CODE OF PRACTICE FOR

VECTOR CONTROL OPERATOR , TECHNICIAN AND WORKER

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FOREWORD

The vector control industry plays an important role in safeguarding public health, mitigating vector borne diseases and food borne illnesses. It also helps protect properties and businesses from costly damages and improves our quality of life by eliminating nuisance pests.

One of the contributing factors for vector propagation is insufficient and/or poor standards of vector control. Coupled with improper refuse management, poor housekeeping and lack of structural maintenance, issues of vector infestation cannot be resolved satisfactorily and expeditiously.

To carry out vector control works, vector control personnel will need to don an appropriate set of personal protective equipment. Besides protecting oneself, there is also a need to ensure that pesticides are applied with caution and non-target animals are not accidentally poisoned. There is therefore a need to maintain high standard of professionalism within the vector control industry. Therefore, this Code of Practice is developed to meet the following objectives:

(i) provide a guide to persons working in the vector control industry;
(ii) promote safe and professional practices when carrying out vector control work;
(iii) minimise detrimental effects to humans, animals and the environment arising from vector control work;
(iv) define best practices of a professional vector control programme.

This Code of Practice will assist practitioners to comply with the Control of Vectors and Pesticides Act and its subsidiary legislation. It spells out the role of the vector control operator and its personnel (vector control technician, vector control worker), their responsibilities and what is expected of them.

Deputy Chief Executive Officer (Public Health) and Director-General of Public Health
National Environment Agency (NEA)
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1. Introduction

1.1 This Code of Practice is intended to guide the vector control operators (VCO), vector control technicians (VCT), and vector control workers (VCW) in carrying out vector control works in compliance with the Control of Vectors and Pesticides Act 1998 and Control of Vectors and Pesticides (Registration, Licensing and Certification) Regulations.

2. Definitions

In this code, unless otherwise specified

2.1 "Director-General" means the Director-General of Public Health appointed under section 3(1) of the Environmental Public Health Act 1987;

2.2 "premises" means messuages, buildings, lands, easements and hereditaments of any tenure, whether open or enclosed, whether built on or not, whether public or private, and whether maintained or not under statutory authority, and includes any place or structure, or any part thereof used or intended to be used for human habitation or for employment or any other purpose;

2.3 "Client" refers to a person or an organisation that engages the service of a pest control operator or vector control operator to assist in the implementation of vector/pest management plan, the elimination of undesirable vectors/pests, or protection of property from damages caused by vectors/pests;

2.4 "vector" means any insect, including its egg, larva and pupa, and any rodent, including its young, carrying or causing, or capable of carrying or causing any disease to human beings;

2.5 "vector control" means the destruction, or the prevention of the propagation or harbouring, of vectors;

2.6 "vector control operator" means a person who, in the course of any trade or business, undertakes or engages in vector control work;

2.7 "vector control technician" means a person who, for reward or under a contract of employment, carries out or supervises the carrying out of any vector control work;

2.8 "vector control work" means any work carried out for the purpose of vector control;

2.9 "vector control worker" means any person who, for reward or under a contract of employment, carries out any vector control work under the supervision of a vector control technician;

2.10 "site waste" refers to animal carcasses, animal excrement, insect dead bodies and materials that have no useful purpose and require disposal (e.g. spent baits, damaged traps, pesticide containers, dusty glue traps, material packaging, used UV light bulbs, contaminated gloves).

3. Legislation Governing the Industry

3.1 All vector control operators, vector control technicians and vector control workers are to comply with the following legislations relevant to the vector control industry.

- Control of Vectors and Pesticides Act 1998 (CVPA)
- Environmental Protection and Management Act 1999 (EPMA)
- Workplace Safety and Health (WSH) Act 2006

4. [Required][1] Registration of Vector Control Operators, Licensing of Vector Control Technicians and Certification of Vector Control Workers

4.1 Registered Vector Control Operator

4.1.1 Companies that wish to undertake or engage in vector control works are required to be registered as a Vector Control Operator (VCO). Employees carrying out vector control works are required to be:
(a) Licensed or provisionally licensed as Vector Control Technicians (VCT);
(b) Certified or provisionally certified as Vector Control Workers (VCW).

4.2 Licensed Vector Control Technician

4.2.1 A person may apply for a provisional VCT licence to perform vector control work while undergoing training for the Pest Management (for VCT) course. The provisional licence is valid for nine months from its date of issue.

4.2.2 A person may apply for a VCT licence after they have successfully completed and passed the Pest Management course and also met the minimum criteria set.

4.2.3 The VCT licence is valid for three years from its date of issue.

[1] [Required] refers to sections that are mandatory under the Control of Vectors and Pesticides Act and its subsidiary legislation

4.3 Certified Vector Control Worker

4.3.1 A person may apply for a provisional VCW certificate to perform vector control work while undergoing training for the Pest Control (for VCW) course. The provisional certificate is valid for nine months from its the date of issue.

4.3.2 A person may apply for a VCW certificate after they have successfully completed and passed the Pest Control course and also met the minimum criteria set.

4.3.3 The VCW certificate is valid for three years from its date of issue.

4.4 Renewal of VCO registration, VCT Licence or VCW Certificate

4.4.1 The renewal for VCO registration, provisional VCT or VCT licence, and/ or provisional VCW or VCW certificate shall be made not less than one month before the date of expiry. Any person who fails to renew their VCO registration, VCT licence and/ or VCW certificate on time would be required to submit a new application together with all the necessary supporting documents if they wish to continue operating in the vector control industry. They may be required to sit for an assessment, as deemed necessary by the NEA.

4.4.2 A provisional VCT licence or a provisional VCW certificate may only be renewed once.

4.5 Requirements for VCO Registration, VCT licence and VCW certificate

4.5.1 Refer to the NEA website https://www.nea.gov.sg/our-services/pest-control/vector-control-operator for more information on the requirements.

5. Roles and Responsibilities of Registered Vector Control Operators, Licensed Vector Control Technicians and Certified Vector Control Workers

5.1 Registered Vector Control Operators

5.1.1 [Required] The VCO shall commence vector control operations only after the issuance of certificate of registration. The VCO shall also ensure that all VCT and VCW deployed to the clients' premises are licensed/certified.

5.1.2 [Required] The VCO shall arrange for the licensed VCT and certified VCW to undergo the medical examinations specified in Part II of the Workplace Safety and Health (Medical Examinations) Regulations 2011 (G.N. No. S 516/2011) in relation to persons employed in occupations involving the use or handling of or exposure to the liquid, fumes or vapour of organophosphates.

5.1.3 [Required] The VCO shall notify NEA electronically via the ePortal https://www.eportal.nea.gov.sg of any thermal fogging activity 24 hours before it is performed, and when thermal fogging is to be carried out on weekend or Public Holiday, notification is to be made two days in advance.

5.1.4 [Required] Prior to any thermal fogging activity, the VCO must alert the residents and other occupiers in the immediate vicinity through means such as putting up of posters and distribution of leaflets. This must be done at least 24 hours prior to the start of thermal fogging, unless the public health situation requires immediate intervention with thermal fogging.

5.1.5 Information of VCT/ VCW employed for the Contract under Appendix 1 should be submitted to the client prior to the commencement of a Contract for record purposes.

5.1.6 The VCO shall submit a comprehensive service report and recommendation to the client at agreed intervals. The report shall include key information and reporting fields set out in Appendix 2 (Sample Service Reports). Service reports are used to document the vector control service performed during visits to client's premises, including any inspection or treatment, status of infestation, findings or challenges to the vector control programme and recommendations for improvement. It should be issued at the end of every service visit. VCOs may modify the report template to suit their client's requirements.

5.1.7 A monthly/quarterly/half-yearly/annual report with consolidated data will be useful for the analysis and review of the vector control programme.

5.1.8 The VCO shall demonstrate service effectiveness by confirming that the results achieved are in accordance with the objectives in the plan as agreed with the client. More information on the service flow of a professional vector control service can be found in section 7.

5.2 Licensed Vector Control Technicians and Certified Vector Control Workers

5.2.1 Under the Workplace Health and Safety (WSH) Act, all licensed VCT and certified VCW shall

- Follow the safety and health procedures at the workplace according to the Ministry of Manpower (MOM)'s regulations;
- Not endanger oneself and colleagues;
- Not tamper with safety devices, or perform wilful or reckless acts;
- Report unsafe work conditions, behaviours and workplace incidents (regardless of whether an injury has taken place); and
- Provide suggestions to improve safety and health at work

5.2.2 [Required] All licensed VCT and certified VCW shall be properly attired and equipped with appropriate footwear when working in or on designated service areas. Additional personal protective equipment (PPE) may be required for the safe performance of work; always refer to the Safety Data Sheet and product label of the pesticides for information on the appropriate PPE. It is mandatory for the licensed VCT/ certified VCW to wear the appropriate PPE when carrying out fogging.

5.2.3 [Required] No VCT or VCW shall use any pesticide for the purpose of carrying out any vector control work unless the pesticide is registered under section 7 of the Control of Vectors and Pesticides Act 1998 and bears the NEA Registration Mark shown in Appendix 3.

5.2.4 [Required] A certified or provisionally certified VCW shall carry out vector control work under the supervision of a licensed VCT.

5.2.5 A provisionally licensed VCT undergoing training shall carry out vector control work under the supervision of a licensed VCT.

5.3 [Required] Presentation of Certificate of Registration, Licence or Certificate

5.3.1 The VCO certificate of registration issued shall be exhibited in a conspicuous place at the principal place of business or any other branch offices where business is being carried out.

5.3.2 Provisionally licensed/certified VCT/VCW and licensed/certified VCT/VCW personnel are required to carry their hardcopy/electronic licence/certificate at all times while carrying out duties related to vector control work for identification purposes.

5.3.3 A registered VCO, a licensed VCT and a certified VCW shall, if required by the Director-General or an authorised officer, produce for inspection the certificate of registration issued, or the licence or provisional licence or certificate or provisional certificate granted.

6. Trainings for Vector Control Operators, Vector Control Technicians, Vector Control Workers

6.1 Vector Control Operators

6.1.1 VCO is encouraged to send management representative(s) to take up courses under the Singapore Workforce Skills Qualifications (WSQ). WSQ is a national credential system that trains, develops, assesses and certifies skills and competencies for the workforce. The training programme developed under the

WSQ system are based on skills and competencies validated by employers, unions and professional bodies.

6.1.2 Some of the recommended relevant courses are as follows:

- Employability Skills – Executive Development and Growth for Excellence
- Employability Skills – Workplace Skills Series
- Business Management
- Leadership and People Management
- Service Excellence
- Workplace Safety and Health Professional

6.1.3 VCO is also encouraged to conduct its own training and develop a set of standard operating procedures or guidelines. This is to ensure that VCTs and VCWs are competent and consistent in their performance standards when carrying out vector control works. VCOs should also maintain up-to-date risk registers and cascade them to VCTs and VCWs to allow identification of potential hazards when carrying out vector control works. If there are any accidents, VCOs are to review and update the risk registers, followed by cascading the changes to staff.

6.2 Vector Control Technicians and Vector Control Workers

6.2.1 A VCT and a VCW shall be able to demonstrate sufficient competency in literacy and numeracy to enable them to fulfil their responsibilities including reading, writing, calculations and communicating verbally with clients and being able to interpret client's requirements and technical requirements specified in pesticide labels, Safety Data Sheets and service protocols.

6.2.2 [Required] All VCTs are required to complete the Pest Management course. This mandatory course will equip the VCT with skills to carry out vector control work such as vector inspection work, prepare worksite for vector management, use of pesticides and vector management equipment, prepare pesticides and supervise vector control works performed by VCW.

6.2.3 [Required] All VCWs are required to complete the Pest Control course. This mandatory course will equip the VCW with skills to inspect and locate vectors, its breeding and harbourage sites at premises or outdoor areas and carry out vector control works under the supervision of a VCT.

6.2.4 All VCTs and VCWs are to receive sufficient training from suppliers prior to the application of new pesticides or deployment of vector management equipment. This is to ensure that they are familiar with the usage, operating procedures and any safety precaution related to the product.

6.3 Maintaining Training Records

6.3.1 The VCO shall ensure that the training activities and professional experiences of all VCTs and VCWs are properly documented and updated in order to demonstrate the adequacy of their competence in terms of vector management skills and other relevant skills, such as customer service, language literacy and business management.

6.3.2 Training logs of the VCTs and VCWs shall be maintained to document completion of training and the results of the competency assessment.

The VCO shall ensure that the knowledge and skills of the VCTs and VCWs continue to be current and relevant, by establishing a system of continual professional development. The review is recommended to be conducted at least once every three years.

7. Process Flow of Professional Vector Control Services

Process flow of professional vector control services should take into consideration the Integrated Pest Management (IPM) process, which consists of six components:

- Identifying the pests
- Monitoring and assessing pest numbers and damage
- Providing guidelines for when management action is needed
- Preventing pest problems
- Using a combination of biological, cultural, physical/mechanical and chemical management tools
- Assessing the effect of pest management after action has been taken

7.1 Site Assessment

7.1.1 As and when deemed necessary by the VCO in consultation with the client, a thorough inspection should be conducted to confirm the presence and source of vector activity and determine the potential to support an infestation. The results should be explained to the client before any intervention is designed or implemented.

7.1.2 Site assessment may be conducted as part of a routine service contract. Where no infestation is identified, the service activity shall focus on monitoring and prevention.

7.1.3 The assessment should consist of the following:

(i) Preliminary information on the type of premises (e.g. nature of business, location, value of assets impacted etc.);

(ii) Identification of the type of vector;

(iii) Establishment of a baseline i.e. assessment of the extent and distribution of the vector's presence;

(iv) Assessment of the local contributing factors which would favour further proliferation of vector;

(v) Identification of measures to be taken to mitigate the risks of further proliferation of vector, infestation or re-infestation (a distinction shall be made in the recommendations to highlight client's follow up action, where necessary);

(vi) Evaluation of the effectiveness of previous inspections, treatments and interventions, if any. Particular note shall be made in situations where the client has failed to act upon previous recommendations designated as their responsibility and its impact on sustaining the current infestation.

7.1.4 Where the presence of vector is identified, the VCO shall make all reasonable endeavours to establish the possible source of infestation and conduct a root cause analysis; such findings may impact the design of preventive and treatment strategies.

7.1.5 The VCO may use the sample checklist under Appendix 4 as reference for the site assessment.

7.2 Definition of Vector Control Plan

7.2.1 Following the site assessment, the VCO shall prepare a vector control plan specific to the site, taking into consideration the following factors:

(i) Varying specifications and requirement that the client needs to comply with (e.g. compliance with Food Safety Management Systems);

(ii) Nature and structural condition of the premises, environment and location;

(iii) Potential impact of intervention programme on non-target species, humans and environment (e.g. contamination of surface waters).

7.2.2 Possible scenarios from the site assessment could resemble the following:

(i) During the initial site assessment, no presence of vectors was detected; site conditions are not favourable to the propagation of vectors. Regular monitoring shall be continued to ensure that the condition is maintained;

(ii) During the initial site assessment, no presence of vectors was detected but site conditions (internal, external or localised environment) could possibly facilitate the establishment of an infestation. VCO should advise the client on the following:

- Structural rectification, e.g. sealing up of crevices, back-fill depression, etc. (if any);
- Improvements on housekeeping, hygiene and sanitary conditions;

- Training and education of client's behaviour or practices so as to minimise the potential of vector activity;
- Regular monitoring shall be continued to ensure that the condition is maintained, and no vector is present; and
- Preventive control for vectors in the immediate external vicinity;

(iii) During the initial site assessment, the presence of vectors was detected. The VCO should advise the client on the following:

- Structural modification/ rectification (if any);
- Improvements on hygiene and sanitary conditions;
- Training and education of client's behaviour or practices so as to minimise the potential of vector activity;
- Preventive control for vector in the immediate external vicinity;
- Direct control of vector within the site interiors, including intensity and duration of treatment; and
- Regular surveillance programme to commence after treatment to ensure that the condition is maintained, and no vector is present.

7.2.3 The vector control plan should define the appropriate strategy, surveillance programme and the frequency of service. The principles of a comprehensive pest management should be adopted, where appropriate, and included when formulating the vector control plan. The general approach includes the following, or a combination thereof, where due considerations of the potential risks and impact for each method is given:

(i) Remove vector's source of food, water and shelter, where feasible.

(ii) Physical control: removal of vectors from site by mechanical (e.g. trapping) or manual means; and

(iii) Chemical control: application of substances (e.g. pesticides and repellent) that repels or are toxic to the vector involved

7.3 Proposal of Vector Control Plan to Client

7.3.1 Based on findings from Section 7.1 and 7.2, a detailed proposal should be presented to the client, comprising the following, where applicable:

(i) Accurate identification of the vector species that has been detected in the survey, and information of the species;

(ii) Likely origin/source of the species involved and its location within the premises (e.g. False ceiling, hole/gap providing entry point, etc.);

(iii) Assessment of the level of infestation and extent of infestation within the premises based on the surveillance programme;

(iv) Regular surveillance programme;

(v) Advice on the potential risks associated with the presence of infestation;

(vi) Contributing factors leading to the propagation or access of vectors, e.g. site condition, structures, sanitary condition, work practices;

(vii) Description of proposed control strategy and details of intervention including frequency of control measures, including steps to restore sanitary conditions on site, where applicable;
(viii) Description of proposed preventive strategy with details of the methods, and client's responsibility for the respective follow ups according to the recommendations from the VCO;
(ix) Assessment of the need to seek assistance from relevant party (e.g. managing agent, town council, government agency etc.) to increase surveillance programme for vectors at common area;
(x) Risk assessment of the implications of treatment strategy and measures to mitigate the risks;
(xi) Other information of technical interest that may be relevant to the client (e.g. urgent corrective measures, recommendations for design of equipment to facilitate cleaning);
(xii) Quotation for the client to sign his acceptance and approval to proceed with the treatment;
(xiii) Written clauses on follow up visits to ensure service has been effective and no further treatment is required.

7.3.2 The proposal shall be presented in writing and should be as comprehensible as possible.

7.4 Delivery of Agreed Service

7.4.1 The VCO shall deliver the service as per agreed in a professional manner, including but not limited to:

(i) Selecting the appropriate materials and tools (including any active ingredient and formulation, where required);
(ii) Using a suitable method of application;
(iii) Proper application, storage and transportation of any pesticides and equipment;
(iv) Disposal of site waste in a safe and appropriate manner;
(v) Providing advice on post-treatment actions by the client;
(vi) Service reports to be issued to the client at agreed intervals. Sample reports are under Appendix 2.

7.5 Confirmation of Effectiveness of Vector Control Measures

7.5.1 The VCO shall demonstrate effectiveness of vector control measures by confirming that the results achieved are in accordance with the objectives as per agreed with the client. Assessment can be made by comparing results from monitoring devices, visual inspection, or examination with the aid of appropriate tools (e.g. surveillance camera, sensors, thermographic camera).

7.5.2 Additional recommendations for actions to be completed by the client or the VCO may be included at this point.

7.6 Monitoring of Service Delivery

7.6.1 For routine service contracts, VCO shall define the appropriate frequency of services and recommend to the client.

7.6.2 The outcome of each service visit shall be recorded in a systematic manner in the service report (see Appendix 2), detailing the evidence of vector activity and the appropriate interventions in accordance with the process flow of professional vector control services.

8. Pesticide Application

8.1 Application of Pesticides for Vector Control Works

8.1.1 Pesticides (specifically insecticide and rodenticide) is an integral part of vector control operations. These substances are delivered using specific tools or equipment to their biological targets (e.g. insects or rodents) or non-biological surfaces for the purpose of control or prevention. Nonetheless, source reduction (i.e. searching for and destroying breeding habitats) remains as the main strategy of vector control, especially for mosquitoes.

8.1.2 To ensure optimum coverage of the target area, always calculate the right amount of active ingredient required for the area and prepare the pesticide solution accordingly to product label. The solution shall be prepared by a licensed VCT or certified VCW under the supervision of a licensed VCT.

8.1.3 The selection of pesticide formulation will depend on the following factors:

(i) Target vector: Always adhere to manufacturer's instructions, and use only NEA-registered pesticides (NEA-registered pesticides will bear a registration mark, comprising a registration number and a registration logo on their product labels) labelled for use against the target vector;

(ii) Site condition: Oil-based formulation may not be suitable for use at certain locations (e.g. in nature reserves, reservoir, catchment area); always verify with the manufacturer or supplier when in doubt. The solution shall be prepared by a licensed VCT or under the supervision of a licensed VCT.

(iii) Hazard: Pesticide formulations that present the least hazard to humans and environment are preferable.

(iv) Other factors: Ease of use, equipment suitability and method of application.

8.1.4 Due to increasing concern on the undesirable effects of pesticides to the environment and humans, care must be taken to ensure that the pesticide

application is done in the most efficient and safe way possible, to minimise exposure to non-target organisms, including unintended animals and humans and environment.

8.1.5 The most commonly adopted methods for pesticide application for the purpose of vector control works are Thermal and Cold Fogging, indoor residual spraying, rodent baiting and gel baiting.

8.2 Thermal and Cold Fogging

8.2.1 [Required] Fogging shall not be relied upon as the main control method for mosquitoes. Where possible, source reduction (i.e. searching for and destroying breeding habitats) shall be the main strategy of vector control, especially for mosquitoes. Excessive fogging may accelerate the development of pesticide resistance in insect population, following which, pesticide that is normally effective against the population will no longer achieve the expected level of control. As fogging in an outdoor environment may also affect non-target organisms (e.g. dragonfly and butterfly), it shall be carried out judiciously.

8.2.2 Outdoor space spraying involves the dispersal of small pesticide droplets into the air to target adult mosquitoes that may be present in the outdoor environment. It is usually carried out when a rapid reduction in the mosquito population is required, to interrupt the transmission cycle of vector-borne diseases (i.e. during a disease outbreak). Pesticide droplet size, which is associated with the distribution of droplets and their ability to come into contact with the target mosquitoes, is the principal factor affecting the efficacy of space spraying. Space spraying has little or no residual activity. The two methods of outdoor space spraying are (i) Thermal Fogging and (ii) Cold Fogging.

8.2.3 Thermal fogging requires the use of heat to create a pulsating gas stream through the combustion of fuel-air mixture, where a pesticide solution is vapourised at the open end of the resonator, creating a dense fog for the purpose of flying and crawling insect control, using the right active ingredient and formulation.

8.2.4 [Required] For thermal fogging of refuse chutes, VCOs shall as far as reasonably practicable, eliminate or minimise the risk of flash fire or explosion by substituting the carrier with a non-flammable solvent. If VCOs need to use diesel for thermal fogging of refuse chutes, they shall take necessary safety measures. These include implementation of safe work procedures, such as ensuring adequate ventilation of chutes before fogging, operating the fogging machines in accordance with manufacturer's instructions, maintaining the fogging machines regularly and using appropriate personal protective equipment. Employers are reminded of their duties under the Workplace

Safety and Health Act to take reasonably practicable measures to ensure the safety and health of their employees at work. In this respect, VCOs are responsible for ensuring a safe outcome if they need to use diesel for thermal fogging of refuse chutes.

8.2.5 [Required] VCO is to adhere to the Guidelines on Good Practices for Thermal Fogging, when carrying out thermal fogging operations.

8.2.6 [Required] VCOs are to direct or guide vehicular traffic when fogging near roads and advise the public to move away from the fog. This is to ensure the safety of the VCT/VCW due to poor visibility caused by the fog.

8.2.7 [Required] Fogging or spraying pesticides near water tanks shall be avoided. If fogging or spraying pesticides near water tanks cannot be avoided, the following precautionary measures shall be undertaken:

(i) The Management Corporation Strata Title (MCST), Town Council or building owner must be informed of the fogging operations to ensure that all water tank openings including tank warning/overflow pipes and drain outlets are properly sealed/covered during fogging and pesticide spraying operations.

(ii) No fogging or pesticide spraying operations shall be carried out when water tank transfer pumps are in operation. These pumps are located on the ground floor of HDB flats and private buildings.

(iii) VCOs shall inform the MCST, Town Council or building owner of the date and time of fogging/ pesticide spraying operations in advance.

(iv) Strictly no direct fogging or pesticide spraying into the water tank enclosures and water tank pipes/drain outlets.

(v) Fogging and pesticide spraying operations shall only be carried out under supervision by the VCT/supervisor or managing agent on site.

8.2.8 VCO may refer to the Singapore Standard Code of Practice for the Safe Use of Thermal Foggers during Pest Management Activities (SS 682: 2022) for more information.

8.2.9 Cold fogging can be applied using a cold fogger or ULV machine by subjecting the chemical solution to a powerful blast of air from the machine, breaking up the solution into minute droplets. Once dispensed, the droplets are suspended in the air, ensuring absorption of the chemicals by the target pest.

8.2.10 The VCO shall be familiar with the operating instruction of the cold fogger/ ULV machine prior to the operation, as well as any precautionary measures related to the treatment that may compromise safety.

The VCT/VCW shall ensure that the area of treatment is thoroughly vacated prior to the operation. When using pesticides, always cover the fish ponds and aquariums. Close all windows, switch off the air conditioner and fan, and turn off any open fire before treatment commences. Application shall target the entire area based on the application rate of the pesticide. VCT/VCW shall inform clients to only re-enter the premises after the treatment and to open all windows and doors to ventilate the premises for at least 30 minutes. VCT/VCW shall also advise clients to thoroughly clean and wipe down any pesticides that may be unintentionally deposited onto surfaces with soap and water.

8.3 Indoor Residual Spraying

8.3.1 Indoor residual spraying is the application of a long-lasting, residual pesticide onto surfaces, killing target vectors when they come in contact with the treated surface. It is mainly used for the treatment of mosquitoes or crawling insects (e.g. cockroach).

8.3.2 The pesticide solution is dispensed using a portable operated compression sprayer with specifications following WHO guidelines.

8.3.3 VCOs should refer to the product label on the appropriate pesticide formulation for the different surfaces to be treated.

8.3.4 The VCT/VCW shall inform clients to only re-enter the premises after the treatment and to open all windows and doors to ventilate the premises and drying of treated surfaces for at least 60 minutes. VCT/VCW shall also advise clients to thoroughly clean and wipe down any pesticides that may be unintentionally deposited on high-touch surfaces (e.g. door knobs, tables, chairs) and floors with soap and water. The clients should also avoid contact with sprayed walls.

8.3.5 Do not conduct indoor residual spraying at the following areas:

- High touch points (doorknobs, handles)
- Electrical parts (electrical appliances and sockets points)
- Personal items and linens
- Food/utensils
- Areas that frequently get wet

8.3.6 Targeted Indoor Residual Spraying (TIRS) is the use of selective residual pesticide targeting *Aedes* mosquitoes' resting and harbourage sites indoors. TIRS should be applied on treatment spots using proper techniques as described below:

- Treat from the top to bottom, and from the back to front of the building

- The distance from the nozzle tip to the surface being treated should be kept at 45 cm. Length of lance should be at least 50cm in length. Lance can be used to estimate the distance away from intended spray surfaces or estimate how far the lance should be inserted in the gap during treatment.
- Treat the identified spot from 1.5 m and below.
- Allow 5 cm overlap on the sides of each swathe.
- Time the spray speed to cover 1 m every 2 seconds.
- For complete treatment, insert lance into the gap between wall and heavy furniture that cannot be removed

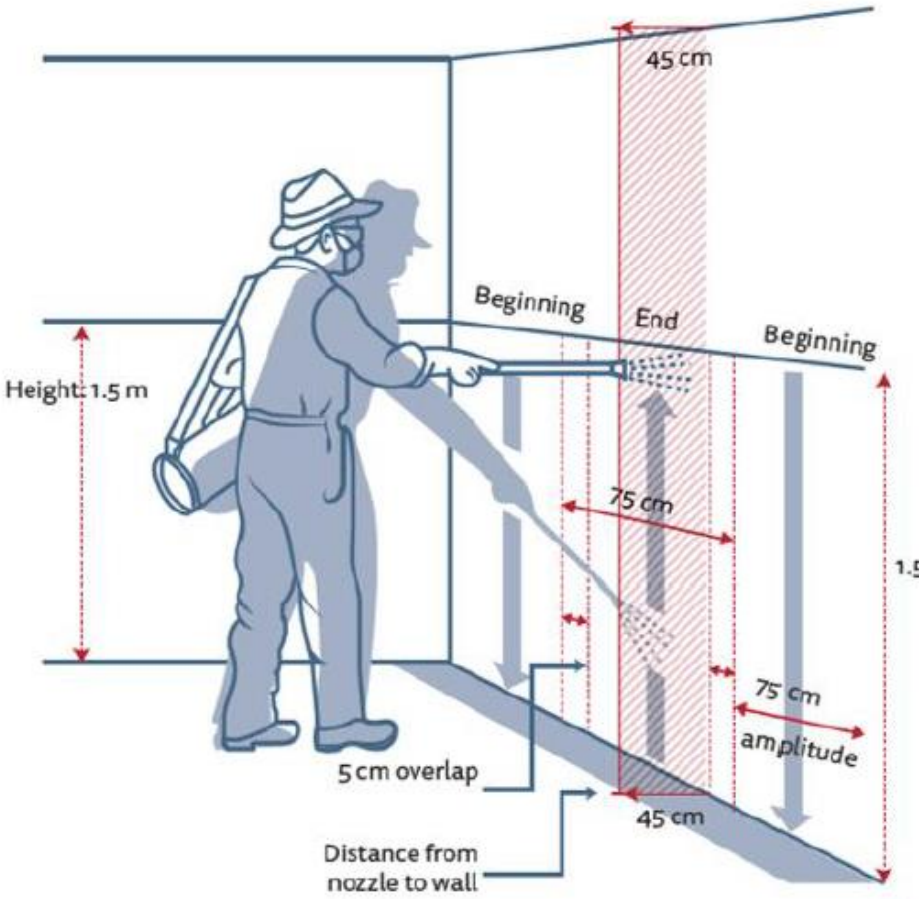

Figure 1: Technique to apply TIRS (PAHO Guidelines on Indoor Residual Spraying for *Aedes aegypti* 2019)

8.4 Rodent Baiting with rodenticides

8.4.1 Rodenticides are often formulated as baits with food attractant such as grains, molasses and peanut butter, to kill rodents (mice and rats) upon feeding. It is used during a rodent infestation, or for the monitoring of rodent population, and

typically contained inside a tamper-proof rodent bait station when used in premises.

8.4.2 VCO shall identify the rodent and appropriateness of the baits to be used prior to the baiting exercise. Humans, pets and wildlife may also suffer the undesirable effects of poisoning if the rodenticides are unintentionally ingested. Therefore, VCO must exercise caution when applying rodenticides. For example, use tamper-proof bait stations in accessible areas.

8.4.3 Rodenticides must be placed deep into rat burrows where it is not visible from the outside. For more details on burrow treatment, please refer to the Rat Control Guideline for Estate and Facilities Managers in the following website: www.nea.gov.sg/docs/default-source/our-services/pest-control/rodent-control/rat-control-guidelines-for-estate-and-facilities-managers.pdf

8.4.4 Rodenticides shall not be placed in drain and sanitary lines.

8.4.5 When rodenticides are used in tamper-proof bait stations, VCO shall ensure that the stations are anchored to or securely attached to an immovable surface or object. The stations shall be securely locked/fastened and only licensed VCT and certified VCW can access.

8.4.6 Tamper-proof bait stations are to be properly labelled with the emergency contact number, contractor's business name and telephone number, a warning sign and the words "Rodent Bait Station, Do Not Remove" to deter curious members of public from disturbing the stations.

8.4.7 To minimise the risks of young children, domestic animals and wildlife from accessing the rodenticides, VCT/VCW shall note the following:

(i) Tamper-proof bait stations with rodenticides shall be placed at appropriate locations around the perimeter of buildings; rodenticides shall also be applied deep into burrows and regular checking is required to ensure that rodenticides are not ejected from the baited burrow;

(ii) When such tamper proof bait stations are used for food retail establishments, they shall be placed around the external perimeter of the premises (if applicable), away from food or food contact surfaces. Food contaminated with chemicals can lead to fatal food poisoning. If tamper proof bait stations are used, ensure that:

a. all bait stations are placed out of the general view, and in locations where they will not be interfered or be disturbed by routine operations;

b. baits are secured in the feeding chamber of the stations and not placed at the exit hole of the stations or along the rodent runway; and

Note: Tamper proof bait stations containing toxic baits are not allowed to be used in the false ceiling of food establishment.

(iii) Choose rodent baits with the addition of safety ingredient, e.g. Bitrex (denatonium benzoate).

8.4.8 VCO shall return for a follow up visit after the application of rodent baits. The frequency of visits varies according to the following factors:

(i) Level of infestation: heavy infestation will require more frequent visits to replenish the rodenticides;

(ii) Type of rodenticide: some forms of rodenticides may require more frequent visits to remove any dead rodent and dispose of carcasses;

(iii) Characteristics of site: For example, an area highly accessible by the public will require more frequent visits to ensure no loose rodenticides lying around.

8.4.9 All rodenticides shall be removed at the end of the treatment period.

8.5 Gel/ Paste/Liquid/ Granular Baiting

8.5.1 Baits are target specific and effectively control vectors based on their feeding and social behaviour. Baits come in many different formulation (e.g. gel baits for cockroach, liquid baits for fly, granular bait for cockroach and fly etc.) and active ingredient. Baits are an important tool in a comprehensive pest management programme.

8.5.2 VCO shall apply the baits according to the manufacturer's guidelines. For example, cockroach gel bait may be placed as discrete small dabs of baits near the harbourage instead of "caulking" the area with baits, which is not only unsightly but also a waste of time and product. Granular fly bait may be scattered around bulk waste bins where house flies are present or mixed with water to form a paste to paint onto surfaces where flies will land on. Always confirm with the product supplier or manufacturer when in doubt.

8.5.3 VCO shall be mindful of the location where the baits are applied (e.g. avoid food preparation area) to avoid unintended contamination and poisoning.

8.5.4 VCO shall explain to the client that baits will only be a temporary measure in the absence of proper waste removal and hygiene practices, and without tackling the source of pest infestation. Client shall understand that it is important to remove any competing food source. For instance, cockroach gel baits will

not be effective if there are many food deposits and residue for the cockroach to feed on.

9. Professionalism

9.1 Reputation and Image

9.1.1 The vector control industry plays a vital role in safeguarding the public. VCO shall strive to promote the value of professional vector management and deliver their services professionally.

9.1.2 Vector infestation may affect the image and reputation of premises negatively. Therefore, all dealings with the client must be carried out in a professional manner.

9.1.3 VCO shall not disclose details (e.g. information, images, photographs etc.) of infestation at the premises of client through electronic transmission means (e.g. email, instant messaging service, social media platform) unless for the purpose of work and prior consent from the client.

9.1.4 Treatment of common areas (e.g. shopping mall, hotel or areas with high human traffic, etc.) shall only be undertaken during times that will not affect the operations of the premises and cause inconvenience to the client and the public.

9.1.5 VCO shall strive to project a professional image and persona through their appearance (such as maintaining a clean and tidy uniform, and proper maintenance of their equipment), actions, behaviours, articulation in dealings with the clients and be equipped with the correct knowledge and relevant experience. VCO may consider training programmes for employees on relevant topics as indicated under Section 6.1.

9.2 Pesticide Usage

9.2.1 VCO shall ensure that the implicated vector is correctly identified before a pesticide is selected for use. If there is difficulty in identifying the vector (i.e. uncommon vector, confusing features between different species), assistance shall be sought either from a trained entomologist, zoologist or taxonomist.

9.2.2 VCO shall be familiar with the types of pesticides available in the market. Where possible, opt for the least toxic options, and use the least amount possible as all pesticides are toxic to some extent and may cause harm if used incorrectly. The repeated use of the same pesticide and active ingredient could lead to pesticide resistance and shall be avoided.

9.2.3 VCO shall select the most effective pesticide suited to the site condition, making sure that the pesticide chosen is intended for the target vector. For example, a cockroach bait will not be effective against flies due to the different mode of action and formulation.

9.2.4 The usage of pesticides shall be discussed with the client prior to any pesticide application. All relevant product label warning and expected outcome shall be made known to the client.

9.2.5 It is a good practice to provide the Safety Data Sheet, product label and certificate of registration of pesticide/ vector repellent issued by NEA (where applicable) for the client's reference. VCO shall consult the product supplier or manufacturer if further information on the pesticide is required, such as suitability of use in sensitive environment (e.g. food handling premises, childcare centres, hospitals etc.).

9.3 Transportation and Storage of Pesticides

9.3.1 Pesticides shall only be stored in their original containers or transferred to appropriate containers labelled in accordance to the original product label.

9.3.2 Pesticides shall be stored safely in a designated location for storage, such as in a well-ventilated shed, and away from flammable items. Storage of flammable chemicals shall also be in accordance to guidelines and regulations of the Singapore Civil Defence Force (SCDF).

9.3.3 Diluted pesticides shall be used up within the day.

9.3.4 [Required] Excess pesticides shall not be discharged directly onto the ground, any watercourse or drain, or in a manner that may contaminate the environment or pose a hazard to human health. It shall be collected for proper disposal by NEA-licensed toxic industrial waste collector (TIWC). The list of licensed TIWC can be found on NEA website at https://www.nea.gov.sg/our-services/pollution-control/hazardous-waste/toxic-waste-control/toxic-industrial-waste.

9.3.5 Used pesticide containers shall be handled and disposed of in a similar manner as stated in section 9.3.4, and not to be reused to store other substances.

9.3.6 If the pesticide contains a hazardous substance (HS) listed under the Environmental Protection and Management Act and its subsidiary legislations, a HS Licence/Permit is required from the NEA-Pollution Control Department.

9.3.7 VCO may refer to the Singapore Standard Code of Practice for the Transportation and Storage of pesticides (SS 615: 2016) for more information.

The standard is available for purchase at https://www.singaporestandardseshop.sg.

10. Acknowledgement

Permission to reproduce extracts from BS EN 16636:2015 (Pest management services - Requirements and competences) is granted by BSI. British Standards can be obtained in PDF or hard copy formats from the BSI online shop: www.bsigroup.com/Shop or by contacting BSI Customer Services for hardcopies only: Tel: +44 (0)20 8996 9001, Email: cservices@bsigroup.com.

Appendix 1

Register of Vector Control Technicians/Workers Employed by Contractor

The VCO should submit a list of names and VCT licence/ VCW certificate number of all the licensed technicians and certified workers to be deployed by the VCO to the client's premises. This register is to be submitted to the client prior to the commencement of a contract, for record purposes.

VECTOR CONTROL TECHNICIANS/ WORKERS EMPLOYED BY CONTRACTOR

Number of Vector Control Technician deployed for this Contract:	
Number of Vector Control Worker deployed for this Contract:	
Name of Supervisor-in-charge for this Contract:	
Date of update:	

Vector Control Technician

S/N	Name of Technician	NEA Licence Number	Full /Provisional Licence	Date of Licence Expiry

Vector Control Worker

S/N	Name of Worker	NEA Certificate Number	Full /Provisional Certificate	Date of Certificate Expiry

Appendix 2

Sample Baseline Survey Report for Mosquito Control Services for Construction Sites

1. Findings: *(for reference only)*

S/N	Stage of Work	Location/Blocks[#]	Mosquito breeding/ Potential breeding grounds	Recommendation
1	*Preliminary*	*Existing abandoned manhole*	*Collect rain water*	*To demolish and backfill* ***[Insert Photo]***
2	*General*	*Worksite ground level*	*Area too large for VCO to cover within two hours*	*Propose zonings (not more than 7 zones) and all zones to be covered within a week.* ***[Insert Photo]***
		Bus-stop outside the worksite	*Receptacles littered by members of public*	*To conduct regular housekeeping along perimeter fence (especially at the bus-stop).*
3	*Substructure*	*Open cut excavation with Contiguous Bored Pile (CBP) and strutting*	*Stagnant water on strutting and walers*	*Provide openings in struts/ walers to prevent water collection.* *Design shoring system without struts.*
		Basements *Ejector pit / lift pits / IC(s)*	*Stagnant water, dark area.*	*Temporarily seal the area if possible*

4	*Superstructure*	*Roof of all blocks*	*Housing for portable gondola brackets. Collect stagnant water if choked.*	*Ensure all housings are not choked and all openings properly sealed.*
		Precast staircase / air-con ledge	*Stagnant water collected at lifting point*	*Immediately seal after the precast member is installed.*
		Multi-Storey Carpark	*Stagnant water in planter boxes at roof garden area*	*Apply larvicide and to remove stagnant water regularly.*

[#]**To insert photos of the location if available**

2. Comments, if any (To insert “Sample Mosquito Surveillance Report”)

Report Prepared and Submitted by: (*Vector Control Operator*)	**Acknowledged by: (*Superintending Officer*)**	**Accepted by: (*Project Manager*)**
Name:	**Name:**	**Name:**
Designation:	**Designation:**	**Designation:**
Signature:	**Signature:**	**Signature:**
Date:	**Date:**	**Date:**

Sample Baseline Survey Report for Mosquito Control Services for Condominiums, Town Councils and Schools

1. Findings: *(for reference only)*

S/N	Location[#]	Mosquito breeding/ Potential breeding grounds	Recommendation
1	*Open areas*	*Unused containers and discarded receptacles.*	*Overturn the containers and keep the rims and base of pails dry. Remove unwanted receptables.*
		Ground puddles/ Depressions: Collection of rainwater	*Back-fill puddles or depressions permanently*
2	*Roof Top*	*Under the water tanks: Stagnant water due to rain accumulation, overflows and leakage from pipes.*	*Shield tanks from rain; Fix leaking pipes; Apply BTI briquettes periodically.*
		Scupper drain: Stagnant water due to uneven floor and clogged drains.	*Re-grade uneven floor and drain; Carry out regular cleaning to prevent blockage.*
3	*Common areas*	*Gully and floor traps*	*Install anti-mosquito valves into floor traps; Clear blockages in traps; Seal up traps that are no longer in use.*
		Water features: Stagnant water at corners of ponds or fountains which is not circulating; Collection of water in depression of fountain features structure	*Eliminate depression of water features to allow water to flow; Introduce fish that are natural predators of mosquito larvae into ponds*

		Tree holes, bifurcation between branches, and thick leaf axils: Collection of water	*Seal up all tree holes and depressions permanently with ferns or sand; Avoid planting vegetation with thick leaf axils*

[#]To insert photos of the location if available

2. Comments, if any (To insert “Sample Mosquito Surveillance Report”)

Report Prepared and Submitted by: (*Vector Control Operator*)	**Accepted by: (*Client*)**
Name:	**Name:**
Designation:	**Designation:**
Signature:	**Signature:**
Date:	**Date:**

Sample Baseline Survey Report for Rodent Control Services for Construction Sites

1. Findings: *(for reference only)*

S/N	Location[#]	Findings			Probable cause of rodent burrow/ infestation	Action taken and recommendation
		Signs of infestation	**No. of burrow(s)**	**No. of nest(s)**		
1	*Turf area opposite Living Quarters* ***[Insert Photo]***	*Examples: Burrows*			*Examples: Littering*	*Examples: Seal up burrows* ***[Insert Photo]***
2	*Office* ***[Insert Photo]***	*Rodent droppings*			*Unkempt premises*	*Seal up crevices* ***[Insert Photo]***
		Live rodents			*Bin chute area*	
		Rub marks			*Renovation site*	
					Defects in Bin centre	
					Poor housekeeping	
					Indiscriminate disposal of food waste	
3						
4						

[#]To insert photos of the affected areas and the follow up treatment made.

2. Comments, if any

Report Prepared and Submitted by: (*Vector Control Operator*)	**Acknowledged by: (*Superintending Officer*)**	**Accepted by: (*Project Manager*)**
Name:	**Name:**	**Name:**
Designation:	**Designation:**	**Designation:**
Signature:	**Signature:**	**Signature:**
Date:	**Date:**	**Date:**

Sample Baseline Survey Report for Rodent Control Services for Food Establishment, Supermarket, Shopping Mall, Condominiums, Town Councils and Schools

1. Findings: *(for reference only)*

S/N	Location[#]	Findings			Probable cause of rodent burrow/ infestation	Action taken and recommendation
		Signs of infestation	No. of burrow(s)	No. of nest(s)		
1	*Storage area* ***[Insert Photo****]*	*Examples: Rodent droppings*			*Examples: Refuse chute*	*Examples: Baiting done* ***[Insert Photo]***
2	*Service counters* ***[Insert Photo]***	*Rodent droppings*			*Bin centre*	*Replace faulty gully traps* ***[Insert Photo]***
3	*Outdoor service yard* ***[Insert Photo****]*	*Live rodents*			*Food establishment*	*Seal up crevices* ***[Insert Photo]***
		Burrows			*Construction site*	*Carry out treatment and seal inactive burrows*
		Rub marks			*Renovation site*	*Seal up crevices (i.e. entry/exit points)*
					Indiscriminate disposal of food waste outside premises	
					Poor housekeeping	

4	*False Ceilings of Food Establishment* ***[Insert Photo****]*	*Rodent droppings*			*Food items left around the store*	*Keep all non-refrigerated food in rodent proof receptables (e.g. covered or tightly lid jars, containers etc)*
		Gnaw marks			*Holes and gaps found in the false ceiling serve as entry points*	*Seal up crevices (i.e. entry/exit points)* ***[Insert Photo]***
5	Sidewalk ***[Insert Photo****]*	*Burrows*			*Weeds, shrubs and bushes*	*Trim overgrown grass, bushes and shrubs near building façade*

[#]**To insert photos of the affected areas and the follow up treatment made.**

2. Comments, if any

Report Prepared and Submitted by: ***(Vector Control Operator)***	**Accepted by:** ***(Client)***
Name:	**Name:**

Designation:	**Designation:**
Signature:	**Signature:**
Date:	**Date:**

Sample Service Report for Mosquito Control Services for Construction Sites

Date: _____ Time In: _____ Time Out: _____

Details of the Vector Control Technician/ Vector Control Worker present for this service

S/N	Name of Vector Control Technician	NEA Licence Number	Full /Provisional Licence

S/N	Name of Vector Control Worker	NEA Certificate Number	Full /Provisional Certificate

Types of Breeding Habitat Found	Location of Findings at or around the Worksite (Zone / Block / Level / Unit)	Actions Taken (including the chemical used and its quantity) and Comments

Types of Sanitation/ Hygiene/Housekeeping Lapses Identified	Location of Sanitation/ Hygiene/ Housekeeping Lapses at or around the Worksite (Zone / Block / Level / Unit)	Actions Taken (including the chemical used and its quantity) and Comments

a) Action taken following the recommendation given in the previous report

Recommendation given in the Baseline Survey Report/ previous Service Report	Action Taken

b) Comments, if any (To insert “Sample Mosquito Surveillance Report”)

Report Prepared and Submitted by: *(Vector Control Operator)*	Acknowledged by: *(Superintending Officer)*	Accepted by: *(Project Manager)*
Name:	**Name:**	**Name:**
Designation:	**Designation:**	**Designation:**
Signature:	**Signature:**	**Signature:**
Date:	**Date:**	**Date:**

Sample Service Report for Mosquito Control Services for Condominiums, Town Councils and Schools

Date: _____ Time In: _____ Time Out: _____

Details of the Vector Control Technician/ Vector Control Worker present for this service

S/N	Name of Vector Control Technician	NEA Licence Number	Full /Provisional Licence

S/N	Name of Vector Control Worker	NEA Certificate Number	Full /Provisional Certificate

Types of Breeding Habitat Found	Location	Actions Taken (including the chemical used and its quantity) and Comments

Types of Sanitation/ Hygiene/Housekeeping/ Structural Defect Lapses Identified	Location of Sanitation/ Hygiene/ Housekeeping/ Structural Defect Lapses	Actions Taken (including the chemical used and its quantity) and Comments

a) Action taken following the recommendation given in the previous report

Recommendation given in the Baseline Survey Report/ Previous Service Report	**Action Taken**

b) Comments, if any (To insert “Sample Mosquito Surveillance Report”)

Report Prepared and Submitted by: *(Vector Control Operator)*	**Accepted by: (*Client*)**
Name:	**Name:**
Designation:	**Designation:**
Signature:	**Signature:**
Date:	**Date:**

Sample Service Report for Mosquito Control Services for Homeowners

Date: _____ Time In: _____ Time Out: _____

Details of the Vector Control Technician/ Vector Control Worker present for this service

S/N	Name of Vector Control Technician	NEA Licence Number	Full /Provisional Licence

S/N	Name of Vector Control Worker	NEA Certificate Number	Full /Provisional Certificate

Types of Breeding Habitat Found	Location	Actions Taken (including the chemical used and its quantity) and Comments
Plants (e.g. flowerpot plate, plant axils, hardened soil)	*Living room and Bedroom*	*Flip the flowerpot plate; Clear the axils; Loosen the hardened soil*
Domestic and ornamental containers (e.g. vase, fountain, pail, toilet brush/toothbrush holder, kitchen dish rack/ drying tray)		*Turn the pail over and wipe rims dry; Remove excess water by tipping vase/brush holders; Change water in the fountain and scrub the surfaces regularly; Wipe dry the dish rack/drying tray*
Fallen tree branches, leaves in the drains and tree holes may collect water. Large fallen leaves may also collect rain water	*Surrounding areas*	*Clear fallen tree branches and leaves from drains and seal up tree holes in gardens. Remove fallen leaves from gardens.*

Blockage at roof gutter within compounds or warped gutters leading to collection of stagnant water		*Treat potential breeding habitats such as roof gutter with Bti* pesticide *once a month. To replace and/remove the damaged roof gutter permanently.*
Undulating surface of water features may collect rain water.		*Ensure no stagnant water. Add sand granular* pesticide *to water features.*
Inspection/manhole covers		*Close inspection covers properly after maintenance. Seal up keyholes and gaps around covers*
Rarely-used gully traps in toilets	*Toilet*	*Cover rarely-used gully traps and install anti-mosquito valves*
Unused toilet bowl		*Cover toilet seat cover and seal to prevent mosquito breeding*
Water storage containers		Turn over and keep water storage containers (e.g. pails) dry when not in use
Dish rack/drying trays	*Kitchen*	*Clear water from dish rack/drying trays*
Bamboo pole holders		*Cover the bamboo pole holders when not in use*

Types of Sanitation/ Hygiene/Housekeeping/ Structural Defect Lapses Identified	**Location of Sanitation/ Hygiene/ Housekeeping/ Structural Defect Lapses**	**Actions Taken (including the chemical used and its quantity) and Comments**

a) Action taken following the recommendation given in the previous report

Recommendation given in the previous Service Report	**Action Taken**

b) Comments, if any

Report Prepared and Submitted by: *(Vector Control Operator)*	**Acknowledged by: (*Premise owner*)**
Name:	**Name:**
Designation:	**Designation:**
Signature:	**Signature:**
Date:	**Date:**

Sample Mosquito Surveillance Report

(for reference only)

Location of the trap deployed	*Example: Worksite ground level Zone 1*
Date of the trap deployed	*1/1/2020*

Week	**No. of mosquito samples collected**	**Trap status (Functional/ non-functional)**	**Remarks**
1	*15*	*Functional*	*Before treatment (Baseline)*
2	*5*	*Functional*	
3	*2*	*Non-Functional*	*Replace trap*

Sample Service Report for Rodent Control Services for Construction Sites

Date: _____ Time In: _____ Time Out: _____

Details of the Vector Control Technician/ Vector Control Worker present for this service

S/N	Name of Vector Control Technician	NEA Licence Number	Full /Provisional Licence

S/N	Name of Vector Control Worker	NEA Certificate Number	Full /Provisional Certificate

a) Rodent activity/ burrows identified *(for reference only)*

Date	Time (Hrs)	Location[#]	Findings			Probable cause of rodent burrow/ infestation	Action taken (including the chemical used and its quantity)	Recommendation
			Signs of infestation	No. of burrow(s)	No. of nest(s)			
1 Jan 19	*2200*	*Turf area opposite Workers' Quarters* ***[Insert Photo]***	*Examples: Burrows*			*Examples: Littering*	*Examples: Carry out first rodenticide dusting of burrows* ***[Insert Photo]***	

[#] **To insert photos of the affected areas and the follow up treatment made.**

b) Preventive measures taken

Location[#]	No. of trapping devices deployed[#]		No. of baiting stations[#]	No. of rodents removed			Total no. of rodents removed
	Glue Board	Cage		Date	Trapped	Dead	
Example: Storage area ***[Insert photo]***	***[Insert photo]***	***[Insert photo]***	***[Insert photo]***				

[#] **To insert photos of the affected areas and the follow up treatment made.**

c) Action taken following the recommendation given in the previous report

Recommendation given in the Baseline Survey Report/ previous Service Report	Action Taken

d) Comments, if any

_____

_____

Report Prepared and Submitted by: *(Vector Control Operator)*	Acknowledged by: *(Superintending Officer)*	Accepted by: *(Project Manager)*
Name:	**Name:**	**Name:**
Designation:	**Designation:**	**Designation:**
Signature:	**Signature:**	**Signature:**
Date:	**Date:**	**Date:**

Sample Monthly Service Report for Rodent Control Services for Construction Sites

Consolidated findings for (Month)

Date	No. of Rodent burrows			No. of Rodent nests detected	No. of trapping devices deployed		No. of baiting stations	No. of rodents removed		Total no. of rodents removed
	Found	Treated	Sealed		Glue Board	Cage		Trapped	Dead	
Total										

a) Action taken following the recommendation given in the previous report

Recommendation given in the Baseline Survey Report/ previous Service Report	Action Taken

b) Comments, if any

Report Prepared and Submitted by: *(Vector Control Operator)*	Acknowledged by: (Superintending Officer)	Accepted by: *(Project Manager)*
Name:	**Name:**	**Name:**
Designation:	**Designation:**	**Designation:**
Signature:	**Signature:**	**Signature:**
Date:	**Date:**	**Date:**

Sample Service Report for Rodent Control Services for Food Establishment, Supermarkets, Shopping Mall, Condominiums, Town Councils and Schools

Date: _____ Time In: _____ Time Out: _____

Details of the Vector Control Technician/ Vector Control Worker present for this service

S/N	Name of Vector Control Technician	NEA Licence Number	Full /Provisional Licence

S/N	Name of Vector Control Worker	NEA Certificate Number	Full /Provisional Certificate

a) Rodent activity/ burrows identified *(for reference only)*

Date	Time (Hrs)	Location#	Findings			Probable cause of rodent burrow/ infestation	Action taken (including the chemical used and its quantity)	Recommendation
			Signs of infestation	No. of burrow(s)	No. of nest(s)			
1 Jan 19	*2200*	*Example: Storage area **[Insert Photo**]*	*Example: Live rodents*			*Example: Refuse chute*	*Example: Baiting done **[Insert Photo]***	*Example: Rodent proof door to storage area*
		Plant trough at basement 1 outside xx shop	*Live rodents*			*Refuse chute*	*Baiting done **[Insert Photo]***	

		[Insert Photo]						
		XX food stall in YY food court ***[Insert Photo]***				*Bin centre*	*Seal up crevices* ***[Insert Photo]***	
		School Canteen ***[Insert Photo]***	*Gnaw marks*			*Uncleared food spillage*	*Clean up food spills and debris promptly. Store food waste in trash cans with tight-fitting lids or spring closing covers. Empty and clean the trash cans regularly.* ***[Insert Photo]***	
		Cracks, holes and openings in buildings ***[Insert Photo]***	*Rub marks*			*Cracks and holes allow rodents to travel within buildings*	*Fill up gaps and large holes; Install heavy gauze sheet metal between foundations and the ground* ***[Insert Photo]***	

[#] **To insert photos of the affected areas and the follow up treatment made.**

b) Preventive measures taken during the past 1 month

Location[#]	**No. of trapping devices deployed[#]**		**No. of baiting stations[#]**	**No. of rodents removed**			**Total no. of rodents removed**
	Glue Board	**Cage**		**Date**	**Trapped**	**Dead**	
Example: Storage area	***[Insert photo]***	***[Insert photo]***	***[Insert photo]***				

[Insert photo]							

[#] **To insert photos of the affected areas and the follow up treatment made.**

Consolidated findings

Month	**No. of rodent burrows**			**No. of rodent nests detected**	**No. of trapping devices deployed**		**No. of baiting stations**	**No. of rodents removed**		**Total no. of rodents removed**
	Found	**Treated**	**Sealed**		**Glue Board**	**Cage**		**Trapped**	**Dead**	
Jan										
Feb										
Mar										
Apr										
May										
Jun										
Jul										
Aug										
Sep										
Oct										
Nov										
Dec										
Total										

c) Action taken following the recommendation given in the previous report

Recommendation given in the Baseline Survey Report/ previous Service Report	**Action Taken**

d) Comments, if any

_____

_____

_____

Report Prepared and Submitted by: *(Vector Control Operator)*	**Accepted by: (*Client*)**
Name:	**Name:**
Designation:	**Designation:**
Signature:	**Signature:**
Date:	**Date:**

Appendix 3

[Required] NEA Registration Mark

Under section 8 of the CVPA, pesticide/ repellent that has been successfully registered shall be required to clearly show a registration mark in a conspicuous position on the label of every container or package of the product. The registration mark comprises:

i) A unique registration number in the form of 'SINNEA-X-XXX/XXX/XXXX'; and
ii) A registration logo.

The registration logo is made up of a double-tick atop two rings of varying thicknesses, and the words "NEA REGISTERED VECTOR CONTROL PRODUCT" as shown in any of the 3 colours below.

Full-colour	One-colour (Black)	One colour (White)
		

Appendix 4

Sample Checklist for Site Assessment

The following checklist is a guide to evaluate if premises with any potential vector infestations is properly managed. It may also be used to determine if there are any signs or evidence that vectors are present within the premises.

Date of Inspection	
Name of Vector Control Operator	
Name of Vector Control Technician/ Vector Control Worker	
Name of Client	
Address of Premises	

S/N	Item	Yes	No
	Assessment of Premises		
1	Are there water sources around the building (e.g. leaking tap, condensation around plumbing)?		
2	Is there a common waste disposal facility near the building?		
3	Is there vegetation surrounding the building?		
4	Is there food waste in undesignated areas?		
5	Is there construction activity nearby?		
6	Is the premises next to a vacant plot of land/ construction site?		
	Management of Physical Premises		
7	Is there debris or waste accumulation around the exterior of building?		
8	Are waste bins/ bulk bins clean, in good working condition and properly covered?		
9	Are doors and other openings to the outside of the building tightly fitted, with no visible gaps?		
10	Are door sweeps installed along the base of doors?		
11	Are all screens for windows and doors in place and in good working condition?		
12	Are there cracks, holes or crevices in or around the walls, doors or windows?		
13	Is there accumulation of food spills, food debris, liquid and dust?		
14	Are all food products stored in insect and pest proof containers?		

15	Are all waste bins lined with bags, covered at all times and emptied/ removed from the facility daily?		
16	Is there any build-up of debris or grime at hard to reach areas (e.g. under the cooking range)?		
	Investigating for Evidence of Pests		
17	Is there evidence of damage or debris caused by insects?		
18	Is there evidence of rodent infestation (e.g. burrows, droppings, urine stain, rub marks)?		
19	Are gnaw marks or bite marks visible on any materials in the premises?		
20	Are insects present in any traps (e.g. stick traps, insect light traps) in the premises?		
21	Is there evidence of cockroach infestation (e.g. droppings, faecal smear, dead cockroach body, egg case)?		
22	Is there evidence of pest breeding (e.g. piles of nesting material, accumulation of larva)?		