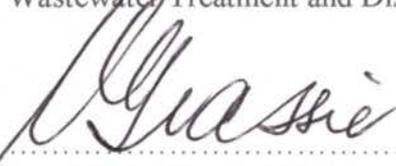


APPROVED STANDARDS AND OPERATING PROCEDURES APPLICABLE TO THE OPERATION OF SEWAGE SYSTEMS

THE OPERATION, TESTING AND REPORTING STANDARDS

These Standards and Operating Procedures have been approved under section 16 of the Ministry of Health Act 2013, and apply to all sewage systems used or operated in Cook Islands.

The Standards and Operating Procedures are dated this 18th day of June 2014, and subject to regulation 2 of the Public Health (Sewage and Wastewater Treatment and Disposal) Regulations 2014, have immediate effect.



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Honourable Nandi Glassie
Minister for Health

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1. Application of these standards and operating procedures

- 1.1 These standards and operating procedures may be referred to as the “Operation, Testing and Reporting Standards”, and are to be read and applied in conjunction with other approved standards, including –
 - (a) the “Design and Construction Standards”; and
 - (b) the “Standards for Registration”.

- 1.2 These standards and operating procedures are made in support of the Public Health (Sewage and Wastewater Treatment and Disposal) Regulations 2014, and are approved standards for the purposes of those Regulations.
- 1.3 Unless otherwise stated, these standards and operating procedures apply to all of the following –
- (a) all sewage systems which are used in the Cook Islands at any time, and regardless of the date of their installation or approval;
 - (b) all sewage systems, and parts of such systems, which are operated in the Cook Islands, and which are regulated by the Public Health (Sewage and Wastewater Treatment and Disposal) Regulations 2014;
 - (c) all persons registered under the Public Health (Sewage and Wastewater Treatment and Disposal) Regulations 2014, and who perform any work in relation to the operation, servicing or maintenance of any sewage system;
 - (d) the owner of any premises at which a sewage system which is regulated by the Public Health (Sewage and Wastewater Treatment and Disposal) Regulations 2014 is constructed, or proposed to be constructed.

2. Sludge removal: frequency and reporting

- 2.1 Septic tanks must be desludged either
- (a) every 3 to 5 years; or
 - (b) when the sludge (build up of material on bottom of tank) and scum have accumulated to the extent that the scum and sludge take up 2/3 of the volume of the tank's first chamber - whichever occurs first.
- 2.2 A sludge removal contractor must submit a sludge removal report in the approved form to the Public Health Department within 30 days of desludging a septic tank.

3. Sewage flow reporting requirements

- 3.1 The owner of a High Load System must submit data on sewage flow to the Public Health Department on an annual basis, and a graph of the weekly volume of sewage produced on the property for that year must be included in the sewage flow report. Flow data shall be monitored at least weekly.
- 3.2 Flows can be based on the metered water consumption for the site where this provides a reasonable estimate of sewage discharges.

4. Sampling frequencies

- 4.1 Once every three years the owner of a High Load System must sample effluent from their sewage system in the manner described in clause 5 (below), and have the samples tested in an accredited laboratory for BOD₅ (mg/l), TSS (mg/l), FC (cfu/100ml), TN (mg/l), TP (mg/l).

5. Testing procedures

- 5.1 The samples must be transported to an accredited laboratory for analysis within 24 hours of sampling.
- 5.2 Samples are to be analysed in accordance with a method specified in any of the following texts or references -
- Standards Methods for Examination of Water and Wastewater, 18th edition (1992), or more recent editions or supplements as they become available;
 - Relevant Australian Standards published by Standards Australia, as amended or varied from time to time or other method that has been demonstrated to provide equivalent results;
 - Relevant New Zealand Standards published by Standards New Zealand as amended or varied from time to time.
- 5.3 The effluent compliance criteria are given in the following table –

Treatment level	Effluent standards
Primary treatment	<ul style="list-style-type: none"> • BOD₅ - no sample must exceed 150mg/litre • TSS - 90% of samples must not exceed 80mg/litre and no sample must exceed 100mg/litre • FC - the median value must be no more than 10⁵ cfu/100ml and no sample must exceed 10⁷ cfu/100ml.
Secondary treatment	<ul style="list-style-type: none"> • BOD₅ - 90% of samples must not exceed 20mg/litre and no sample must exceed 30mg/litre • TSS - 90% of samples must not exceed 30mg/litre and no sample must exceed 45mg/litre. • FC - If disinfection is provided, the samples taken on each occasion must have a thermotolerant coliform count not exceeding a median value of 10² organisms per 100ml with 80% of the samples containing less than 10³ organisms per 100ml and no sample exceeding 10⁴ organisms per 100ml. • TN - 90% of samples must not exceed 40mg/litre and no sample must exceed 60mg/litre. If chlorination is the disinfection process, the total chlorine concentration must be greater than or equal to 0.5mg/litre in four out of five samples taken.
Advanced treatment	<ul style="list-style-type: none"> • BOD₅ - 90% of samples must not exceed 10mg/litre and no sample must exceed 20mg/litre. • TSS - 90% of samples must not exceed 10mg/litre and no sample must exceed 20mg/litre. • FC - The samples taken on each occasion must have a thermotolerant coliform count not exceeding a median value of 10 organisms per 100ml with 80% of the samples containing less than 20 organisms per 100ml and no sample exceeding 100 organisms per 100ml.

	<ul style="list-style-type: none"> • TN - 90% of samples must not exceed 15mg/litre and no sample must exceed 20mg/litre. • TP - 90% of samples must not exceed 5mg/litre and no sample must exceed 10mg/litre. • If chlorination is the disinfection process, the total chlorine concentration must be greater than or equal to 0.5mg/litre in four out of five samples taken.
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6. Effluent outlet filters

- 6.1 Effluent outlet filters must reduce Total Suspended Solids to no more than 100mg/l. This performance data must be provided by an accredited independent testing agency.
- 6.2 Effluent outlet filters must have a filter aperture of no more than 3mm and a minimum surface area of 28,800mm².
- 6.3 Servicing intervals of effluent outlet filters must be specified by the manufacturer. The preferred period for servicing is at least once every 6 months, or more frequently if required.

7. Noise standards

The maximum permissible noise level with all equipment (except the alarm) operating is 40 dB (A) measured on fast response at a distance of 1m from the nearest item of noise emitting equipment.

8. Sewage Discharge Standards

- 8.1 Sewage must not under any circumstances be discharged to surface water.
- 8.2 Sewage must not be discharged directly to groundwater but must be treated and applied to land as outlined in all approved standards.

9. Abandonment or Disconnection Plans and Requirements

- 9.1 An abandonment or disconnection plan required under Part 4 of the Regulations must outline all of the following -
 - (a) how the developer of a new sewage treatment system will manage wastewater that is normally treated by the abandoned sewage system;
 - (b) how the components of the system will be dismantled and waste material managed;
 - (c) how the site will be rehabilitated and left in a safe, clean and environmentally satisfactory manner.
- 9.2 The Board may require any further information, or any verification of any matter referred to in 9.1.

10. Operation and Maintenance Manuals

An Operation and Maintenance Manual for a Secondary or Advanced Treatment System must contain all of the following -

- (a) operation and maintenance instructions for each pump station and treatment unit or process under normal and emergency conditions such as power outage and equipment malfunction;
- (b) operation and maintenance instructions for the land application system including procedures for purging or chemical shock loading to prevent or eliminate biological growth in a subsurface disposal system;
- (c) a list of required sampling frequencies and analyses to be conducted by the operator;
- (d) a checklist of troubleshooting, corrective, and preventative measures to be taken to maintain process control and treatment performance;
- (e) a checklist of start-up procedures;
- (f) applicable Cook Islands effluent requirements;
- (g) instructions on the collection and disposal of sewage sludge;
- (h) a summary of labour requirements needed to operate and maintain the sewage system;
- (i) a list of critical parts of the sewage system;
- (j) as built drawings of the sewage system;
- (k) a list of required daily activities, checks and observations;
- (l) logs or report forms for all operation and maintenance activities performed;
- (m) results of all discharge sampling undertaken on the system;
- (n) all necessary flow schematic diagrams with details of piping and valuing;
- (o) a scaled plot plan of the sewage system and site including all pipework and equipment;
- (p) details on all safety equipment at the sewage system site, any applicable spare parts, maintenance and operation instructions;
- (q) details on all monitoring equipment including spare parts, maintenance and operating instructions;
- (r) names and addresses of suppliers of all spare parts; and
- (s) contingency plans to ensure the continued operation of the system in the event of any natural or man-made disaster.

TAKE NOTICE that any person to whom these standards and operating procedures apply, who breaches any requirement or obligation under these standards or procedures, commits an offence and is liable to be fined up to \$5,000 (or \$10,000 for companies).