.

Stream eddies, creek edges, detention ponds.

Freshwater swamps and marshes including mixed hardwood swamps, cattail marsh, common reed wetland, water hyacinth ponds, and similar freshwater areas with emergent vegetation.

Brackish water swamps and marshes, intertidal areas.

Sewage effluent, sewers, sewage lagoons, cesspools, oxidation ponds, septic ditches and tanks, animal waste lagoons and settling ponds, livestock runoff lagoons, wastewater impoundments associated with fruit and vegetable processing and similar areas.

Also for use in dormant rice fields (for application only during the interval between harvest and preparation of the field for the next cropping cycle) and in standing water within agricultural areas where mosquito breeding occurs: pastures/hay fields, rangeland, orchards, vineyards, and citrus groves. Do not apply to waters intended for irrigation.

For mosquito kill in non- or low-flow, shallow depressions (up to 2 feet in depth) treat on the basis of surface area placing 1 Natular XRT tablet per 100 sq ft. Place tablets in the lowest areas of mosquito breeding sites to maintain continuous kill as the site alternately floods and dries up.

Natular XRT Application Chart

Number of Tablets per 100 sq. ft.	Water Depth (ft)
1	0 - 2
2	2 - 4
3	4 - 6
4	6 - 8

For applications in storm water drainage areas, sewers and catch basins, place 1 Natular XRT tablet into each catch basin.

For application sites connected by a water system, i.e., storm drains or catch basins, treat all of the water holding sites in the system to maximize the efficiency of the treatment program.

For application to small contained sites which may not be amenable to a rate of a single tablet per 100 sq ft, use 1 tablet per contained site (e.g., cesspools and septic tanks, transformer vaults, abandoned pools, and other small artificial water-holding containers).

Restriction: Do not apply to natural or artificial containers of water intended for consumption by people, animals, or livestock.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage and disposal.

Pesticide Storage: Store in a cool dry place in original container only.

Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Handling:

For Refillable Container: Refillable container. Refill this container with spinosad pesticide formulation only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

For Nonrefillable Container: Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

WARRANTY: To the extent consistent with applicable law, Clarke Mosquito Control Products, Inc. makes no warranty, express or implied, concerning the use of this product other than as indicated on the label. Buyer assumes all risk of use/handling of this material when use and/or handling is contrary to label instructions.

Natular® is a Registered Trademark of Clarke Mosquito Control Products, Inc.

Manufactured For:
Clarke Mosquito Control Products, Inc.
 159 North Garden Avenue
 Roselle, Illinois 60172 U.S.A.
 1-800-323-5727

EPA Reg. No.: 8329-84

EPA Est. No.: _____

Net Weight: _____

Lot No.: _____



SAFETY DATA SHEET

NATULAR™ XRT

Effective Date: 1 June 2015

v.01

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SECTION 1. Identification of the Substance/Mixture and of the Company

1.1 Product Identifier

Formulation Identifier: Natular™ XRT

EPA Registration Number: 8329-84

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant Identified Uses: Insecticide for control of mosquito and midge larvae

Uses Advised Against: See product label for use restrictions

1.3 Details of the Supplier of the Safety Data Sheet

Clarke Mosquito Control Products, Inc.
675 Sidwell Court
St. Charles, IL 60174 U.S.A.
+1 (630) 894-2000
Email: Clarke@clarke.com

1.4 Emergency Telephone Number

24-Hour Medical Emergency: POISON CONTROL Toll-free (800) 214 – 7753

24-Hour Transportation Emergency: INFOTRAC (800) 535-5053

SECTION 2. Hazards identification

United States (US)
According to OSHA 29 CFR 1910.1200 HCS (2012)

2.2 Classification of the Substance or Mixture

Not Classified

Hazard Symbol(s): None

Signal Word: None

Hazard statements: None

Precautionary Statements: None

2.3 Other Hazards Not Classifiable Under OSHA 2012 HCS

See product label for any additional hazards

SECTION 3. Composition/Information on Ingredients

3.1 Components

Substance Name	CAS No.	Concentration % w/w
Spinosad:		6.25
Spinosyn A	131929-60-7	
Spinosyn D	131929-63-0	

Ingredients not identified are non-hazardous and/or are not required to be disclosed pursuant to 29 CFR 1910.1200 (2012), and are withheld as trade secret.

SECTION 4. First Aid Measures

4.1 Description of First Aid Measures



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NATULAR™ XRT

Effective Date: 1 June 2015

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Eye Contact: Hold eye open and rinse slowly and gently with warm water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes then continue rinsing. Call a poison control center/doctor for treatment advice.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed.

Eye Contact: This product may release nuisance dust in handling or use. Dust may cause slight transient (temporary) eye irritation.

4.3 Indication of Immediate Medical Attention and Special Treatment

Treatment: Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. For medical treatment information, contact the poison control hotline at 1-800-214-7753. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

SECTION 5. Fire-Fighting Measures

5.1 Extinguishing Media

Suitable Extinguishing Media: Water Fog, Carbon Dioxide (CO₂), Dry Chemical, Foam

Unsuitable Extinguishing Media: None known

5.2 Special Hazards Arising From the Substance or Mixture

Specific Hazards: Under fire conditions some components may decompose. Combustion products may include CO and NOx.

5.3 Special Protective Equipment and Precautions for Fire-Fighters

Protection Against Fire: Wear positive pressure, self-contained breathing apparatus and protective firefighting clothing (includes fire-fighting helmet, coat, pants, boots, and gloves).

Special Procedures: Fight fires from a protected location. Dike fire control water for later disposal. Keep container cool by spraying with water.

SECTION 6. Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

General Precautions: Use appropriate protection (see section 8)

Environmental Precautions: Prevent product from entering into drains and waterways. Collect and dispose of this material and its container in accordance with national and regional regulations. If the product has contaminated surface water, inform the appropriate authorities. See Section 12 for additional ecological information.

6.2 Methods and Material for Containment and Cleaning Up

Clean Up Methods: Collect all material with shovel, other instrument, or by hand while using appropriate personal protection equipment, and place in closable marked containers.

SECTION 7. Handling and Storage

7.1 Precautions for Safe Handling

Handling: Keep out of reach of children. Do not take internally. Avoid contact with skin and eyes.

Hygiene Measures: Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

7.2 Conditions for Safe Storage, Including Any Incompatibilities



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Storage: Product should be stored in compliance with local regulations. Store in a cool, dry, well-ventilated place in the original container. Protect from excessive heat and cold. Do not store near food, drink, animal feeding stuffs, pharmaceuticals, cosmetics or fertilizers. Keep out of reach of children.

SECTION 8. Exposure Controls / Personal Protection

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

8.1 Control Parameters

Component Name	CAS No.	List	Type	Value
Spinosyn A & Spinosyn D	131929-60-7 131929-63-0	DOW IHG	TWA	0.3 mg/m ³

8.2 Exposure controls

Engineering Controls: Use with adequate ventilation. Wash hands thoroughly after handling. Wash clothing before re-using.

Individual Protection Measures, such as Personal Protection Equipment:

Eye Protection: Safety Glasses, Goggles or Face Shield

Skin Protection: Wear suitable protective clothing

Hand Protection: It is good industrial hygiene practice to minimize skin contact. If required or preferred, use suitable protective chemical resistant gloves such as latex, nitrile, or neoprene.

Respiratory Protection: None required

SECTION 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Appearance:	Solid tablet
Color:	Tan/white
Odor:	Earthy scent
Odor Threshold:	Not Available
pH:	Not Determined
Melting Point:	Not Determined
Freezing Point:	Not Applicable
Initial Boiling Point:	Not Applicable
Flash Point:	Not Determined
Evaporation Rate:	Not Applicable
Flammability:	Not Determined
Explosion limits [U/L]:	Not Applicable
Vapor Pressure:	Not Applicable
Vapor Density:	Not Applicable
Relative Density:	1.766 g/mL
Solubility:	Not Determined
Partition Coefficient:	Not Determined
Auto-Ignition Temperature:	Not Determined
Viscosity:	Not Applicable
Decomposition Temperature:	Not Available
Explosive Properties:	Not Available



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Oxidizing Properties: Not Available

SECTION 10. Stability and Reactivity

10.1 Reactivity

Not Available

10.2 Chemical Stability

Stable under normal conditions

10.3 Possibility of Hazardous Reactions

Hazardous Reactions: None under normal conditions

Hazardous Polymerization: Not known to occur

10.4 Conditions to Avoid

Protect from direct sunlight and excessive heat.

10.5 Incompatible Materials

Avoid contact with strong oxidizing agents, strong acids, strong bases

10.6 Hazardous Decomposition Products

None known under normal conditions of storage and use

SECTION 11. Toxicological Information

11.1 Information on Likely Routes of Exposure

Eye Contact: This product may release nuisance dust in handling or use. Dust may cause slight transient (temporary) eye irritation.

11.2 Information on Toxicological Effects

Acute Toxicity/Effects*

*Acute toxicity values are not available for Natular™ XRT. Presented values are based on toxicity values of a product of similar composition and form.

Oral, Rat LD₅₀ : > 2,000 mg/kg-bw

Dermal, Rat LD₅₀ : > 4,000 mg/kg-bw

Inhalation, Rat LC₅₀ : > 5.0 g/m³

Skin Corrosion/Irritation: Not a skin irritant

Serious Eye Damage/Irritation: Slight irritant. Natular™ XRT is not classified as an eye irritant according to OSHA 2012 HCS

Skin Sensitization: Not a skin sensitizer

STOT – Single exposure: No data is available to indicate product or any components present at greater than 0.1% present a specific target organ toxicity hazard from single exposure.

Chronic Toxicity/Effects

Germ Cell Mutagenicity

This product has not been tested. No data is available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. Spinosad is not mutagenic.

Carcinogenicity:

This product does not contain any carcinogens as listed by OSHA, IARC, or NTP. Spinosad is not carcinogenic.



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Reproductive Effects:	No data is available to indicate product or any components present at greater than 0.1% cause reproductive or teratogenic toxicity. For Spinosad: in laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.
STOT – Repeated Exposure:	In animals, spinosad has been shown to cause vacuolation of cells in various tissues. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

SECTION 12. Ecological Information

12.1 Ecotoxicity

Product specific data is not available. Data referenced is in relation to the active ingredient, Spinosad. Spinosad is moderately toxic to aquatic organisms on an acute basis (LC₅₀/EC₅₀ between 1 and 10 mg/L in the most sensitive species tested).

Toxicity to Fish:	96-hr Acute LC ₅₀ 5.0 mg/L, Common Carp (<i>Cyprinus carpio</i>) 96-hr Acute LC ₅₀ 5.9 mg/L, Bluegill Sunfish (<i>Lepomis macrochirus</i>) 96-hr Acute LC ₅₀ 30 mg/L, Rainbow Trout (<i>Oncorhynchus mykiss</i>)
Toxicity to Aquatic Invertebrates:	48-hr Acute EC ₅₀ 1.5-14.0 mg/L, Water Flea (<i>Daphnia magna</i>) 48-hr LC ₅₀ > 7.9 mg/L, Mysid Shrimp (<i>Americamysis bahia</i>)
Toxicity to Aquatic Plants:	5-d EC ₅₀ 8.1 mg/L, Blue Green Algae (<i>Anabaena flos-aquae</i>)

12.1 Persistence and Degradability

Product specific data not available. Data referenced is in relation to the active ingredient, Spinosad.

Log K _{ow} :	Spinosyn A: 3.91; Spinosyn D: 4.38 (distilled water)
Bioaccumulation:	Bioconcentration potential is low (BCF < 100)
Bioconcentration Factor:	Spinosyn A: 19; Spinosyn D: 33 mL/g (fish)
Mobility in Soil:	Potential for mobility in soil is low (K _{oc} between 500 and 2000)
Partition Coefficient, K _{oc} :	701

SECTION 13. Disposal Considerations

13.1 Waste Treatment and Disposal methods

Consult product label for disposal instructions. Avoid release to the environment. Improper disposal of excess product or rinsate is a violation of the Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA regional office for guidance.

SECTION 14. Transport Information

14.1 DOT (US)	Not regulated (Bulk and Non-Bulk Quantities)
14.2 IMDG (Vessel)	
UN Number:	3077
Hazard Class:	9
Packing Group:	III
Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE SOLID, N.O.S. (Spinosad)
Marine Pollutant:	Yes
14.3 ICAO/IATA (Air transport)	



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UN Number: 3077
 Hazard Class: 9
 Packing Group: III
 Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE SOLID, N.O.S. (Spinosad)
 Environmental Hazard: Yes

SECTION 15. Regulatory Information

FIFRA Information: This chemical is a pesticide product regulated by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information for safety data sheet, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Signal Word: CAUTION
 Keep Out of Reach of Children

PRECAUTIONARY STATEMENTS Hazards to Humans and Domestic Animals: Harmful if swallowed. Causes moderate eye irritation. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Avoid contact with eyes or clothing. Wear protective eyewear (such as goggles, face shield, or safety glasses).

First Aid	
If swallowed:	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything to an unconscious person.
If in eyes:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with warm water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-214-7753 for emergency medical treatment information.	

Other Federal Regulations

SARA TITLE III CLASSIFICATION

Section 302: None
 Section 311/312: Immediate (acute) hazard
 Section 313: None

CERCLA RQ: None

OSHA HAZARD COMMUNICATION STANDARD: This product is not considered a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

U.S. California Proposition 65: Not listed

STATE RIGHT-TO-KNOW: National, state, provincial or local emergency planning, community right-to-know or other laws, regulations or ordinances may be applicable--consult applicable national, state, provincial or local laws.

SECTION 16. Other Information

DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources we believe to be reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared as is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

™ NATULAR is a Trademark of Clarke Mosquito Control Products, Inc.

End of document



DUET™

DUAL-ACTION EFFICACY

Adulticide for Mosquito Control

Delivers more control of natural mosquito populations

Versatile in a range of operational conditions

Effective even at lower rates of application



TWO ACTIVE INGREDIENTS FOR GREATER STRENGTH AND VERSATILITY

Duet,™ an advanced dual-action mosquito adulticide, combines the proven efficacy of Sumithrin® (the active ingredient found in Anvil®) plus the exceptional knock-down of prallethrin. Together, these two active ingredients provide you a unique, effective and faster way to control mosquitoes.

DUET'S BENEFITS >>

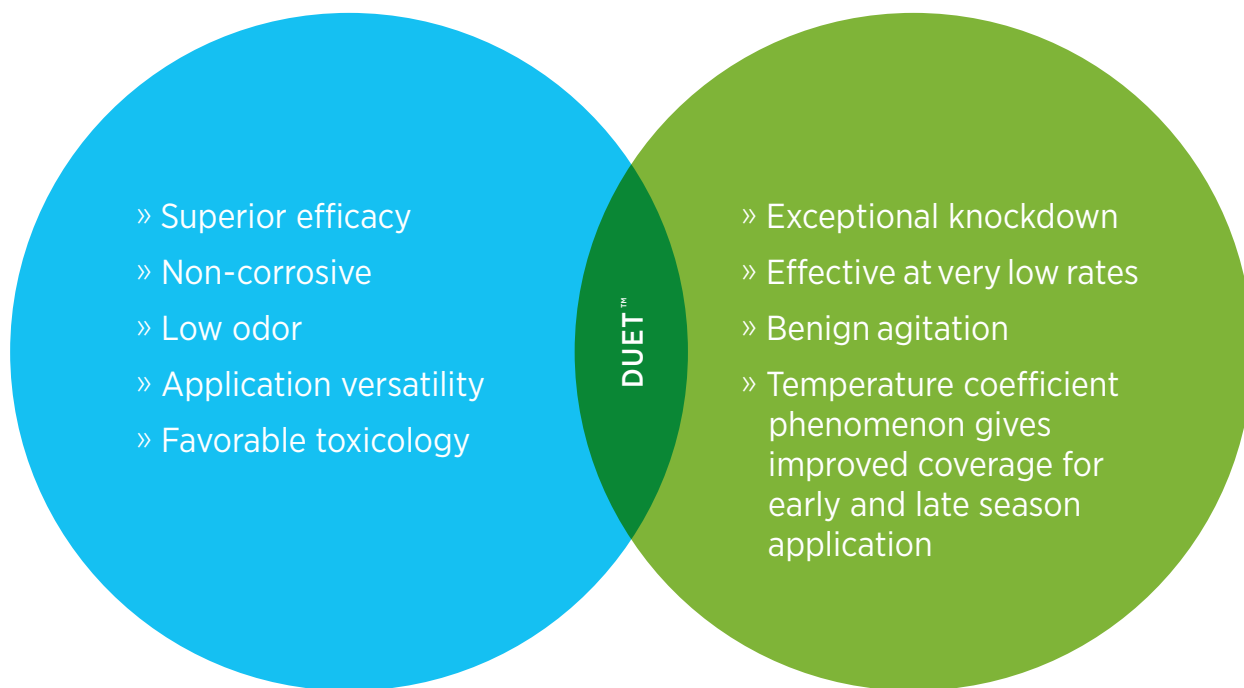
Delivers more control of natural mosquito populations

Versatile in a range of operational conditions

Effective at even low rates of application

SUMITHRIN

PRALLETHRIN

**Stronger and Faster**

With the combination of Sumithrin and prallethrin, Duet effectively controls more mosquitoes more quickly. Duet has a faster knockdown than other products. In addition, despite its potent combination of active ingredients, Duet has approximately the same toxicity profile as Anvil®. This offers increased efficacy with the *same low toxicity*.

Biodegradable

More than a generation ago, scientists created synthetic pyrethroids, which emulate naturally occurring pyrethrins, found in chrysanthemum flowers. Two of these synthetic pyrethroids — Sumithrin and prallethrin (brand name ETOC®) — kill mosquitoes effectively, yet biodegrade rapidly in the presence of sunlight and/or microorganisms. The two actives with the synergist piperonyl butoxide (PBO) yield superior performance for mosquito control.

Active Ingredients:

Prallethrin (1%)
(RS)-2-methyl-4-oxo-3-(2-propynyl)cyclopent-2-enyl-(1RS)-cis, transchrysanthemate

Sumithrin (5%)
3-Phenoxybenzyl-(1RS, 3RS; 1RS, 3SR)-2, 2-dimethyl-3-(2-methylprop-1-enyl)cyclopropanecarboxylate

Piperonyl Butoxide (5%)

Other Ingredients (89%)

BENIGN AGITATION: EXCELLENT KNOCKDOWN AND GREATER CONTROL

Field trial and cage observations have shown that **Duet™ causes benign agitation — a non-biting excitation of mosquitoes.** This has the potential to draw mosquitoes from a resting state, causing more of them to come in contact with droplets and increase efficacy. As a result, you can have greater control on a larger percentage of the total mosquito population.

Benign Agitation Studies Prove Duet's Effectiveness

In laboratory studies,* benign agitation was demonstrated by looking at the active ingredients in Duet, separately.

Ultra low volume (ULV) droplets were introduced into a wind tunnel. The response of resting mosquitoes was video recorded and movement/flight pattern observed before, during, and after exposure. Mosquitoes exposed to insecticides moved faster when sprayed. Prallethrin produced increased flight activity during spray while Sumithrin (the other active ingredient in Duet) produced increased activity during the post-spray period.

In another study** that showed the formulated product of Duet increases the percentage of resting mosquitoes to take flight post spray, it was also demonstrated that mosquitoes remain in flight longer than with competitive formulations.

The bottom line: With Duet, more resting mosquitoes take flight to come in contact with more droplets, thus improving the efficacy of the application.

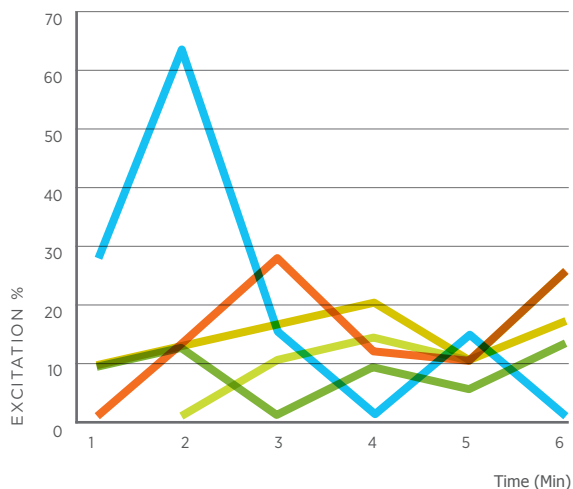
*Study by Gary G. Clark and Sandra A. Allan of the CMAVE, USDA, Gainesville, FL; Miriam F. Cooperband with APHIS, USDA, Otis ANGB, MA, and William Jany, Clarke. Tests conducted with female *Culex quinquefasciatus* using a range of adulticides with different active ingredients.

**Work by Gary Benzon, Benzon Research, Carlisle, PA.

Key:

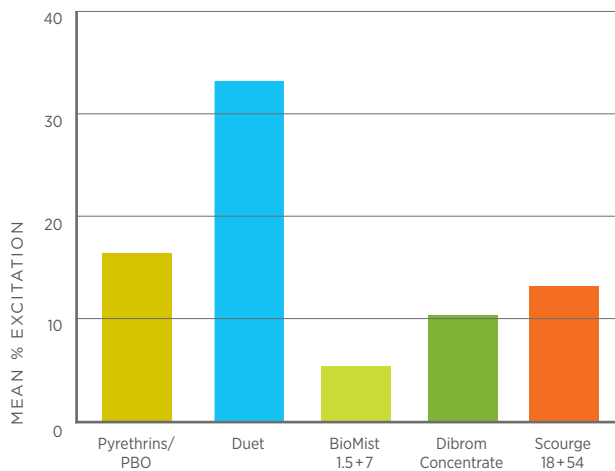
- Duet™
- Py / PBO
- Dibrom Concentrate
- Scourge
- BioMist

Excitation Over Time



Source: G. Benzon, Benzon Research, Carlisle, PA.

5 Minutes After Exposure



Source: Dr. Hajime Hirai, Sumi World, 1997

Comparative Insecticidal Activity

COMPOUND	LD50 (µG / INSECT) MOSQUITO ²
Prallethrin	0.0032
Pyrethrins	0.022

²Culex pipiens pallens, female adult

Prallethrin exhibits high killing activity against mosquitoes compared to pyrethrins.

We believe that an important part of being an environmental steward is product rotation. Product rotation maximizes the effectiveness of every program by preventing cross-resistance.

To help select products for rotation in your program, visit clarke.com/mosquitocontrolproducts to view our full line of product offerings.



PROFILE OF AN ADVANCED ADULTICIDE OPTION

Product Density

ACTIVE INGREDIENT	SUMITHRIN	PRALLETHRIN	DUET
Specific Gravity	1.060	1.03	.87
Molecular Weight	350.5	300.4	—
Viscosity	—	—	13.4 ^{CP} @24 C
Vapor Pressure	1.4 x 10 ⁻⁷ mm/Hg @21.4°C	3.5 x 10 ⁻⁵ mm/Hg @21.4°C	—

Toxicology

STUDY	SUMITHRIN	PRALLETHRIN
96 Hr Acute Flow Through LC50 Rainbow Trout	17 µg/l	12 µg/l
96 Hr Acute Flow Through LC50 Bluegill	18 µg/l	22 µg/l
48 Hr Acute EC 50 <i>Daphnia magna</i>	4.3 µg/l	6.2 µg/l
Honey Bee 48 Hr Acute Contact LD50	0.064 µg/bee	0.028 µg/bee
Acute Oral LC50 Bobwhite Quail	2510 mg/kg	1171 mg/kg

Acute Toxicology

SPECIES	DUET
Oral LD50 (rats)	> 5000 mg/kg
Dermal LD50 (rats)	> 5000 mg/kg
Eye Irritation (rabbits)	Minimal irritation
Inhalation LC50 (rats)	> 2.04 mg/l
Skin Sensitization (guinea pig)	Negative

Environmental Toxicity

In Sunlight: The active ingredients in Duet™ are photolabile. The molecules easily decompose in the presence of sunlight. The half-lives of Sumithrin and prallethrin in water in the presence of light range from 9.1 to 13.9 hours. The degradation products of Sumithrin and prallethrin are non-persistent. Moderately rapid aerobic and anaerobic soil degradation was found in the absence of sunlight.

In Soil: Sumithrin and prallethrin are not readily transported from the site of application. Neither Sumithrin nor prallethrin bioaccumulates.

Eco-Tier™ Ranking:

The Clarke Eco-Tier™ Index offers three tiers of products, equipment and services ranked by their impact on the environment. Duet is ranked as an “Advanced” product.



CAGED TRIAL RESULTS

SUPERIOR KNOCKDOWN AND CONTROL

Initial Field Research

Initial field research for Duet™ has demonstrated excellent results. Tests were conducted involving the following species:

Michigan: *An. punctipennis*, *Oc. trivittatus* and *Ae. vexans*

Florida: *Oc. taeniorhynchus*

Illinois: *Coq. perturbans*, *Oc. trivittatus* and *Culex restuans*

.....

Protocols:

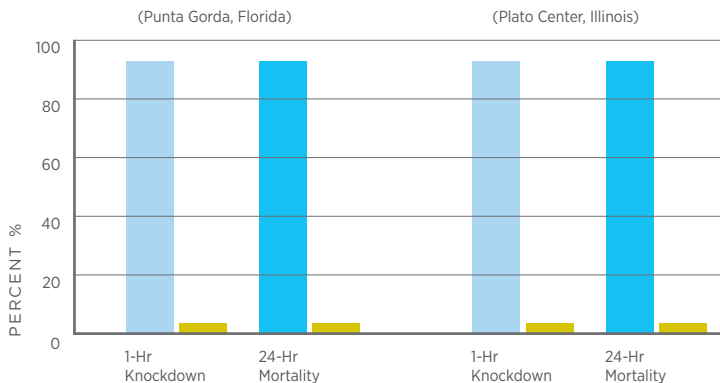
- » Mosquitoes collected via CO₂ baited ABC traps
- » Mouth-aspirate mosquitoes
- » Cages placed @100-200' intervals
- » 10 min. exposure then transferred to holding cages
- » Mosquitoes fed 10% sugar-water solution
- » Monitor knockdown @1-Hr, and 24-Hr mortality
- » Controls handled same as treated mosquitoes

Key:

- 24-Hour Mortality
- 1-Hour Knockdown
- Control

Duet Ground ULV @150'

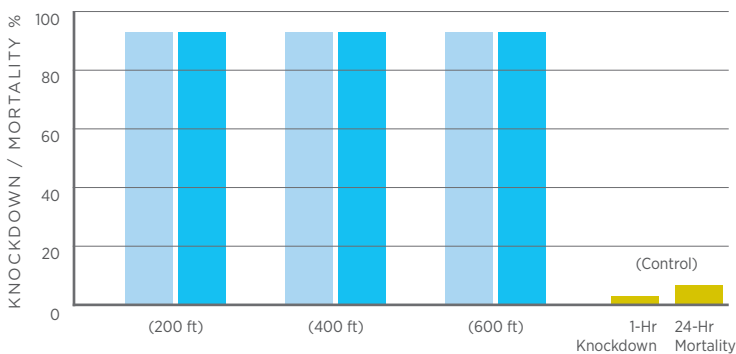
Rate: 0.41 oz/acre rate



Duet ULV at Long Distances

Location: Saginaw, MI - 9/1/06

Rate: 0.0012 ai/acre Sumithrin and 0.0003 lbs/acre prallethrin



Even at distances up to 600ft from the spray nozzle, Duet demonstrates superior knockdown and control.

APPLICATION METHODS OPTIMIZED FOR YOUR EQUIPMENT

Duet™ has been proven effective whether applied by air or ground (truck, ATV, backpack). Optimized for all standard ULV application equipment and nozzles, Duet is non-corroding to your application apparatus.

Applying Duet by Air

Aerial applications can be completed with fixed wing or rotary aircraft. Based on your program needs, Duet can be applied at a range of .41 to 1.23 fl. oz/acre. Droplet VMD (volume median diameter) should be optimized between 25–30 microns. In wind tunnel atomization studies, Duet has shown to effectively produce this droplet size range when sprayed through equipment that has been correctly calibrated.

To Optimize Your Aerial Application:



Select the Proper Nozzle

Refer to the table to achieve the optimized less-than-30-micron droplet VMD. Some of the best nozzles for Duet usage are rotary (e.g. Beecomist or Micronair). Note that flat fan nozzles require orientation 130 degrees into the wind, and may not produce droplets within the desired spectrum when aircraft travel below 170 mph.

AIRCRAFT TYPE	NOZZLE TYPE	SIZE	ANGLE
Fixed wing	Flat fan	80-110° small orifice 005-04	135° forward
Fixed wing	Micronair Nozzles** AU5000*	Standard cage mesh	Straight back
Fixed wing	Beecomist*	10, 20 or 40 µm screen	Straight back
Rotary wing	Micronair Nozzles** AU5000*	Standard cage mesh	Straight back
Rotary wing	Beecomist*	40 µm screen	Straight back

* Adjust RPM of nozzles to deliver the appropriate droplet spectrum required for your application.

** AU 4,000, AU 5,000, AU 6,600 brushless

Note: Data is for general information only. Actual droplet size will depend on the application conditions and factors such as nozzle and atomizer condition. Always calibrate sprayers to ensure required dosage rate and conditions are met. **As always, read and follow label directions.**

2



Calibration Process

To adjust your spray system for proper flow rate:

- » Determine the number of acres per minute your aircraft will treat by using the first formula shown.
- » Select the Duet™ labeled flow rate (in ounces per acre) required for your needs.
- » Using the second formula, multiply the figures derived from the two steps above to determine the proper Calibration Flow.

$$\frac{\text{Swath} \times \text{Speed}}{495} = \text{Acres} / \text{Min}$$

$$\left(\frac{\text{Acres}}{\text{Min}} \right) \left(\frac{\text{Oz}}{\text{Acre}} \right) = \frac{\text{Oz}}{\text{Min}}$$

↓
Calibration Flow

PRALLETHRIN	SUMITHRIN	PBO	FLOW RATES
0.00072 lbs. Al/acre	0.0036 lbs. Al/acre	0.0036 lbs. Al/acre	1.23 fl. oz/acre
0.00044 lbs. Al/acre	0.0022 lbs. Al/acre	0.0022 lbs. Al/acre	0.75 fl. oz/acre
0.00036 lbs. Al/acre	0.0018 lbs. Al/acre	0.0018 lbs. Al/acre	0.61 fl. oz/acre
0.00024 lbs. Al/acre	0.0012 lbs. Al/acre	0.0012 lbs. Al/acre	0.41 fl. oz/acre

3

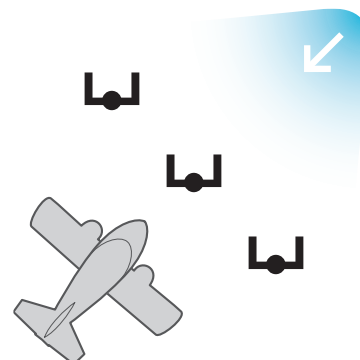


Droplet Dynamics

Droplet VMD should be optimized between 25-30 microns to achieve maximum performance. Confirm the droplet size by placing slide impingers with Teflon coated slides as described in the diagram. Droplets on slides can be measured using a compound microscope with a mechanical stage and an ocular micrometer. Starting at one end of the slide, measure each droplet as they pass through the eyepiece micrometer. The expected spread factor for Duet is 0.59 (minimum of 200 droplets collected). Use this factor until the actual spread factor is determined.

To Determine Appropriate Offset:

- » Place droplet collectors 50 ft apart and 90 degrees to the wind direction.
- » Fly directly into wind over slides at 75 ft. Spray for 15 seconds after passing over slide collectors.
- » Wait 10 minutes after application for upwind droplets to reach collectors.



Duet™ By Ground

Duet should be applied using ULV spray equipment capable of producing ULV spray droplets with a VMD of 8-30 microns.

Use the Following Guidelines, Assuming a 300ft Swath:

Fl. oz/acre	* Flow rates in fluid oz/min at truck speeds of:			
DUET	5 MPH	10 MPH	15 MPH	20 MPH
1.23 oz/acre	3.7 oz	7.4 oz	11.2 oz	14.9 oz
0.75 oz/acre	2.3 oz	4.6 oz	6.8 oz	9.1 oz
0.61 oz/acre	1.9 oz	3.7 oz	5.6 oz	7.4 oz
0.41 oz/acre	1.2 oz	2.5 oz	3.7 oz	5.0 oz

*Assumes a 300 ft spray swath

To Optimize Your Ground Application:

To achieve maximum performance, droplet VMD should be optimized between 10-20 microns. Droplet spectrum may be determined by using the hot-wire method using a DCIII (AIMS) unit that measures and calculates VMD or MMD for oil-based liquids. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

Standard Droplet Collection:

- » Use Teflon-coated microscope slide
- » Attach slide to 3'—4' rod
- » Stand 10'—25' downwind from nozzle
- » Distance is dependent on sprayer velocity
- » Higher velocity of sprayer = further distance from nozzle (not to exceed 25')
- » Swing rod (with coated slide facing the insecticide) once rapidly in a baseball swing/diagonal motion toward the sprayer, through the spray cloud

Standard Droplet Measurement:

- » Use a compound microscope equipped with a mechanical stage and an ocular micrometer placed in the eyepiece.
- » Starting at one end of the slide, measure each droplet as they pass through the eyepiece micrometer.
- » A minimum of 200 droplets should be measured to obtain an adequate sample.
- » Spread factor for Duet: 0.59.

ENVIRONMENTAL CONDITIONS FOR AIR AND GROUND APPLICATION

Duet should be applied when conditions are favorable for ULV applications. Favorable application conditions occur when the atmosphere at application height to immediately above ground level is stable. This condition is characteristic of an inversion, which occurs when temperatures increase with height. Stability is also influenced by solar radiation and heat exchange between air, soil and vegetation. As a result, favorable conditions for ULV applications usually occur prior to sunrise and after dusk. Duet has been shown to have a negative temperature coefficient. This means it is extremely effective, early and late season when temperatures are between 50°-65° F and most mosquitoes are active.

FREQUENTLY ASKED QUESTIONS

Q: What is prallethrin and how did it come into use as a mosquito adulticide?

A: Prallethrin was developed in the 1980s as an alternative to pyrethrins. It was first registered for use with the U.S. EPA in 1995. Since then, it has been in use in pest control products throughout the world.

Q: Does Duet™ pose a health risk to community residents?

A: All products involve a balance between risks and benefits. The active ingredients in Duet have been carefully tested. Duet is registered for ground and aerial applications in outdoor residential and recreational areas.

Q: Does the combination of prallethrin and Sumithrin in Duet increase toxicity?

A: No. Duet has the same toxicology profile as Anvil®.

Q: How does Duet break down in the environment?

A: Duet's active ingredients break down rapidly in sunlight into carbon dioxide and water vapor.

Q: What is Sumithrin, and how does it impact mosquitoes?

A: Sumithrin, best known in the Anvil formulation, is an active ingredient used for adult mosquito control. A synthetic pyrethroid, Sumithrin replicates the mosquito controlling properties of pyrethrin, derived from chrysanthemum plants. It has been widely used in mosquito control since 1975, and in the Anvil formulation has been used in every major mosquito control effort in the U.S. since 1999. Both prallethrin and Sumithrin interrupt the sodium channel complex in mosquito nerve axons.

Q: Is adult control effective?

A: Generally, spraying for adult mosquitoes is highly effective at killing adult mosquitoes on the wing. With Duet, the dual-active formulation provides excellent control among commonly controlled mosquitoes even at low application rates.

Q: How much Duet is typically applied?

A: Duet is applied in very low dosages, from less than half an ounce to a little more than one ounce of formulated product per acre (.41 to 1.23 fl oz/ac). In lay terms, approximately a teaspoon of formulated product treats an area the size of a football field.



Clarke

GLOBAL HEADQUARTERS

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www.clarke.com

Clarke is a global environmental products and services company. Each year, Clarke helps make communities around the world more livable, safe and comfortable by pioneering, developing and delivering environmentally responsible disease prevention and habitat management solutions. In 2008, Clarke founded The Clarke Cares Foundation, a non-profit created to provide disease prevention support for communities with critical needs.

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NATULAR[®]

NATURALLY DERIVED ACTIVE INGREDIENT

Larvicide for Mosquito Control

Reduced Risk active ingredient

Unique mode of action

Novel class of chemistry for public health

Formulated for sustainable solutions



THE FIRST AND ONLY COMPLETE PORTFOLIO OF LARVICIDES WITH A NATURALLY DERIVED ACTIVE INGREDIENT

For years there have been only five active ingredient choices for larval control. Now there's a sixth, and it's found only in **Natular**[®]. With formulations developed and manufactured exclusively by Clarke, its patented ingredient, spinosad, is a product derived from a naturally occurring bacterium. Natular is in a chemical class different from all other larvicides and has a unique mode of action that helps fight resistance. Simply stated, Natular is like no other larvicide on the market.

BENEFITS INCLUDE >>

.....

Reduced Risk active ingredient

The active ingredient in Natular formulations is designated by the E.P.A. as Reduced Risk. This means reduced risks to human health and the environment when compared to other chemical and biochemical larvicides.

Unique mode of action

The unique mode of action of spinosad ensures no cross resistance with other chemistries.

Novel class of chemistry

Natular formulations are Group 5 insecticides — the first public health larvicides in this class — that provide you confident, resistance fighting performance.

Formulated for sustainable solutions

All formulations, except Natular DT are OMRI (Organic Materials Review Institute) Listed, enabling them to be used in and around organic agriculture. The international tablet has not been submitted for review.

What makes Natular® so unique?

Natular and its active ingredient, spinosad, offer a healthier alternative to protecting the well-being of communities.



Provides the right balance of efficacy with environmental stewardship

Offers exceptional control of larvae from the first through early 4th instar stages

Excellent option for resistance management and rotational use

Minimal PPE requirements for application

All formulations of Natular were designed as sustainability solutions

Breaks down rapidly in soil—spinosad degrades into carbon dioxide and water

Six advanced formulations to fit any habitat

Green Chemistry active lets you use with confidence in your community

WE'RE SETTING NEW BENCHMARKS WITH SPINOSAD

Spinosad, a product derived from a naturally occurring soil bacterium, is the active ingredient in Natular®. It provides the perfect balance of efficacy and environmental stewardship. Spinosad has an excellent safety record. It breaks down quickly and does not bioaccumulate in the environment. In addition, all inert ingredients in domestic Natular formulations are included on the EPA's List of Minimal Risk Inert Ingredients.

The Structure

Chemical name: *Saccharopolyspora spinosa*

Common name: Spinosad, a patented combination of spinosyn A and spinosyn D

	SPINOSYN A	SPINOSYN D
Molecular Formula	$C_{41}H_{65}NO_{10}$	$C_{42}H_{67}NO_{10}$
Molecular Weight	731.98	746.00
Color and State	Crystalline Solid, White to Tan	Crystalline Solid, White to Tan
Vapor Pressure (25°C)	3.0×10^{-11} kPa	2.0×10^{-11} kPa
Melting Point	84 – 100°C	161 – 170°C
<i>Water Solubility: (20°C)</i>		
pH 5	290 mg/L	28.7 mg/L
pH 7	235 mg/L	0.332 mg/L
pH 9	16 mg/L	0.053 mg/L



The Origins of Spinosad and Natular®

In 1982, a vacationing scientist took a soil sample from a drum that was used to make rum in the Caribbean. From this sample, a new species of bacteria was identified in 1986: *Saccharopolyspora spinosa*. (This translates into “spiny sugar.”) The bacteria was later fermented in a lab and yielded spinosyns A and D, the most active metabolites of *S. spinosa*. Together, they comprise spinosad.

In 2002, Clarke acquired the public health development rights to spinosad. After six years and over 35,000 hours of development and regulatory review, Natular larvicides became the first public health label for spinosad, and also the first aquatic use pattern with the active as well.

The First Reduced Risk Larvicide

In 1993, the U. S. Environmental Protection Agency created the Reduced Risk Pesticide Initiative to “encourage the development, registration and use of lower-risk pesticide products, which would therefore result in reduced risks to human health and the environment when compared to existing alternatives.”

Spinosad, the active ingredient in Natular, is one of only sixteen chemicals registered as a Reduced Risk pesticide and the only Reduced Risk larvicide for mosquito control. According to the EPA, the advantages of Reduced Risk pesticides include:

- » Low impact on human health
- » Lower toxicity to non-target organisms (birds, fish, plants)
- » Low potential for groundwater contamination
- » Low use rates
- » Low pest resistance potential
- » Compatibility with Integrated Pest Management (IPM) practices

Recipient of The Presidential Green Chemistry Challenge Award

Spinosad is one of only five pesticide products to ever receive the Presidential Green Chemistry Challenge Award*, one of the U.S. Government’s highest environmental honors.

Green chemistry, also known as sustainable chemistry, is the design of chemical products and processes that reduce or eliminate the use or generation of hazardous substances. The benefits of green chemistry technologies include:

- » Reduced waste, eliminating costly end-of-the-pipe treatments
- » Safer products
- » Reduced use of energy and resources

Green chemistry applies across the life cycle, including the design, manufacture, and use of a chemical product.

*www.epa.gov/greenchemistry



A REVOLUTIONARY MODE OF ACTION THAT'S IDEAL FOR ROTATIONAL USE

Delivering a Unique Mode of Action

The active ingredient in Natular® works like no other larvicide. Spinosad alters the function of insect nicotinic acetylcholine receptors in a unique action that causes continuous nervous impulses. This constant involuntary nervous stimulus causes paralysis and death. The action results primarily by ingestion, as well as by contact with the active.

In a Class by Itself: Group 5

Because of its unique mode of action, spinosad is classified as a Group 5 insecticide by the Insecticide Resistance Action Committee. It's the only active ingredient classified in Group 5 used for mosquito control. Because this class is unique and distinct from all other public health larvicides, this makes the Natular portfolio truly one of a kind.

It also makes an excellent option for resistance management. Its novel mode of action and distinct class grouping makes Natular ideal for rotational use since it shows no cross-resistance with existing products used for mosquito control.

Proven Performance

The consistent performance of spinosad — logged and observed in testing and operational work — has demonstrated exceptional control of larvae from the first through early fourth instar stages. Spinosad begins to work immediately upon contact and ingestion; its first visible effects are seen within hours of application. Optimal control is reached within 24-72 hours, sustained at very uniform levels for the labeled control period.

Natular formulations have been very effective in a wide spectrum of habitats in more than 50 domestic tests and 15 international studies. Data has been gathered on more than 20 species and will be expanded as usage increases.

We believe that an important part of being an environmental steward is product rotation. Our product rotation methods maximize the effectiveness of every program by preventing cross-resistance. To help select products for rotation in your program, visit clarke.com/mosquitocontrolproducts to view our full line of product offerings.

FORMULATED TO MEET THE NEEDS OF ENVIRONMENTALLY SENSITIVE HABITATS

Meets Organic and Sustainable Practice Standards

Natular® larvicides were formulated with a respect for the ever increasing number of communities with green or sustainability programs. All formulations except Natular DT have been listed by OMRI for use in organic production. Just knowing these products can be used in and around organic food production can give you confidence when using in public spaces.

Natular is the first larvicide evaluated as a Reduced Risk product by the EPA. All ingredients in all its formulations are included on the EPA's List of Minimal Risk Inert Ingredients. In fact, spinosad received the EPA's Presidential Green Chemistry Challenge Award in 1999. In addition, two of the portfolio's formulations have been evaluated by WHOPEP (World Health Organization Pesticide Evaluation Scheme).

Bottom Line: Natular formulations meet the criteria that make them an excellent choice for not only labeled environmentally-sensitive habitats but also for the growing number of communities with green or sustainable practice guidelines.

Visit www.epa.gov/opprd001/workplan/reducedrisk.html for more details.

Introducing NextGen Products

Natular is also the first product to be ranked in the "NextGen" category on the Clarke Eco-Tier™ Index of environmental impact.



SIX DISTINCT FORMULATIONS

Natular® is **available in six advanced formulations** to fit the needs of any habitat. Each formulation offers exceptional handling characteristics and is labeled for only protective eyewear PPE.

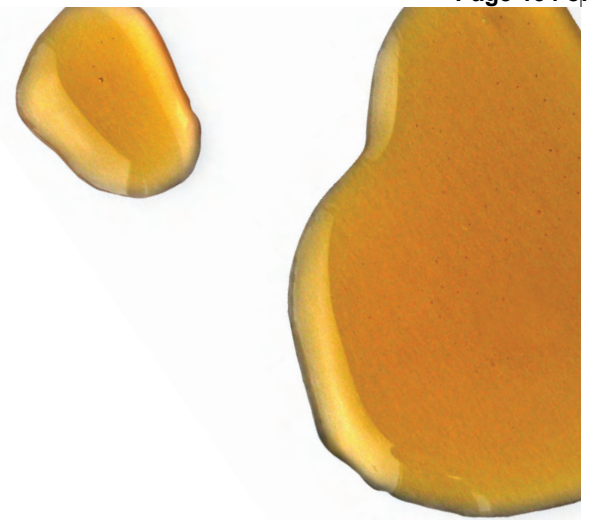
	FORMULATION	CARRIER & APPEARANCE	APPLICATION RATE*	BULK DENSITY
EC	Single-brood liquid	Liquid, dark and slightly cloudy in appearance	1.1 – 2.8 fl oz/ac	9.68 lbs/gal
G	Single-brood granule	Granules made from corn cobs	3.5 – 9 lbs/ac	33 lbs/cf
T30	Multiple-brood 30-day tablet	A dust-free tablet	1/100 sf	6 g/tablet
XRT	Multiple-brood extended release tablet	A dust-free tablet	1/100 sf	40 g/tablet
G30	Multiple-brood extended release granule	Granules made from silica	5 – 20 lbs/ac	85 lbs/cf
DT (Available in select states. Check website.)	Multiple-brood tablet for containerized water	Bi-layer tablet	1/container	1.35 g/tablet

For International Use: Natular DT

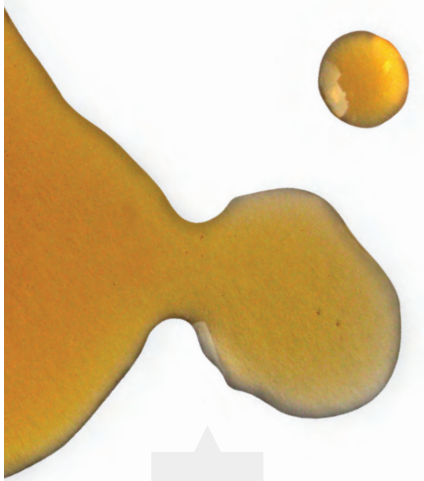
In rural and urban areas of Latin America, the Middle East, Africa and Asia, the need to treat water barrels and other containers is crucial in the fight against Dengue, Yellow Fever and Chikungunya. To meet this need, Clarke developed the innovative bi-layer Natular DT formulation.

One layer works immediately while the second dissolves slowly. Thus, each tablet can treat a 200 liter barrel of water for more than 60 days. Successfully evaluated by WHOPEs, Natular DT has significantly reduced volume requirements, making transportation and storage much easier.

* depending on area of treatment



DT



2EC



G30



T30



XRT



G



REDUCING ENVIRONMENTAL IMPACT

The active ingredient in Natular® larvicides, spinosad, is a highly selective insect control product with high potency for target insects but **low toxicity toward mammals and other non-target organisms.**

Environmental Fate

In Soil: Spinosad degrades readily in the soil environment and is non-persistent. Primary mechanisms of degradation are sunlight photolysis and microbial breakdown. Under field conditions, spinosad breaks down rapidly in the soil with observed half-lives of less than one day, degrading into carbon dioxide and water by the soil microbial community. It is moderately to strongly absorbed by soil particles and is considered to be “relatively immobile to immobile” with regard to leaching.

In Water: In natural water systems, spinosad degrades rapidly in sunlight. A water column half-life of less than one day has been observed in artificial pond systems in outdoor conditions.

In Animals: Because of its unique mode of action, spinosad is highly selective to insects. In mammals, spinosad is not readily absorbed through the skin; any minute amounts that are absorbed or ingested are rapidly metabolized to inactive by-products, which are excreted. As a result, it has very low acute toxicity. In long term studies, no evidence of carcinogenicity, mutagenicity, or neurotoxicity has been observed.

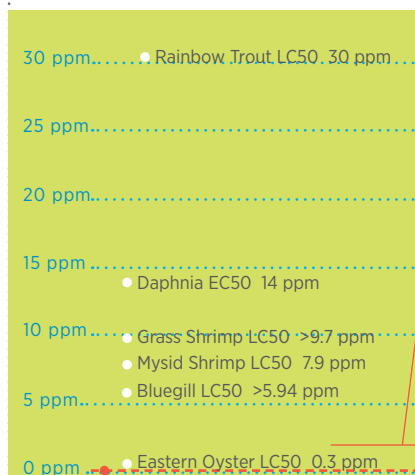
Toxicity, Mutagenicity, Genotoxicity

Spinosad is well known to present a relatively low risk to beneficial and non-target insects compared to other broad-spectrum, insecticide products. It is not acutely toxic to terrestrial birds, wildlife, or to fish and most aquatic invertebrates. Investigated in a battery of genotoxicity studies, it has been found to possess no mutagenic potential.

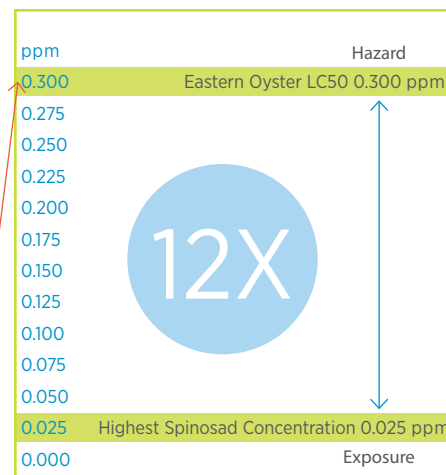
During the six years of development and the operational use of Natular products since introduction in 2009, there have been no observed or validated non-target effects. Many characteristics of spinosad make this possible: low dose rate, rapid breakdown by sunlight, binding to soil, rapid dissolution in water, as well as non-target location and lifecycle at time of application.

Indicator Aquatic & Invertebrate Species Sensitivity to Spinosad

TOXICITY CONCENTRATIONS PPM



Spinosad concentration level with Natular products: 0.015 – 0.025 ppm



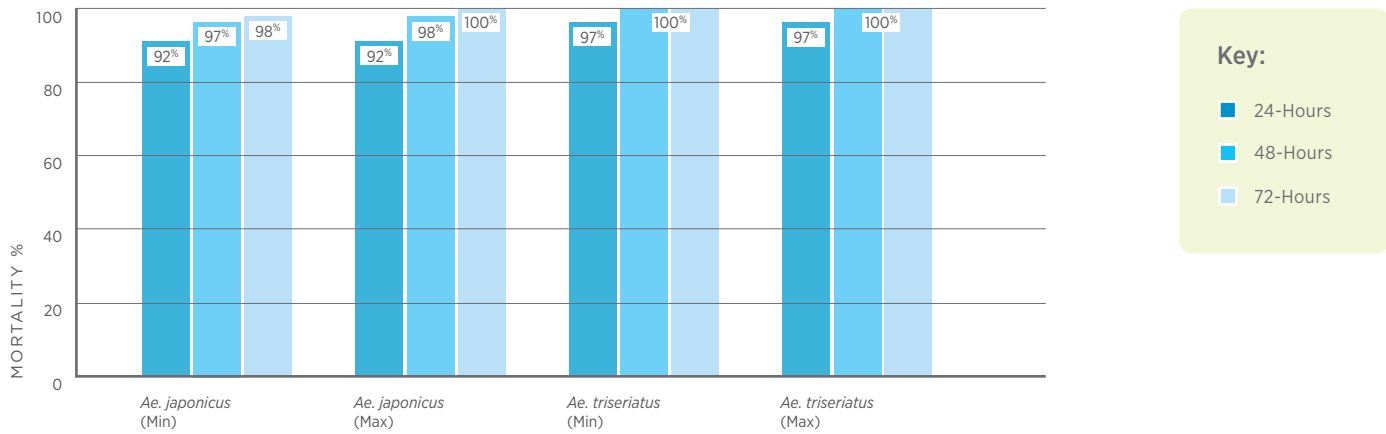
Spinosad demonstrates a 12X margin of safety when comparing exposure to acute toxic hazard.

RESULTS

Natular® EC

Rate: 1.1 fl oz/ac (Min), 2.8 fl oz/ac (Max)

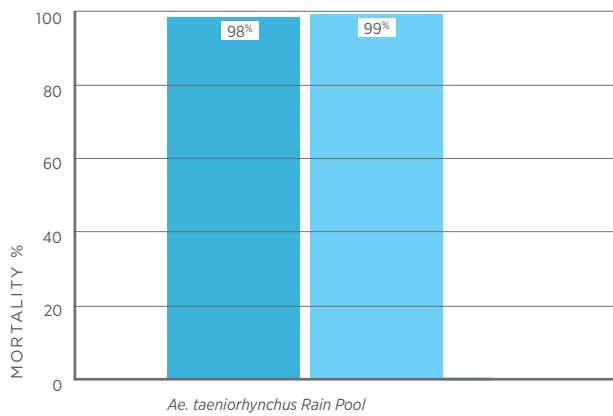
Location: Kentucky, 2008



Natular G

Rate: 9 lb/ac (Max)

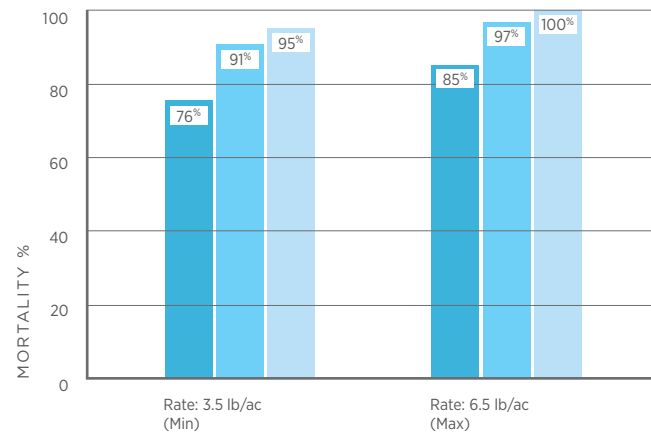
Location: Florida, 2008



Natular G

Species: *Ae. trivittatus*

Location: Kentucky, 2008



RESULTS

Key:

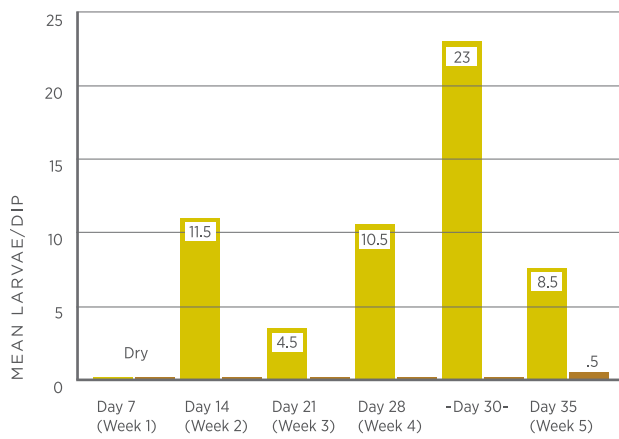
- Unt
- Trt

Natular G30

Habitat: Retention Ponds/*Ae. vexans*-*Cx. pipiens*

Rate: 10 lb/ac (<Mid)

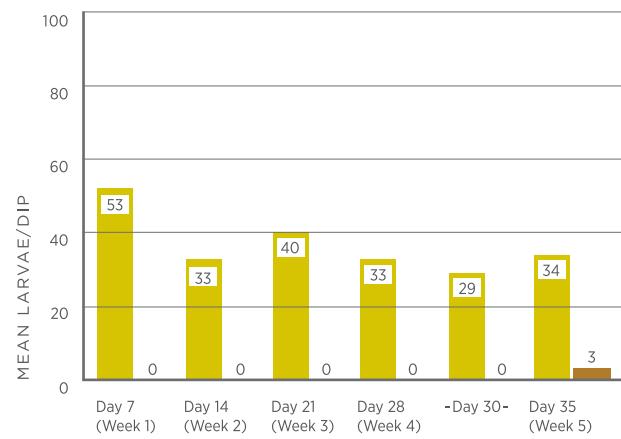
Location: Illinois, 2008



Natular T30

Habitat: Catch Basins/*Cx. restuans* - *pipiens*

Location: Illinois, 2008



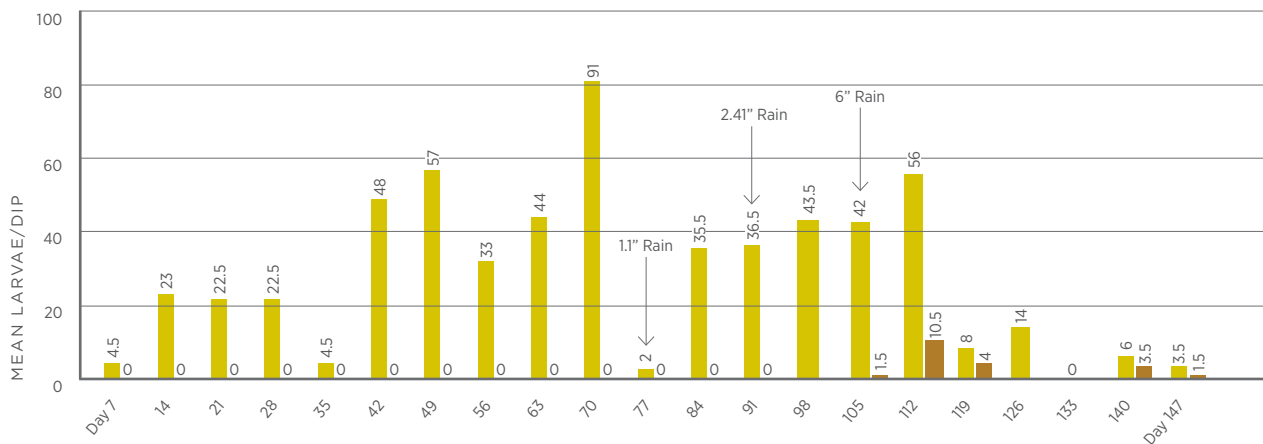
Key:

- Unt
- Trt

Natular XRT

Habitat: Catch Basin/*Cx. pipiens*

Location: Illinois, 2008



RESULTS

Natular G30

Habitat: Sample from Benthic Soils, Lake Monroe

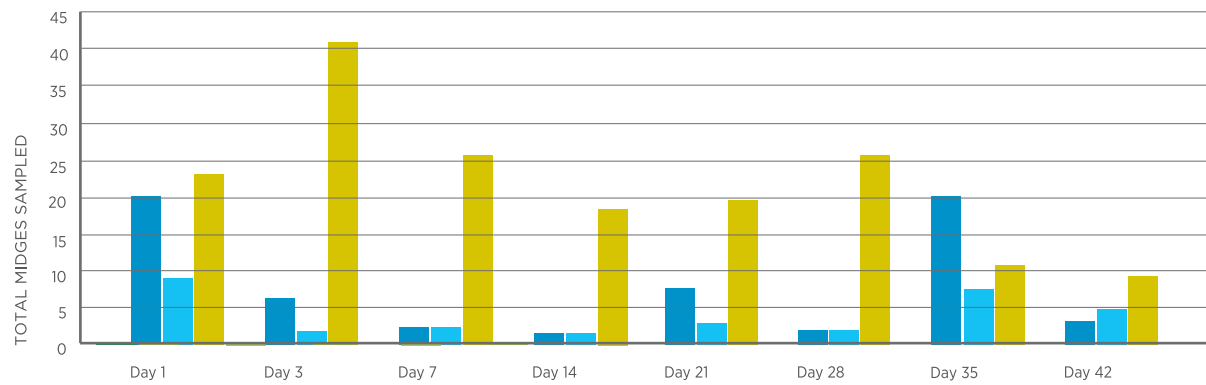
Rate: 12 lb/Acre and 12.5 lb/Acre

Location: Lake Monroe Florida, Volusia County, 2010

Species: Non-Biting Midge: *Glyptotendipes paripes* and *Chironomus crassicaudatus*

Key:

- Natular 12 lb/Acre
- Natular 12.5 lb/Acre
- Control



*Data provided by Edward D. Northey, Environmental Specialist, Volusia County MC, FL

Key:

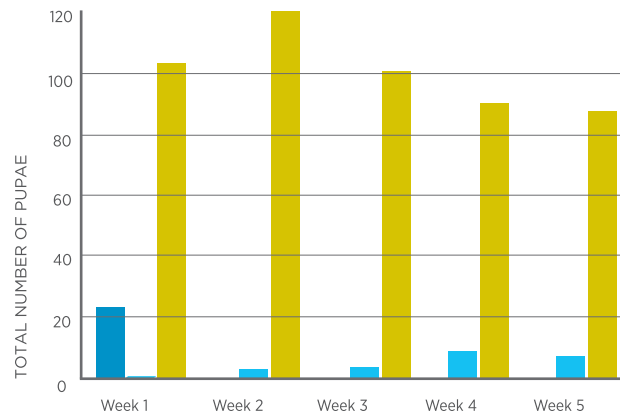
- Natular T30
- Natular G30
- Control

Natular T30 and Natular G30

Location: Kenya Medical Research Institute, Kisumu, Kenya, 2010

Species: *Anopheles gambiae*

Large Simulated Barrow Pit Study



Key:

- Natular 5 lb/Acre
- Natular 10 lb/Acre

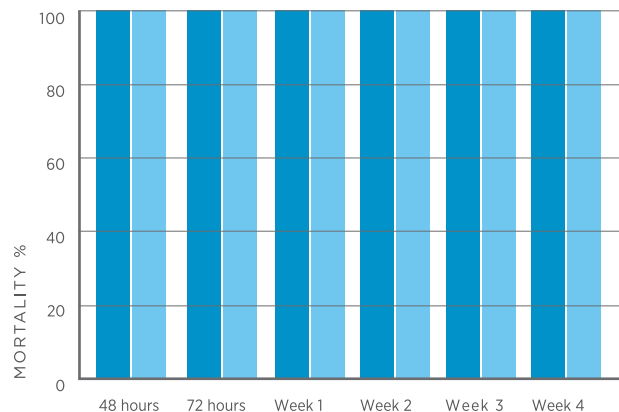
Natular G30

Habitat: Wetlands

Rate: 10lb/A and 5lb/A

Location: Washoe County, Nevada, 2009

Species: *Cs. morsitans*, *Cx. tarsalis*



FREQUENTLY ASKED QUESTIONS

Q: What is the active ingredient in Natular® larvicides?

A: Spinosad. It is a naturally derived active ingredient produced during fermentation by the soil organism, *Saccharopolyspora spinosa*. The natural metabolites produced during the fermentation process were termed “spinosyns”. Spinosad is the collective term for the two most prominent and most active compounds in the fermentation broth (spinosyn A and spinosyn D). Hence the name “Spinosad”.

Q: How is the active ingredient manufactured?

A: Spinosad is produced in a state-of-the-art fermentation facility in the United States, using natural feed-stocks to maintain the fermentation process.

Q: Is spinosad new?

A: No. Spinosad’s first global registration was in 1996. Today it’s used on more than 250 crops and in consumer and animal health uses in over 85 countries. Although Natular larvicides are the first public health usage of the active.

Q: How does the active ingredient in Natular formulations control mosquito larvae?

A: Spinosad has a novel mode of action; it alters the function of insect nicotinic acetylcholine receptors in a unique manner. Ultimately paralysis sets in upon ingestion and contact and the mosquito larvae don’t recover.

Q: Are Natular formulations suitable for use in organic agriculture?

A: All domestic formulations of Natular are listed by the Organic Materials Review Institute (OMRI) for use in and around organic agriculture.

Q: What does Group 5 Insecticide mean on the Natular label?

A: Group 5 is a designation by IRAC (Insect Resistance Action Committee), which is a global industry organization that promotes the development of insecticide resistance management strategies to maintain efficacy and support sustainable agriculture and improved public health. Each group has a distinctly different mode of action. Spinosad is the only active ingredient in Group 5 used for mosquito control. The benefit of this is that it has no cross-resistance with existing products – making Natular an excellent option for resistance management.

Q: What are the inert ingredients in Natular?

A: All inert components in domestic Natular formulations are included in EPA’s list of Minimal Risk Inert Ingredients. Inerts are non-synthetic (natural) or are synthetic components which do not contribute to mammalian or aquatic toxicity.

Q: What impact does spinosad have on non-targets?

A: Spinosad is of low acute and chronic toxicity to a wide range of non-target species. Under laboratory conditions, spinosad is toxic to some aquatic invertebrates, primarily upon chronic exposure. Fortunately, the rapid degradation of spinosad in natural aquatic environments prevents the long-term exposure that would be needed for these effects to occur in real world situations.

Q: How effective is Natular in an open / floodwater habitats with sunlight (Aedes vexans)?

A: Excellent, based on numerous cooperator and university trials.

Q: Do Natular larvicides control all of the important mosquito species?

A: Natular formulations have been tested on twenty of the most common vector and nuisance mosquito species and spinosad is effective against all of them. Given the fact that spinosad is a new active ingredient and has a completely unique mode of action; we expect to see consistent performance across all species.

Q: How do Natular™ formulations perform in habitats containing high organic matter?

A: We have seen excellent results in habitats with high concentrations of organic debris with Natular formulations, e.g. polluted water, sewage lagoons, and waters with high concentrations of leaf litter or other organic debris.

Q: How have Natular products performed in catch basins?

A: Both the 30-day Natular T30 and Natular XRT have performed exceptionally well in catch basins – even in the face of significant rain events as well as wet/dry cycles. The 30-day Natular T30 provides 30 days of control, while the XRT has consistently reached full season limits with control up to 180 days.

Q: How does varying amounts of sunlight affect the performance of Natular products?

A: Natular formulations were developed specifically for use in natural mosquito habitats, with single or multi-brood control objectives in mind. To date we have seen very uniform control levels regardless of sunlight intensity, and consistent with the labeled control claim of each Natular formulation.

Q: What about resistance?

A: The active ingredient in Natular products, spinosad, has not previously been used to control mosquitoes, hence there is no resistance to it. Spinosad is in a unique chemical class different from any other current products used in mosquito control, so there is no cross-resistance. Clarke will implement a resistance management program. To manage resistance, Clarke will steward and monitor the applications of these products to ensure consistent use according to label directions.

Q: What is the ecological toxicity of the Natular formulations?

A: Spinosad was registered under the US EPA Reduced Risk program and has favorable environmental characteristics compared to other mosquito larvicides. The active ingredient in Natular larvicides, spinosad, is well known to present a relatively low risk to beneficial and non-target insects compared to other broad-spectrum, insecticide products. Spinosad is not acutely toxic to terrestrial birds, wildlife, or to fish and most aquatic invertebrates. Extensive field experience indicates that spinosad's overall impact on beneficial insects is generally limited and transitory, and spinosad fits well into Integrated Pest Management (IPM) programs.

Q: What impact does spinosad have on non-targets?

A: Spinosad is of low acute and chronic toxicity to a wide range of non-target species. Under laboratory conditions, spinosad is toxic to some aquatic invertebrates, primarily upon chronic exposure. The rapid degradation of spinosad in natural aquatic environments prevents the long-term exposure to levels needed for these effects to occur in real world situations. Indeed, field studies indicate that effect on non-target species is mitigated by virtue of low application rates and rapid dissipation of spinosad.

Q: How do Natular products affect honey bees?

A: Field testing has demonstrated that once liquid spray residues have been allowed to dry for up to 3 hours that spinosad is not harmful to foraging honeybees and bumblebees. Spinosad has been used extensively in more than 85 countries with over 250 registered crop uses since its first launch in agriculture without any reported adverse effects on bees. This would be applicable ONLY TO THE LIQUID formulation. Granular and tablet formulations will not pose a bee hazard.

Q: Why are Natular formulations good rotational products?

A: Natular formulations are the new standard in larvicide control and are excellent as rotational products because they contain a new active ingredient with a distinctly different mode of action. Natular products are a key component in rotational programs for larvicide control. Rotation will help preserve the continued use of existing products.

Q: Is Natular's active ingredient toxic to mammals?

A: Mammals rapidly metabolize spinosad and any by-products are excreted. So spinosad has a very favorable mammalian toxicity profile:

- » Low acute tox for both technical and end-use formulations
- » No reproductive effects, not a teratogen
- » Negative in genotoxicity tests
- » Not a carcinogen
- » No endocrine effects



Clarke

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www.clarke.com

Clarke is a global environmental products and services company. Each year, Clarke helps make communities around the world more livable, safe and comfortable by pioneering, developing and delivering environmentally responsible disease prevention and habitat management solutions. In 2008, Clarke founded The Clarke Cares Foundation, a non-profit created to provide disease prevention support for communities with critical needs.

This brochure was printed with the following eco-friendly criteria: uses recycled content paper; uses soy-based inks to avoid petroleum-based inks and to reduce the amount of pigment required; plus recycle all waste from the trimming process.

Join us in reducing paper usage by sharing this brochure with someone else.

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Village of Downers Grove

Contractor Evaluation

Contractor: Clarke Environmental Mosquito Management

Project: Mosquito Spraying for 2018 (2nd extension FY16 contract)

Primary Contact: Emily Glasberg Phone: 847-421-9117

Time Period: started January 1, 2018, and finished December 31, 2018

On Schedule (allowing for uncontrollable circumstances) Yes No

Provide details if early or late completion: All work was completed on time and per the mosquito spraying specifications. One spraying occurred August 30 at a cost of \$10,836.80

Change Orders (attach information if needed): None

Difficulties / Positives: Clarke was very easy to deal with and I was able to communicate the work needed without any difficulty. Clarke was very prompt in scheduling and notifying when the work would be completed.

Interaction with public:

Excellent Good Average Poor

No comments reported

General Level of Satisfaction with work:

Well Satisfied Satisfied Not Satisfied

Reviewers: Kerstin G. von der Heide, Village Forester

Date: January 31, 2019