CODE OF PRACTICE FOR ENVIRONMENTAL CONTROL OFFICERS FOR SPECIFIED CONSTRUCTION SITES

5th Edition

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FOREWORD

Construction sites may be located near residential and built-up areas. To ensure that residents are not subject to nuisances or public health hazards, occupiers of such construction sites must pay great attention to environmental health issues that may arise from their worksites.

To help occupiers of such construction sites identify and rectify these problems before work commences and as the construction work progresses, the National Environment Agency (NEA) launched the Environmental Control Officers (ECO) Scheme for Specified Construction Sites (SCS) on 1 April 2000. Under the ECO (SCS) scheme, qualified personnel are trained to handle matters relating to environmental management, focusing on areas such as vector control, noise control, food hygiene and waste management.

This Code of Practice for Environmental Control Officers for Specified Construction Site spells out the roles and responsibilities of ECOs(SCS) and occupiers and provides a reference to guide them in their daily work.

Director-General of Public Health
National Environment Agency Singapore

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CODE OF PRACTICE
FOR ENVIRONMENTAL CONTROL OFFICERS FOR CONSTRUCTION SITES [ECOs(SCS)]

1 Introduction

1.1 This Code of Practice (COP) is intended to guide Environmental Control Officers for Specified Construction Sites [ECOs(SCS)] and Occupiers in carrying out works in compliance with the Environmental Public Health (Registration of Environmental Control Officers) Regulations.

1.2 The COP can be downloaded at https://www.nea.gov.sg/corporate-functions/resources/practices-and-guidelines/practices#2

1.3 For clarifications on the COP, please enquire via the NEA online feedback form at https://www.nea.gov.sg/.

2 Definitions

2.1 In this Code, unless otherwise specified: -

2.1.1 "works", in relation to a construction site, means-

(a) the erection, construction, alteration, repair or maintenance of buildings, structures or roads;

(b) the breaking up or opening of, or boring under, any road or adjacent land in connection with the construction, inspection, maintenance or removal of works;

(c) demolition or dredging works; or

(d) any other work of engineering construction.

2.1.2 "Full-time Environmental Control Officer for Specified Construction Site" means an ECO(SCS) appointed on a full-time basis to carry out his or her function as such for the specified construction site for at least 40 hours per week.

2.1.3 "Part-time Environmental Control Officer for Specified Construction Site" means an ECO(SCS) appointed on a part-time basis to carry out his or her function as such for the specified construction site for at least 15 hours per week

2.1.4 "Contract sum", in relation to a construction site, means the total value of the works to be carried out on the construction site as stated in the applicable contract (including any goods and services tax chargeable under the Goods and Services Tax Act (Cap. 117A).

2.1.5 Pointers under Section 5 and 6, which are marked with "#" refer to mandatory duties of an ECO(SCS) or Occupier under the Environmental Public Health (Specified Construction Sites) Regulations 2021. Other legal obligations such as Control of Vector Pesticide Act 1998 and Environmental Protection and Management Act 1999 are also to be complied with.

3 Construction sites requiring ECO(SCS)

3.1 Occupiers of specified construction sites are required to appoint either a part-time or full-time ECO(SCS) depending on the contract sum of the construction works as shown in the table below:

Contract sum of Construction works	Type of ECO(SCS) required
$10 million & below	Not required
Exceed $10 million but not exceeding $50 million	Part-time ECO(SCS)
Exceed $50 million	Full-time ECO(SCS)

4 Registration of ECO(SCS)

4.1 Applicant with the requisite qualifications must complete a training course and pass the exam for ECOs before he can be registered as an ECO(SCS).

4.2 Registration and renewal of registration shall be made via the Whole-of-Government business licensing portal GoBusiness, at https://www.gobusiness.gov.sg/licences, and accompanied with a licence fee. A Certificate for Registration for ECO(SCS) (Appendix 1), which is valid for a stipulated licence period, will be issued upon approval.

4.3 It is an offence under the Environmental Public Health Act 1987 for an individual to act as an ECO(SCS) unless the individual is registered as such, and the registration is not suspended. Likewise, the Occupier must appoint a registered ECO(SCS) as the ECO(SCS) for the specified construction site.

4.4 An ECO(SCS) shall produce his/her Environmental Control Officer Certificate of Registration for inspection, when required by authorised officers.

5 Role and Duties of ECO(SCS)

5.1 In general, the role of an ECO(SCS) is to work with the Premises Manager (PM)/ Occupier of the construction site to comply with environmental laws, advise PM/ Occupier on environmental remediation measures, carry out site inspections and to engage workers and stakeholders on maintaining good environmental health standards.

5.2 The environmental issues which the ECO(SCS) are required to pay attention to are:

i. Vector Control
ii. Food Hygiene
iii. Waste Management
iv. Noise Management
v. Air Pollution and Dust Abatement
vi. Earth Littering
vii. Water Pollution and Earth Control
viii. Sanitary Facilities Management

5.3 The duties of an ECO(SCS) shall include the following:

(a) Develop a **Site Environmental Control Programme (SECP)** using the template provided in **Appendix 2**, for the specified construction site; #

(b) Review and update the SECP when: #

i. There is a change in ECO(SCS);
ii. There is a change in General Waste Collector (GWC) and/ or Vector Control Operator (VCO);
iii. There are any updates and/or changes to the environmental management plans; or
iv. There are any changes to the site layout

(c) Submit the developed, amended or updated SECP to the occupier of the specified construction site; #

(d) Prepare and submit to the occupier a **Site Environmental Control Report (SECR)** using the template provided in **Appendix 3, at least once a month or any other frequency required by NEA after the commencement of works on the specified construction site**; #

(e) Inspect the construction site to ensure all facilities, equipment and operations do not pose any environmental health hazard; #

(f) Inspect the on-site canteen, if any, and dining areas to ensure that good hygiene practices are being observed, and the areas are well maintained with good housekeeping; #

(g) Identify and discuss environmental health irregularities or potential lapses with the Occupier of the construction site, and recommend corresponding measures to prevent or rectify such concerns; #

Pointers denoted by "#" are mandatory duties of an ECO(SCS)/ Occupier

(h) Attend to all feedback on any irregularities and inform the Occupier of the construction site accordingly; [#]

(i) Assist the authorities to investigate outbreaks of infectious, vector-borne or food-borne diseases at the construction site; and [#]

(j) Organise campaigns, training courses and other activities, where required, to develop and sustain the interest of workers in maintaining good environmental health standards.

6 Duties of Occupier of Specified Construction Site

6.1 The PM/ Occupier is responsible for all irregularities and violations at his/ her work site and shall carry out the following:

Site Environmental Control Programme (SECP) and Report (SECR)

(a) Endorse and submit the SECP prepared by the ECO(SCS) via FormSG, following the instructions given in **Appendix 2, within one month after** the commencement of works on the specified construction site [#]

(b) Endorse the SECR prepared by the ECO(SCS), file and make the reports available for inspection by the DGPH or any public health officer at any time; and to [#]

(c) Work with the ECO(SCS) to implement the recommendations made under the SECP and SECR. [#]

Notification of Appointment of ECO(SCS)

(d) Notify the DGPH on any changes in appointment of ECO(SCS) on the construction site via a partial re-submission of the SECP [change in ECO(SCS)]; [#]

(e) Appoint another ECO(SCS) within 14 days upon termination of appointment, suspension or cancellation of registration of the ECO(SCS) appointed for the construction site [#]; and

Others

(f) Work with the ECO(SCS) in maintaining good environmental health standards at the worksite;

(g) Facilitate the work of the ECO(SCS) by providing the necessary resources including facilities, equipment and information necessary to carry out environmental management work effectively and efficiently [#];

(h) Permit ECO(SCS) to attend courses, seminars, conferences and meetings as and when required by the DGPH and to reimburse them as required under the law [#]; and

(i) Require every personnel employed on the construction site to observe good environmental health practices.

[#] Pointers denoted by "[#]" are mandatory duties of an ECO(SCS)/ Occupier

7 Penalties

7.1 The ECO(SCS) scheme is regulated under the Environmental Public Health Act 1987. It is an offence for the ECO(SCS), or PM/ Occupier of the construction site, to contravene or fail to comply with any of the clauses stated in the Act or its subsidiary legislations. The various offences that are relevant to the ECO(SCS) and the PM/ Occupier of the construction site, are as shown in **Appendix 4**.

8 Guide on Recommended Practices in Construction Sites[1]

The following are recommended practices in construction sites to keep the worksite free from environmental health hazards. ECO(SCS) should apply suitable measures for their construction sites and ensure compliance with any other relevant Code of Practices and legal requirements for the respective environmental issues.

8.1 Vector Control

8.1.1 The ECO(SCS) and PM/ Occupier should identify high-risk areas and operations, throughout each stage of the construction project, that may result in breeding of vectors. The ECO(SCS) and PM/ Occupier shall draw up and implement an effective vector control programme, which outlines vector surveillance and control measures to eliminate, reduce and/or manage such risks.

8.1.2 Comprehensive vector control services must be engaged from the start of the project and carried out at least once a week. The Occupier must engage a competent NEA-registered Vector Control Operator (VCO) from the list of registered VCOs on https://nea.gov.sg/our-services/pest-control/pest-control-operators. The scope of work and responsibilities of the VCO should be spelled out in the contract. A template contract "Specifications for mosquito and rodent surveillance and control at construction sites" is available at https://nea.gov.sg/our-services/pest-control/rodent-control.

8.1.3 The PM/ Occupier should maintain good records of the vector control programme and vector control service reports from the VCO.

8.1.4 The performance of the VCO should be evaluated regularly. If the VCO service is unsatisfactory, the PM/ Occupier should terminate the contract and engage another VCO.

8.1.5 It is recommended that the worksite is divided into zones based on the number of workdays in a week (e.g., a maximum of 6 zones assuming a 6-days work week or 7 zones for a 7-days work week). The in-house Environmental Control Team should then be deployed to cover one zone per day to ensure good surveillance and housekeeping weekly.

[1] ECOs(SCS) are reminded to ensure compliance with any other relevant Code of Practices and legal requirements for the respective environmental issues.

Mosquito Control

- Regular checks should be conducted **at least once a week** at all areas, as part of source reduction measure to detect the stagnation of water and mosquito breeding.
- Good housekeeping should be maintained to prevent stagnation of water among receptacles and litter.
- High-risk areas and operations, as well as appropriate preventive and control measures, are further outlined in detail in **Appendix 5**.
- Sand granular insecticide should be applied to water collected in perforated bricks. Exposed brick holes should be sealed up with cement.
- Anti-mosquito oil or NEA registered larvicide should be applied to stagnant water at least once a week. The application should be repeated after wet weather as the oil and insecticides would be washed away by the rain.
- Thermal fogging should only be carried out by licensed VCO, using a suitable NEA registered insecticide. Fogging should only be carried out when the adult mosquito population is high or when there are mosquito-borne diseases transmission near construction sites. Routine thermal fogging as a preventive measure is not encouraged.
- If the site is situated in a malaria-sensitive area, the licensed VCO should carry out quarterly residual-spraying at the foreign workers quarters and site offices for the inner walls and at least once a month for the outer walls

Control of Rodents, Flies and Cockroaches

- Good housekeeping is achieved by keeping worksite litter-free and eliminating all harborage grounds.
- Refuse bins should always be covered and emptied at the end of each day
- Food are properly stored, and organic wastes are properly disposed in covered refuse bins, so that vectors do not have access to them.
- The canteen, dining areas and workers quarters are kept free from pests by ensuring good food handling and storage, and good housekeeping.
- Regular checks for burrows should be conducted. The ECO(SCS) and Occupier should work with the VCO to ensure active burrows undergo proper treatment until the rat population is wiped out, and then sealed properly.
- Check and seal potential rat entry points by using wire mesh, metal guards, etc.
- Should sludge be used for landscaping, the sludge should be covered with a layer of topsoil **at least 5 cm** thick to prevent breeding of flies.

Control of Infectious Disease

- Temperature checks for fever should be conducted daily for staff and visitors entering the construction site during dengue/ chikungunya/ zika outbreak periods or if there are cases in or in the vicinity of the site.
- Staff and visitors displaying symptoms of infectious diseases i.e. fever, should not be allowed to enter and/or work in the construction site.
- The PM/ Occupier should maintain records of all workers working at the construction site, including its employees and workers of sub-contractors. All foreign workers should be screened for history of malaria and blood films taken to exclude parasite carriers.
- The PM/ Occupier should monitor workers after their discharge from infectious diseases (e.g. period of one month for *P. falciparum*, and period of six months for *P. vivax*).

8.2 Food Hygiene

8.2.1 On-site canteens (if any) must obtain a licence from the Singapore Food Agency prior to its operation and the licence is to be renewed regularly. Operators have to comply with all related requirements and regulations. They may refer to the following link for more information on licensing: https://www.sfa.gov.sg/food-retail/licensing-permits/food-shop-licence#.

8.2.2 All food handlers working at the on-site canteen must attend and pass the Basic Food Hygiene Course and register with the Singapore Food Agency.

8.2.3 Food sold on the worksite should be prepared within the licensed premises or obtained from licensed sources. Only potable Public Utilities Board (PUB) water can be used for all food preparation.

8.2.4 All liquid food wastes must be drained into the sewerage system and not into open drains.

Food handling and storage

8.2.5 All ready-to-eat cooked food must be handled with tongs or other suitable utensils. In the event when tongs or suitable utensils are not suitable for use, food handlers are required to wear disposable gloves while handling cooked or ready-to-eat food. The disposable gloves must not be reused and should be disposed of after each use.

8.2.6 Food must not be prepared or stored in or near toilets or on the floor.

8.2.7 All refrigerators/freezers/chillers must be maintained in good working order and provided with temperature gauges. Food should be stored in chillers that are maintained between 0^{o}C and 4^{o}C, and in freezers that are maintained at 12^{o}C and below.

8.2.8 Food products or food ingredients must be kept in clean covered containers and stored at appropriate temperatures.

8.2.9 Food displayed for sale must be adequately covered.

Personal hygiene

8.2.10 Food handlers must not place their fingers to their mouth, eye, ear, nose or scalp when preparing or handling food; they must also not eat, chew, smoke, spit, cough, sneeze or comb their hair when preparing or handling food.

8.2.11 Food handlers must wash their hands thoroughly and frequently before and after preparing food and after visiting the toilets. This is necessary even when the food handler wears gloves for food handling.

8.2.12 Food handlers must protect any open wound or lesion on their hands with waterproof dressings.

8.2.13 Food handlers must not prepare or handle food if they feel unwell (for e.g. vomiting, diarrhea or fever) or if they have infected wounds, skin infections or sores.

Equipment

8.2.14 All equipment, crockery and utensils must be kept clean and properly maintained at all times. Defective equipment/ utensils/ crockery that are chipped and cracked should not be used.

8.2.15 Separate chopping boards, tongs, scoops, forks, gloves or other utensils should be used for handling raw, ready-to-eat and cooked food to prevent cross contamination.

8.2.16 Exhaust fans and grease filters should be serviced regularly to ensure they are in good working condition. Cooking hoods should be clean and free from oil drips, hardened grease and soot stains.

8.3 Waste Management

8.3.1 Engage only licensed general waste collector for the collection and disposal of waste generated. Ensure a valid written agreement for the waste collection services and invoices are available for reference when required. The construction waste/debris should be sent to a licensed general waste disposal facility for further processing.

8.3.2 All designated waste collection points must be easily accessible by the waste collection vehicle.

8.3.3 Use dedicated bins to store recyclables, non-incinerable waste, incinerable waste and putrefiable waste. The bins shall be of a shape, size and design as may be approved by the DGPH from time to time.

8.3.4 The number of bins provided for each type of waste must be adequate. There should be no spillage of waste around any bin at any time.

8.3.5 Putrefiable waste should be removed daily to prevent any environmental health issue. All putrefiable waste should be bagged before disposal into bins. All bins for putrefiable waste should be of SS EN 840 standard wheeled bin with maximum size of 660 litres and properly covered when not in use.

8.3.6 Construction wastes/ debris should be stored in skips placed at a location easily accessible to waste removal vehicles.

8.4 Noise Control

8.4.1 Advise the occupier to reduce noise generated at the worksites by taking the following measures:

i. use quieter equipment and methods to reduce noise generated from the construction site;

ii. restrict noisier activities like piling, concreting and demolition to day-time;

iii. use pre-cast concrete panels;

iv. use noise barrier and noise curtains to help reduce the noise generated;

v. use electricity supply from SP Power Grid instead of generators, where possible. If generators are used, they should be of the silent type and be sited away from residential areas;

vi. maintain and service all equipment and machinery regularly to reduce noise and smoke emission;

vii. engage affected residents of the construction work and keep them informed of impending noisy construction works, especially at night. Wherever possible, avoid noisy activities late at night;

8.4.2 Construction works are prohibited from being carried out on Sundays and Public Holidays for sites that are located within 150m from noise sensitive premises, unless it is for safety reasons or for emergency works;

8.4.3 The main contractor of the construction site must also ensure that their sub-contractors comply with the noise limits

8.4.4 Occupiers must update NEA when there are changes to the key personnel on site (i.e. Project Manager, ECO(SCS), Safety Officer etc.)

8.4.5 Make arrangements to set up noise monitoring meters to continuously measure and record the noise levels over a period of 12 hours, 1 hour and 5 minutes in dBA.

8.4.6 The type of noise meters to be installed and the permissible noise limits are as follows:

Type of Project	**Type of Noise Meter**
Project cost less than $3 million	***Standalone** noise meter
Project cost more than $3 million	****Real-time** noise meter
Demolition & piling	****Real-time** noise meter
*Standalone meter – Noise meters where the data can only be accessed manually **Real-time noise meter – Noise meters, which can continuously transmit data wireless for viewing through smartphones or PC/laptop All meters must comply to IEC 61672 Class 1 or equivalent	

Table 1: Types of noise meters

8.4.7 Occupiers using standalone noise meters are required to submit the noise monitoring charts on a weekly basis to the Pollution Control 2 Division. Occupiers using real time noise meters are required to submit to PCD the username and password.

8.4.8 Occupiers using real time noise meters are required to be familiar with predictive readings to ensure compliance to the noise limits

8.4.9 It is the occupier's responsibility to ensure that the noise meters are monitoring the noise levels continuously and are in working condition at all times.

Types of affected buildings	7am - 7pm	7pm - 10pm	10pm - 7am
(a) Hospitals, schools, institutions of higher learning, homes for aged sick, etc	60 dBA (Leq 12 hrs)	50 dBA (Leq 12 hrs)	
	75 dBA (Leq 5 mins)	55 dBA (Leq 5 mins)	
(b) Residential buildings located less than 150m from the construction site	75 dBA (Leq 12 hrs)	65 dBA (Leq 1 hr)	55 dBA (Leq 1 hr)
	90 dBA (Leq 5 mins)	70 dBA (Leq 5 mins)	55 dBA (Leq 5 mins)
(c) Buildings other than those in (a) and (b) above	75 dBA (Leq 12 hrs)	65 dBA (Leq 12 hrs)	
	90 dBA (Leq 5 mins)	70 dBA (Leq 5 mins)	

Table 2: Permissible Noise Limits (Mon – Sat)

* Leq 12 hours, Leq 1 hour and Leq 5 min are the equivalent continuous noise levels over a period of 5 minutes, 1 hour and 12 hours respectively

8.5 Air pollution and Dust Nuisance

8.5.1 Open burning of construction and other wastes are not allowed at the worksite as this is an offence under the Environmental Pollution and Management Act 1999.

8.5.2 Effective measures such as water sprinklers/spray, shielding, netting, covers/hoarding for aggregate and sand storage should be taken to minimise dust pollution caused by construction or demolition works. The netting or barriers on the scaffolding of the construction site shall be of suitable height for effective containment of dust and debris.

8.5.3 All construction debris should be properly stored and removed for disposal quickly. They should not be left to accumulate at the site.

8.5.4 Debris chutes to transfer construction debris efficiently from higher floors to the ground floor should be provided to prevent dust nuisance. The internal of the chutes shall also be lined with suitable material to prevent noise pollution.

8.5.5 Construction sites with concrete batching plants must have a Written Permission (WP) from the Director, Pollution Control 1 Division to occupy and operate as a Scheduled Premises. The occupier operating the concrete batching plant must comply with all the conditions stipulated in the WP.

8.5.6 All construction equipment and machinery must be well maintained and should not emit dark smoke.

8.5.7 The use of generators should be minimised by setting up permanent power supply with the electricity provider. Generators should be sited at locations that minimise the smell and noise nuisance affecting nearby residential premises or other sensitive receptors.

8.6 Earth littering

8.6.1 Lorries should not be overloaded while transporting earth, debris, etc. as this may lead to spillage and littering of roads.

8.6.2 All vehicles carrying refuse, sand, earth, gravel, clay, stone, or any other similar material must be completely and adequately covered as stipulated in Environmental Public Health (Public Cleansing) Regulations 14(2) and Road Traffic Rules (R18), before they leave the construction site.

8.6.3 A paved wash bay is to be provided for washing of vehicles (e.g. lorry tyres and undercarriages) before they leave the worksite. All washings from the wash bay should be channeled to a silt trap.

8.7 Earth Control Measures

8.7.1 The site operator/owner shall submit a detailed Earth Control Measures (ECM) proposal, endorsed by a Qualified Erosion Control Professional (QECP) to the relevant authorities for an approval.

8.7.2 A system of ECM including silty water treatment plant, holding pond, temporary perimeter lined cut-off drains, silt fences and silt traps is to be implemented within the worksite in accordance with the approved ECM plan before commencement of any earthworks or construction works to prevent the wash down of silt, earth, and debris from the worksite into the public drains and adjacent premises.

8.7.3 Water run-off from the worksite is to be channeled to the holding pond and silty water treatment plant for treatment and is not to be discharged directly into the public drains.

8.7.4 Earth control measures including the silty water treatment plants, holding pond, temporary perimeter lined cut-off drains, silt fences and silt traps are to be maintained and desilted regularly.

8.7.5 Earth surfaces or slopes adjacent to any drain shall be closed turfed, paved or covered with appropriate materials.

8.7.6 Minimise the extent and duration of any exposed bare erodible surface in construction site by adopting proper construction staging and work sequencing. Bare surfaces shall be covered up with appropriate materials before rain and daily works should be halted to reduce the volume of silty water to be contained and treated. As a good practice, all bare surfaces should also be covered up at the end of each work day in anticipation of any rain event after working hours.

8.7.7 The treatment of silty water shall be closely monitored, and the treatment shall be stopped immediately if silty water is being discharged to the public drain.

8.7.8 Drains in the vicinity of the worksite shall not be silted, altered or obstructed due to the construction works.

8.7.9 The discharge from any construction sites into public drains shall not contain Total Suspended Solids (TSS) in concentration greater than the prescribed legal limits.

8.7.10 The ECM shall not be removed before the completion of work. The site operator/owner shall inform the relevant authority prior to removal of the ECM on completion of the project.

8.8 Prevention of Water Pollution

8.8.1 All wastewater generated at the construction site must be properly treated and disposed of. No discharge of sewage or other untreated wastewater into drain or land is allowed.

8.8.2 Oil and chemical in drums, carboys, containers, etc. shall be stored in a designated storage area within a building or covered shed with concrete floors and facilities to contain any leak or spillage.

8.8.3 Waste oil and chemicals generated from site activities shall only be sent to a licensed toxic industrial waste collector for proper disposal.

8.8.4 A full containment bund wall should be provided for bulk storage oil tanks, including skid tanks. A collection sump should be provided to collect any spillage. All leaks and spillages in the storage area or construction site shall be collected and sent to a licensed toxic waste collector for proper disposal.

8.8.5 Any repair or servicing of vehicle, which requires waste oil to be disposed of should only be carried out if there are facilities to contain the waste oil.

8.8.6 Soil treatment is to be carried out only by trained operators of registered pest control companies. The operators shall comply fully with the water pollution control requirements for the use of termiticides in anti-termite soil treatment issued to the companies by the Pollution Control 1 Division, National Environment Agency.

8.9 Sanitary Facilities

8.9.1 All toilet facilities are to be connected to sewer or holding tank/ temporary septic tank approved by the Sewerage Department, Public Utilities Board. Where septic tank(s)/ holding tank(s) and/ or chemical/ portable toilet(s) are provided, they are to be regularly maintained. There should be no discharge of wastewater from the holding tank into the watercourse or controlled watercourse.

8.9.2 Ensure good drainage is provided for all temporary structures and connect drains to a proper outlet to prevent water ponding in the toilet facilities.

8.9.3 Toilets must be provided with amenities such as toilet paper, soap, litter bins and hand dryer and be kept clean at all times. They must not be used for storage purpose.

8.9.4 Adequate and proper sanitary facilities in working condition should be provided at the worksite and discharge points to be connected to septic tanks for disposal. The number of sanitary facilities required can be found in the Code of Practice on Environmental Health available at https://www.nea.gov.sg/corporate-functions/resources/practices-and-guidelines/practices#1.

Appendix 1: Certificate of Registration for ECO(SCS)

Sample copy



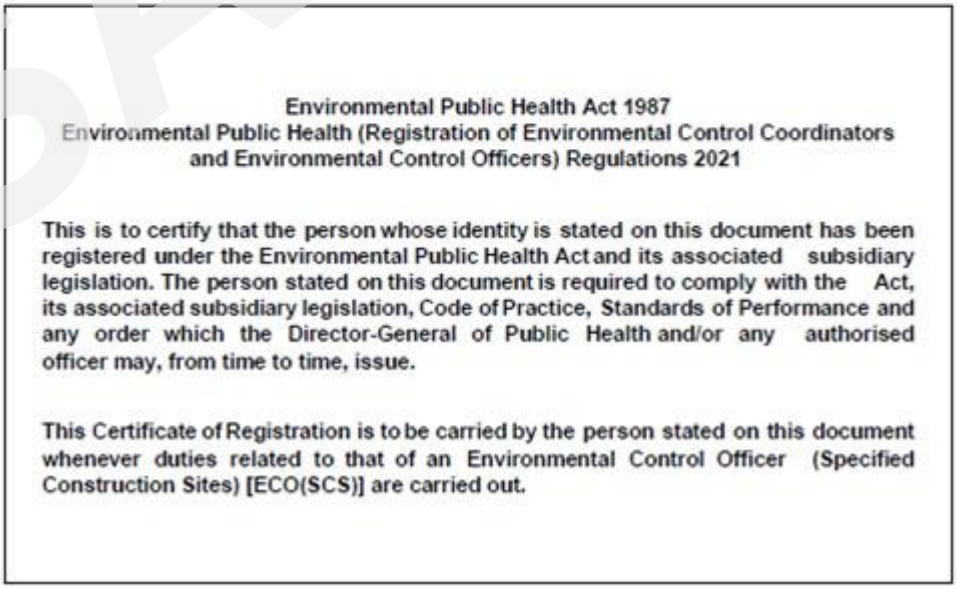
National Environment Agency

CERTIFICATE OF REGISTRATION FOR ENVIRONMENTAL CONTROL OFFICER (SPECIFIED CONSTRUCTION SITES)

Passport size photo will be inserted here

NAME:
NRIC/FIN:
REG NO:
DATE OF ISSUE:
DATE OF EXPIRY:

for Director
Development Control and Licensing Division



Environmental Public Health Act 1987
Environmental Public Health (Registration of Environmental Control Coordinators and Environmental Control Officers) Regulations 2021

This is to certify that the person whose identity is stated on this document has been registered under the Environmental Public Health Act and its associated subsidiary legislation. The person stated on this document is required to comply with the Act, its associated subsidiary legislation, Code of Practice, Standards of Performance and any order which the Director-General of Public Health and/or any authorised officer may, from time to time, issue.

This Certificate of Registration is to be carried by the person stated on this document whenever duties related to that of an Environmental Control Officer (Specified Construction Sites) [ECO(SCS)] are carried out.

SAMPLE

Appendix 2: Site Environmental Control Programme

Instructions

1) The ECO(SCS) and Occupier shall prepare and submit the SECP respectively within one month after the commencement of works on the specified construction site, to the National Environmental Agency (NEA) via FormSG. https://go.gov.sg/ecosecp

QR Code for Weblink



2) The ECO(SCS) and Occupier shall update and resubmit the SECP if:
   a. There is a change in ECO(SCS);
   b. There is a change in General Waste Collector (GWC) and/ or Vector Control Operator (VCO);
   c. There are any updates and/ or changes Environmental Management Plan; or
   d. There are any changes to the Site Layout

3) As there is no autosave or save as draft feature, you are advised to prepare the information required before starting the submission process.

4) Please attach the PDF version of the endorsed Declaration Form in Section E

One- Time Password Authentication

A verification code will be sent to the email address provided below.

Email: _____

Section A: General Details

1. Is this a revision of a previously submitted SECP?
(Yes/No)
If Yes: What amendment(s) was made? (Please tick the checkbox given in FormSG)

- ☑ *Change in ECO(SCS)*
- ☐ *Change in General Waster Collector (GWC) and Vector Control Operator (VCO)*
- ☐ *Changes in Environmental Management Plan*
- ☐ *Change in Site Layout*

If No: *please complete Sections A – D below*

Details of Construction Site

2. Name of Construction Company
Please state the company name in full

3. BCA Project Reference No.
e.g. E0123-00001-2002-ST01

4. Division of Construction Site
Please select the Division where the Construction Site is located. If the site spans across multiple Divisions, please use Site Office as the reference point.

5. Address of Construction Site and Land Lot Number
e.g. 123 Singapore Road Singapore 123456 Lot 12345C MK01

6. Contract Sum of Project
Please state the contract sum of the Project in SGD. (e.g. 50000000)

7. Number of Workers housed in on site
Please state the total number of workers staying on site. (e.g. 30)

8. Commencement Date from Letter of Award (LOA)
Please state the date in (DDMMYYYY) format.

Section B: Details of ECO(SCS)

If Question 1 "Is this a revision of a previously submitted SECP" is "Yes",
10. I will like to notify on a change in ECO(SCS).
(Yes/No)
If Yes:

10a. Name of Outgoing ECO(SCS)
Please state the full name of the Outgoing ECO(SCS).

10b. Outgoing ECO(SCS) Registration Number
Please state the Registration Number (e.g. FXXXXR, SXXXXQ, SXXXXP) of the outgoing ECO(SCS).

10c. Contractual Start Date of Outgoing ECO(SCS)'s Appointment
Please state the date in (DDMMYYYY) format.

10d. Contractual End Date of Outgoing ECO(SCS)'s Appointment
Please state the date in (DDMMYYYY) format.

11e. Reason for Discontinuing Employment
Please state the reason for discontinuing employment. (e.g. Not fulfilling the duty and responsibilities of an ECO(SCS).

If No: Please Proceed to the next Question

11. Details of ECO(SCS) Appointment

Name of Appointed ECO(SCS)	ECO(SCS) Registration Number (e.g. FXXXXR, SXXXXQ, SXXXXP)	Type of Appointment	Contact Number	Contractual Start Date of ECO(SCS) (DDMMYYYY)
Please state the full name of the appointed ECO(SCS).	*Please state the Registration Number (e.g. FXXXXR, SXXXXQ, SXXXXP) of the appointed ECO(SCS).*	*Full-Time/ Part- Time*	*Please provide the local contact number (without country code) of the appointed ECO(SCS) e.g. 91234567*	*Please state the date in (DDMMYYYY) format.* *e.g. 24062020 (24 June 2020)*

**Use the "+ Add More" element in FormSG if required.*

12. Contact Information of Project Manager

Name of Project Manager	Email Address	Contact Number
Please state the full name of the Project Manager.	*Please provide the email address of the Project Manager.*	*Please provide the local contact number (without country code) of the Project Manager e.g. 91234567.*

Section C: General Waste Collector (GWC) and Vector Control Operator (VCO)

Details of General Waste Collector (GWC) engaged
(Occupier must update and re-submit the SECP when the GWC is changed.)

13. Name and licence number of GWC (Class A/B)

Name of GWC	Licence number of GWC (e.g. TXXXXXXXXL)
Please state the full name of Class A/B GWC)	*Please state the licence number of Class A/B GWC)*

**Use the "+ Add More" element in FormSG if required.*

14. Name and licence number of GWC (Class C)

Name of GWC	Licence number of GWC (e.g. TXXXXXXXXL)
Please state the full name of Class C GWC)	*Please state the licence number of Class C GWC)*

**Use the "+ Add More" element in FormSG if required.*

15. Details of Vector Control Operator (VCO) engaged
(Please state if more than one VCO will be engaged)
(Occupier must update and re-submit the SECP when the VCO is changed)

Name of VCO	Licence number of VCO (e.g. VCOXXXXXXXX)	Contractual Start Date of VCO (DDMMYYYY)	Contractual End Date of VCO (DDMMYYYY)
Please state the full name of VCO	*VCO01012020*	*e.g. 24062020 (24 June 2020)*	*e.g. 24062020 (24 June 2020)*

**Use the "+ Add More" element in FormSG if required.*

Section D: Declare Environmental Management Plans

Please provide detailed environmental management plans (D1 - D6). Reasons should be provided if sites fail to implement the required plans. The file size is limited to 3MB.

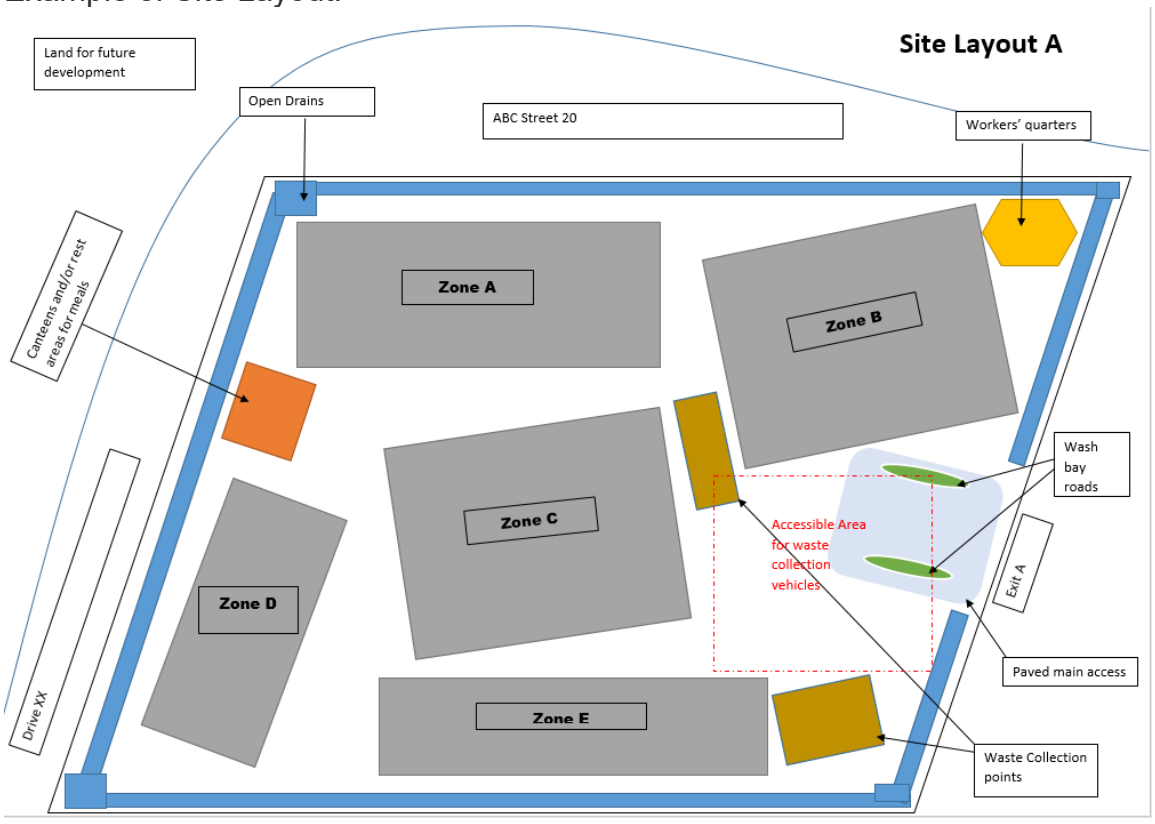
D1. Site Layout

16. Please indicate the total area of the construction site
Please state the total area in m^2

17. Please attach the Site Layout that shows the following areas:
Maximum of 1 attachment of 3MB file size

a) Waste collection point(s) accessible to waste collection vehicles
b) Paved main access roads, with wash bay
c) Workers Quarters
d) Toilet Facilities
e) Canteens and/or rest areas for meals

Example of Site Layout:



D2. Vector Control Programme

Surveillance

Please describe in detail:

1. high-risk areas to inspect and,
2. the inspection frequency of such areas

across the different stages of your construction work (Preliminary works, Sub-structure stage, Building Stage till TOP)

a) Preliminary works
b) Sub-structure stage
c) Building Stage till TOP

18.	Surveillance (Preliminary works)

Example

1. *The area is segmented into 6 zones with a vector control team in charge of each zone. The supervisor of each team would inspect their area for environmental issues as and when they see it. The zoning method applies across all stages of work.*

2. *Weekly inspection for uneven grounds, receptacles (e.g. bins, drainage outlets, containers & pails), canvas sheets, plants and fallen leaves for stagnant water*

3. *Please state other high-risk areas identified by the ECO(SCS) with the recommended frequency of inspection.*

19.	Surveillance (Sub-structure stage)

Example

1. *Weekly inspection for all barriers to ensure that they are in good conditions with no cracks or damages.*

2. *Gutter and scupper drains. Weekly inspection to ensure that drains are not choked due to fallen leaves*

3. *Please state other high-risk areas identified by the site's ECO(SCS) with the recommended frequency of inspection.*

20.	Surveillance (Building Stage till TOP)

Example

Weekly inspections of gully traps, sinks, toilet bowls, inspection chamber covers, corridors and staircase landings, scupper drains and storage yard for stagnant water.

1. *Please state other high-risk areas identified by the site's ECO(SCS) with the recommended frequency of inspection.*

Mitigation Measures

Please describe in detail the mitigation measures on site (e.g. Clear overgrown vegetation and water-bearing receptacles) in different stages of work (Preliminary works, Sub-structure stage, Building Stage till TOP)

a) Preliminary works
b) Sub-structure stage
c) Building Stage till TOP

21.	Mitigation Measures (Preliminary works)

Example

1. *Test block stacking area to be designed by Professional Engineer and provide steel plate below test blocks to prevent depressions due to heavy loads.*
2. *Regularly maintain and level uneven grounds.*
3. *Provide slight gradient and proper drainage to allow water to flow towards drain and gutters.*
4. *Carry out BTI misting for dense overgrowth, vast turfed areas and holes in tree trunks.*
5. *Please state other mitigation measures suggested by the site's ECO (SCS).*

22.	Mitigation Measures (Sub-structure stage)

Example

1. *Drill holes on struttings and walers of fill them with sand to prevent collection of water.*
2. *Provide sump at the lowest point and provide automatic pump to remove access water.*
3. *Debris to be removed from site frequently to facilitate removal of stagnant water and insecticidal treatment.*
4. *Please state other mitigation measures suggested by the site's ECO(SCS).*

23.	Mitigation Measures (Building Stage till TOP)

Example

1. *Seal off unused sink, toilet bowls, cisterns and gullies before handing over.*
2. *Timber/ Raised decks should only be installed after passing the flow test.*
3. *Apply granular insecticide in ponds and swimming pools until handing over.*
4. *Provide grating for drains to prevent chokage due to fallen leaves.*
5. *Please state other mitigation measures suggested by the site's ECO(SCS).*

D3. Waste Management

24. Is there a waste disposal monitoring framework in place? You may refer to Appendix 6 for a template for monitoring waste disposal in construction site.
(Yes/ No)

25. Are there enough bins provided for each type of waste to ensure no spillage at any time?

a) Organic Waste (should be of SS EN 840 standard wheeled bin with maximum size of 660 litres and properly covered when not in use)
(Yes/ No)

b) Construction Waste
(Yes/ No)

c) Recyclables
(Yes/ No)

D4. Dust Abatement

26. Describe the dust abatement measures implemented.
Example

- *Use of effective measures such as water sprinklers/ spray, shielding, netting, covers/ hoarding for aggregate and sand storage*
- *Proper storage of construction debris and disposal off site*

27. Ensure that concrete batching plants must have a Written Permission (WP) from the Director, Pollution Control Department to occupy and operate as a Scheduled Premises. The operation of the concrete batching plant must comply with all the conditions stipulated in the WP.
(Yes/ No/ Not Applicable)

D5. Noise Control

For projects located within 150 metres from noise-sensitive premises, upon notice, you may be required to prepare a Noise Management Plan (NMP) with more details for submission to the NEA Pollution Control Department. For more information on regulations on Construction Noise, please visit the URL (https://sso.agc.gov.sg/SL/EPMA1999-RG2)

28. Describe the noise control measures implemented (e.g. Installation of noise barriers).

Example

- *Minimise the usage of generators by setting up permanent power supply with the electricity provider. Generators are sited at locations that minimise the noise nuisance affecting nearby premises*

D6. Earth Control

You are reminded to submit an Earth Control Management (ECM) Plan endorsed by a Qualified Erosion Control Professional (QECP) to the PUB Catchments and Waterways Division to obtain necessary clearance before earth works start. Please refer to https://www.pub.gov.sg/drainage/earthcontrolmeasures for more information on ECM.

29. Name of Earth Control Measures Officer

Please state the full name of the Earth Control Measures Officer responsible for the Project.

A Copy of the SECP submission will be forwarded to the following E-Mail(s)

30. Email address of ECO(SCS): _____
Please fill in the required field
31. Email address of Project Manager: _____
Please fill in the required field

Section E: Declaration Form

32. Please attach a signed PDF version of the declaration form below. The file size is limited to 3MB.
Maximum of 1 attachment of 3MB file size

Section E: Declaration Form

☐ By submitting this form, I confirm that the information provided in the SECP is true and correct.

This SECP is prepared by:

_____
(Name and Signature of ECO(SCS)

and submitted by;

_____ _____
(Name and Signature of Occupier) (Company Stamp)

Appendix 3: Site Environmental Control Report

Site Environmental Control Report

Instructions for the Site Environmental Control Report (SECR):

i) The ECO(SCS) and Occupier shall prepare the SECR **at least once a month or any other frequency as NEA may require, after the commencement of works on the specified construction site.**

ii) The reports shall be **filed and made available onsite** for inspection by the National Environment Agency and/or any public health officer, when required.

iii) The examples in the Sections A – D are given as a guide. ECOs(SCS) shall prepare the SECR with inputs specific to the Construction Site where he/ she is appointed in.

SITE ENVIRONMENTAL CONTROL REPORT (SECR)

For: _____ (date) _____ to _____ (date) _____.

The SECR serves to facilitate reviews of efforts implemented in the construction site. Where applicable, improvements should be proposed to enhance current efforts prescribed in the SECP.

Section A: Review Efforts for Vector Control, Waste Management and Food Hygiene	
1	Surveillance and housekeeping efforts implemented at high-risk areas Examples: • *Inspections conducted weekly across zones (a maximum of 6 zones assuming a 6-days work week or 7 zones for a 7-days work week)* • *Removed receptacles and levelled ground depressions in the open* • *Workers quarters and pantries kept tidy and free from food waste*
1a	Measures to ensure cleanliness of canteen and/or dining areas • *Provision of food waste bins* • *Canteen and dining areas cleaned daily after meals*
1b	Measures to ensure good food storage practices • *Appropriate temperature and containers* • *Food delivery not left unattended on floor* • *Proper cold chain*
1c	Measures to ensure proper waste management • *Uncovered / damaged bins with refuse spillages* • *Disposal of waste into correct type of bins* • *Waste are collected and transported for disposal properly*
2	Measures to ensure effective vector control • *Use of larvicides and AM oil in areas where stagnant water cannot be removed* • *Structural defects discovered to be rectified as soon as possible*
3	Measures taken when site is located in a dengue cluster *(to be updated when site is located in a dengue cluster)* • *Indicate the measures taken by Construction Site*
4	Evaluation of the performance of Vector Control Operator(s) (VCO): • *Service reports by VCOs were comprehensive.* • *If chemical applications were made, the VCO had indicated the reasons(s), type of chemical and dilution rate used in the Service Reports.* • *Treatment carried out were effective. Soil treatment by VCO complied with water pollution control requirements.*

Section B: Photograph(s) (with timestamp) of site conditions at Areas of Concern	
Construction Area  Observation: No sighting of stagnant water in Construction Area, worksite is kept litter free.	Workers Quarters  Observation: Workers Quarters are kept litter free
Storage Yard  Observation: Storage of materials should preferbly be under shelter to prevent collection of rain water	Toilet(s)  Observation: Stagnant water due to poor gradient
Basement (if applicable)  Observation: Stagnant water in scupper drain	Canteen and Dining Area  Observation: No leftover/ uncleared food at dining area

Section C: Review Efforts for Pollution Control	
1	Measures to prevent smoke and dust nuisance • *Service faulty machinery* • *Vehicles are covered and not overloaded* • *Water-spray at wash bay*
2	Measures to prevent noise pollution • *Siting of generators and machineries* • *Restrict timing of noisy activities* • *Service faulty machinery*
3	Steps to ensure effective earth control • *Perimeter cut-off drains, silt traps, silt fences and silty water treatment plant*

Section D: Review efforts for Prevention of Infectious Diseases	
1	Measures to prevent spread of infectious diseases in the construction site. • *Temperature checks for workers and visitors* • *Workers who are unwell (> 37.5^{0}C) not be allowed to continue work*

Section E: Environmental Outreach and Training Conducted e.g. Toolbox Meeting	
Date	**Outreach and Training Conducted**

I certify that the SECR is prepared to the best of my knowledge.		
Name of ECO(SCS) and license expiry date	Signature of ECO(SCS)	Date prepared

I acknowledge the assessment(s) provided by ECO(SCS) and have/will complete(d) the necessary follow up action(s) required		
Name of Contractor	Signature of Contractor	Company Stamp

Appendix 4: Penalties

(I) Penalties on ECO(SCS)

Environmental Public Health Act 1987

S/No.	Nature of Offence	Penalties
1.	**Section 61A(1)** Carry out work as an ECO(SCS) without a Certificate of Registration	Maximum fine of $5,000 for first offence and $10,000 for second or subsequent offence
2.	**Section 61A(3)** (I) Obtain registration by fraud or misrepresentation (II) Fail to discharge duties set out in the Regulations/ the Code of Practice[#] (III) Fail to attend or complete any training course, seminar, conference or meeting required by the Director- General	Suspension or cancellation of Certificate of Registration

[#] Mandatory duties are denoted by "#" under Section 5

(II) Penalties against occupier of construction site

Environmental Public Health (Specified Construction Sites) Regulations 2021

S/No.	Nature of Offence	Penalties
1.	**Regulation 3(2)** (I) Fail to endorse and submit the developed SECP in the manner that Director- General requires, within one month from the commence of works on the specified construction site (II) Fail to endorse and submit the amended or updated SECP for the specified construction site within 14 days after the SECP is amended or updated (III) Fail to implement the SECP upon endorsing it (IV) Fail to endorse each SECR submitted by the ECO(SCS) (V) Fail to take actions as recommended in the SECR upon endorsing it (VI) Fail to make the SECRs available for inspection by the Director- General or any authorised officer	Maximum fine of $5,000 for first offence and $10,000 for second or subsequent offence
2.	**Regulation 4(1)** (I) Fail to appoint another ECO(SCS) within 14 days for the construction site upon termination of appointment or suspension or cancellation of the registration of the incumbent ECO(SCS) (II) Fail to endorse and submit the SECP that is updated with the particulars of the new ECO(SCS) appointed	Maximum fine of $5,000 for first offence and $10,000 for second or subsequent offence
3.	**Regulation 5(1)** (I) Fail to provide the ECO(SCS) with the facilities, equipment and information that are necessary for the ECO(SCS) to discharge his or her duties effectively (II) Fail to permit the ECO(SCS) to attend any training course, seminar, conference or meeting required by the Director-General (III) Fail to reimburse the ECO(SCS) for attending courses Make any deductions from the remuneration of the ECO(SCS) for being absent from work for the purposes of attending courses required by the Director-General	Maximum fine of $1,000 for first offence and $2,000 for second or subsequent offence

(III) Penalties against occupier of the construction site on environmental health matters

Environmental Public Health Act 1987

S/No.	Nature of Offence	Penalties
1.	**Section 18** Failure to take reasonable precautions to prevent danger to life, health or well-being of persons using any public place from flying dust or falling fragments or from any other material, thing or substance during erection, alteration, construction or demolition of any building	Maximum fine of $2,000 for first offence, $4,000 for the second offence, and $10,000 for third and subsequent offence
2.	**Section 19** Earth littering of public roads, or dropping, scattering of sand, earth, gravel, clay, refuse, stone, or other similar material	Maximum fine of $2,000 for first offence, $4,000 for the second offence, and $10,000 for third and subsequent offence
3.	**Section 45** Failure to comply with Nuisance Order for: (I) Dust pollution, accumulation or deposit (II) Fumes, vapours, gases, heat, radiation or smells (III) Any machinery, plant or any method or process which causes a nuisance or is dangerous to public health or safety (IV) Any place which emanates noise or vibration as to amount to a nuisance (V) Any other matters deemed to be a nuisance under the Act	Maximum fine of $10,000 for first offence, and $20,000 for Second and subsequent offence, or to imprisonment for a term not exceeding 3 months, or both

4.	**Section 54** Any premises which are used as work premises or workplace shall be provided with adequate sanitary conveniences sited at such locations as the Director-General may think fit, having regard to the number of persons employed in, or in attendance at, the premises or workplace.	Any person who fails to comply with this Notice shall be guilty of an offence under Section 85 of the Act and shall be liable on conviction to a fine not exceeding $5,000.
5.	**Section 62(2)** Fail to appoint a registered ECO(SCS) for the specified construction site	Maximum fine of $5,000 for first offence and $10,000 for second or subsequent offence

Environmental Pollution and Management Act 1999

S/No.	Nature of Offence	Penalties
1.	**Section 15(1), (2) and (3)** Discharge or cause or permit to be discharged trade effluent, oil, chemical, sewage or other polluting matters into watercourses without a licence	(a) on the first conviction to a fine not exceeding $20,000 and, in the case of a continuing offence, to a further fine not exceeding $1,000 for every day or part thereof during which the offence continues after conviction; and (b) on a second or subsequent conviction to a fine not exceeding $50,000 and, in the case of a continuing offence, to a further fine not exceeding $2,000 for every day or part thereof during which the offence continues after conviction.

2.	**Section 17** Discharge or cause or permit to be discharged toxic substances into any inland waters	Maximum fine of $50,000 or imprisonment not exceeding 12 months or both for first offence; and maximum fine of $100,000 and imprisonment for not less than one month and not exceeding 12 months or both for second and subsequent offence

Control of Vectors and Pesticides Act 1998

S/No.	Nature of Offence	Penalties
1.	**Section 15** Permit any condition(s) favourable to the propagation or harbouring of vectors Fail to comply with the directions given by the Director-General of Public Health or any authorised officer to terminate or prevent conditions favourable for propagation or harbouring of vectors from arising	Maximum fine of $5,000 and/or maximum imprisonment of 3 months for first offence; fine of $10,000 and/ or imprisonment of 6 months on second and subsequent offence
2.	**Section 17** Powers of Director-General to direct taking of measures	Fine not exceeding $20,000 and/or imprisonment not exceeding 3 months for first offence; fine of $50,000 and/or imprisonment of 6 months on second and subsequent offence

Environmental Public Health (Public Cleansing) Regulations

S/No.	Nature of Offence	Penalties
1.	**Regulation 4** (I) Fail to provide sufficient receptacles to contain trade refuse (II) Fail to provide covered receptacles for trade refuse of shape, size and design approved by the Director-General (III) Deposit or cause or permit to be deposited trade refuse, rubbish in places other than in the receptacles (IV) Spillage of contents from receptacles	Maximum fine of $1,000 for first offence and to a further fine not exceeding $100 for every day or part thereof during which the offence continues after conviction; $2,000 for second offence and to a further fine not exceeding $200 for every day or part thereof during which the offence continues after conviction; and $5,000 for third or subsequent offence and to a further fine not exceeding $500 for every day or part thereof during which the offence continues after conviction.

2.	**Regulation 14 (2)** No one shall convey any refuse, sand, earth, granite chips, clay, stone or any other similar matter or thing in any vehicle through or along any street unless the refuse, sand, earth, granite chips, clay, stone or any other similar matter or thing is completely and adequately covered by a proper cover the size and design of which shall be approved by the Director-General from time to time.	Maximum fine of $1,000 for first offence and to a further fine not exceeding $100 for every day or part thereof during which the offence continues after conviction; $2,000 for second offence and to a further fine not exceeding $200 for every day or part thereof during which the offence continues after conviction; and $5,000 for third or subsequent offence and to a further fine not exceeding $500 for every day or part thereof during which the offence continues after conviction.

Environmental Public Health (General Waste Collection) Regulations

S/No.	Nature of Offence	Penalties
1.	**Regulation 20** Engage an unlicensed waste collector to collect and transport waste for disposal	Maximum fine of $10,000 and in the case of a continuing offence, to a further fine not exceeding $500 for every day during which the offence continues after conviction.

Environmental Protection and Management (Control of noise at construction sites) Regulations

S/No.	Nature of Offence	Penalties
1.	**Regulation 3** Exceed the maximum permissible noise levels stipulated in the Regulations **Regulation 4** (I) Fail to set up equipment as directed by the Director to measure and record the noise level emitted (II) Fail to submit records of the noise level readings including all relevant facts which may influence the values of the noise level readings **Regulation 4A** The owner or occupier of any construction site located less than 150 metres from any hospital, home of aged sick or residential building shall ensure that no construction work is carried out at his construction site from 10.00pm Sat/eve of Public Holiday to 7.00am following Mon/day after Public Holiday	Maximum fine of $40,000

Appendix 5: Best Practices to Prevent and Control Mosquito Breeding

Adapted from Singapore Contractors Association Ltd (SCAL) "Mozzie Wipe-out" Guidebook

Potential breeding habitats	Recommendations
In buildings and structures	• Design and construct buildings and structures in such manner that prevents the collection of water and allows easy accessibility for inspections • Check and clear stagnant water at least once a week • Identify and seal off openings that can allow ingress of water • Tape up all grooves to prevent collection of water • Seal off all unused sinks, toilet bowls, cisterns and gullies • Educate workers on proper waste disposal and good housekeeping at all times • Debris to be removed from site to facilitate removal of stagnant water and insecticidal treatment
Common access and vehicular access	• Use lean concrete and waste premix site road and gradient the flow into a drain
Storage yard	• Storage yard should have a gentle gradient to drain off water • If required, construct kerbs to prevent water from flowing into the area • Provide shelter for materials and equipment or provide covers for equipment that cannot be stored under shelter • Steel casings and coring buckets should be stored properly to prevent collection of rain water • Site storage yard away from canopy of trees • Check canvas sheets for stagnant water
Uneven grounds	• Regularly maintain and level uneven grounds • Provide slight gradient and proper drainage to allow water to flow towards drains and gutters

	• Test block stacking area (possible depressions due to heavy loads) to be designed by Professional Engineer and provide steel plate below test blocks
Excavations, pits and trenches	• Provide sump at lowest point and provide automatic pump to remove access water • Provide lean concrete or erosion blanket over excavated slope to minimise erosion and creation of depressions • Apply granular insecticide to sump pits
Gutter and scupper drains	• Ensure gutter properly constructed to be able to drain off water to sump pits • Provide grating to prevent drains from being choked due to fallen leaves
Pond and swimming pool	• Apply granular insecticide until handing over
Timber deck/raised decks	• Ground screed should have a gradient to drain away water • Timber deck should only be installed after passing the flow test
Steel struttings and walers	• Drill holes on struttings and walers or fill strutting and walers with sand to prevent collection of water
Barriers	• Ensure that all barriers are in good condition (e.g. no cracks or damages) • Deploy barriers as soon as possible instead of storing on site
Air-handling units (AHU) and aircon drip tray	• AHU should be stored under shelter or the overflow pipe should be uncapped to allow rain water collected to drain out • Remove air-con drip tray and provide direct piping to divert condensate to nearby drain/ floor trap
Inspection Chamber (I/C) covers	• Select I/C covers that will not collect water • Temporary seal off the keyhole of I/C cover
Water in concrete test cube tanks	• Apply insecticide to the cube tanks and change water inside tank regularly

Plants and fallen leaves	• Carry out BTI misting for dense overgrowth, vast turfed areas and holes in tree trunks that are out of reach • Clear fallen leaves
Receptacles	• Educate workers to place pails at designated areas • Educate workers to wipe dry and overturn containers/pails when not in use • Workers should not store pails of water in their quarters • Drainage outlet to be provided for huge bins without covers • Bins and skips to be cleared at least once a week

Appendix 6: Format to Monitor Disposal of Waste in Construction Site

Date: _____

No. of vehicle trips	Types of waste disposed *	Name of waste contractor	Quantity of waste removed (e.g. one lorry load, one bulk bin, one skip tank, etc.)	Time refuse vehicle leaves site	Time refuse vehicle returns to site °	Vehicle registration number	Disposal receipt verified (Yes/ No)	Name of waste disposal site**
1st trip								
2nd trip								
3rd trip								
4th trip								
5th trip								
6th trip								
7th trip								
8th trip								
9th trip								
10th trip								

* Types of waste

1. Marine clay/ excavated earth (A)
2. Construction waste/ debris (B)
3. General refuse/ organic waste (C)

** Waste disposal sites

1. Tuas Marine Transfer Station (A)
2. MPA Staging ground at Pasir Ris (B)
3. Kim Chuan Transfer Station (C)
4. Ulu Pandan Refuse Incineration Plant (D)
5. Senoko Incineration Plant (E)
6. Tuas Incineration Plant (F)
7. Tuas South Incineration Plant (G)

° Leave blank if not applicable