

Requirements for the ongoing performance and assessment of a sewage treatment system

Procedural guidelines for owners and masters of ships fitted with sewage treatment systems

September 2018

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Overview

The owner and master of a ship fitted with a sewage treatment system operating in Queensland's coastal waters must ensure that the treatment system:

- 1) is maintained, at least, at the intervals and in the way required by the system service manual for the treatment system
- 2) is assessed by analysing sewage after it has been treated in the sewage treatment system, by an **independent testing entity**, to ensure that it continues to treat the sewage to the levels for the grade of treated sewage stated in schedule 5 of the *Transport Operations Marine Pollution Regulation 2018* (TOMPR)
- 3) the sample used for assessment must not be diluted after it has been treated in the treatment system
- 4) the assessments must be undertaken at the following intervals after the sewage treatment system has been fitted to the ship:
 - a) for a **declared ship** (that is, a domestic commercial vessel with a certificate of operation issued, or taken to be issued, under the *Marine Safety (Domestic Commercial Vessel) National Law Act 2012* stating it is a class 1B, 1C, 1D, 1E, 4C, 4D or 4E ship; or an other Queensland regulated ship regulated under the *Transport Operations (Marine Safety) Act 1994* and *Transport Operations (Marine Safety) Regulation 2016* designed to carry more than 12 passengers; and has a fixed toilet):
 - i) at least annually for the first two years
 - ii) afterwards, at least every two years.
 - b) for a **ship other than a declared ship** (that is, all other ships, including all recreational ships; domestic commercial vessels with a certificate of operation issued, or taken to be issued, under the *Marine Safety (Domestic Commercial Vessel) National Law Act 2012* stating it is a class 2 or 3; other Queensland regulated ships regulated under the *Transport Operations (Marine Safety) Act 1994* and *Transport Operations (Marine Safety) Regulation 2016* designed to carry up to 12 passengers)
 - i) at least once in the first five years
 - ii) afterwards, at least every two years.
- 5) has a durable label attached to the treatment system which states the manufacturer's name, address, the type and model number of the treatment system
- 6) is installed in accordance with manufacturer's instructions
- 7) has an indicator fitted on the sewage treatment system showing if it is malfunctioning
- 8) is fitted with a macerator in-line prior to the waste entering the sewage treatment system.

An **independent testing entity** is an entity that—

- 1) is accredited by the National Association of Testing Authorities (NATA) as competent to perform analyses of the levels of sewage quality characteristics remaining in sewage after it has been treated in a treatment system for Grade A, Grade B or Grade C treated sewage; and
- 2) performs the above mentioned analyses in Australia.

Owners and masters should be aware that sewage from a treatment system that fails an assessment is not classed as treated sewage and must be discharged in accordance with the nil discharge requirements for untreated sewage. This must be incorporated into the shipboard sewage management plan of any declared ship that does not carry a current assessment report showing that the system has passed the necessary requirements.

Stages of assessment

There are six (6) simple steps to follow when having a sewage treatment system assessed. These steps are summarised below with full explanations given in the following pages.

- 1) Obtain copies of the relevant legislative requirements.
- 2) Identify, locate and contact an appropriate independent testing entity to discuss your needs.
- 3) Ensure the treatment system is being used and tested under normal operating conditions.
- 4) Collect, contain, store, deliver and submit samples and relevant documentation to your chosen independent testing entity.
- 5) Have samples analysed for the appropriate characteristics.
- 6) Depending upon the results of the assessment, either:
 - a) PASS—Place a copy of the assessment results in your system documentation
OR
 - b) FAIL—Contact the relevant system manufacturer/supplier to discuss further action.

Legislative requirements

Obtain copies of the relevant legislative requirements, that is, the *Transport Operations (Marine Pollution) Act 1995* and *Transport Operations (Marine Pollution) Regulation 2018*. Copies of the legislative requirements are freely available either from the Maritime Safety Queensland (MSQ) website at www.msq.qld.gov.au or from the Office of the Queensland Parliamentary Counsel (OQPC) website at www.legislation.qld.gov.au.

The following sections are most relevant:

Transport Operations (Marine Pollution) Act 1995 (TOMPA)

- Section 51 Shipboard sewage management plan (declared ships only)
- Section 51B Treatment system to be in proper working order (all ships)

Transport Operations (Marine Pollution) Regulation 2018 (TOMPR)

- Section 36 Minimum requirements for shipboard sewage management plan (declared ships only)
- Division 6 Treatment systems and documents about treatment systems
- Section 41 Definitions for division
- Section 43 Maintenance and assessment of treatment system for ships
- Section 44 Documents to be kept on-board ship fitted with treatment systems
- Section 46 Standard with which treatment systems must conform—Act, schedule 1
- Schedule 5 Levels of sewage quality characteristics for treated sewage (sections 43 and 45)
 - Part 1—Interpretation
 - Part 2—Levels for Grade A treated sewage
 - Part 3—Levels for Grade B treated sewage
 - Part 4—Levels for Grade C treated sewage
- Schedule 7 Dictionary

Documentation that must be kept on-board ships fitted with sewage treatment systems

The owner and master of a ship operating in Queensland's coastal waters and fitted with a treatment system must ensure the following documentation is kept on-board and readily available for inspection:

- 1) sewage treatment system documentation from the manufacturer or supplier stating:
 - a) the performance specifications of the sewage treatment system under normal operating conditions
 - b) the name of the independent testing entity that performed the assessment
 - c) the date and results of the assessment.
- 2) sewage treatment system service manual for assessment which includes:
 - a) operating instructions
 - b) maintenance schedules and requirements
 - c) authorised service providers
- 3) service records about the maintenance or assessment of the treatment system which includes:
 - a) for maintenance of the treatment system:
 - i) the name of the authorised service provider that performed the maintenance; and
 - ii) the date the maintenance was performed and details of any significant maintenance carried out on the treatment system.
 - b) for an assessment of the treatment system:
 - c) the name of the independent testing entity that performed the assessment
 - d) the date and results of the assessment.

Testing facility requirements

An assessment of a sewage treatment system must be carried out by an independent testing entity (see Section 43 of the TOMPR) as stated above. Therefore, you will need to do the following:

- 1) Locate, and make contact with a suitably accredited independent testing entity
- 2) Explain your requirements, that is, you need to have a sample of undiluted sewage from a sewage treatment system tested and analysed for compliance with the requirements of Queensland's *Transport Operations (Marine Pollution) Regulation 2018*, for the relevant characteristics (specific to the grade of treated sewage being assessed) as follows:
 - a) Grade A Treated Sewage—
 - i) thermotolerant coliforms
 - ii) total suspended solids
 - iii) biochemical oxygen demand
- 3) Grade B Treated Sewage—
 - i) thermotolerant coliforms
 - ii) total suspended solids
- 4) Grade C Treated Sewage—
 - i) thermotolerant coliforms

- 5) Develop an appropriate sampling regime (see Section 6 Testing/analysis requirements for further detail).
- 6) To locate a suitably accredited NATA testing facility, simply log on to the NATA website (<http://www.nata.asn.au>) and, contact them directly.

Normal operating condition requirements

An assessment of the levels of sewage quality characteristics remaining in sewage after it has been treated in a treatment system must be carried out under normal operating conditions (see Division 6 of the TOMPR). Therefore, the system being assessed must be installed on-board a vessel and used in the appropriate manner as intended by the manufacturer, that is, receiving waste comprised of the day-to-day faecal matter, toilet paper and urine produced on-board during normal operational use with regard to the rated number of persons and/or volume of sewage that the system was designed to effectively treat. The use of laboratory prepared sewage as a test medium is NOT acceptable for use in the assessment of on-board sewage treatment systems. Information outlining the sewage treatment system's specific operational parameters (that is, its normal operating conditions) should be included with the system documentation (documentation that must legally be supplied by the system manufacturer/supplier with each and every system sold for use in Queensland waters). If you are unsure of the normal operating conditions for the specific treatment system installed on your vessel, you should contact the system manufacturer/supplier that supplied/installed the system to obtain such information.

Fleet owners/operators should be aware that it is a legal requirement that each individual treatment system on each individual vessel in the entire fleet must:

- 1) be assessed at the appropriate intervals (as outlined in the legislation); and
- 2) have a suitable assessment report issued from the relevant independent testing entity (see examples of assessment reports in Attachments 3, 5 and 7).

Owners/operators must ensure that the assessment report is included with the original system documentation (that was supplied by the system manufacturer/supplier) and kept on-board the vessel at all times (see sections 42 and 44 TOMPR).

Sample collection requirements

It is advisable that proper handling methods and protective equipment be used when collecting a sewage sample for assessment. Sewage contains material that may pose a human health risk and should always be handled with care. Ensure that all samples are collected as directed by the relevant independent testing entity.

It is not a legislative requirement for samples to be collected by an independent testing entity. However, it should be clearly understood that samples must be collected, treated, stored and transported in the appropriate manner as directed by the relevant independent testing entity. Therefore, following appropriate instruction from the relevant independent testing entity, samples may be collected in the prescribed manner by any of the following:

- 1) an independent testing entity
- 2) a vessel owner/operator
- 3) an interested third party (such as a system manufacturer or one of their authorised service providers).

Samples of undiluted treated sewage must be collected from a point within the vessel that is in line with, and after, the treatment system but before the treated sewage is discharged into a waterway and NOT from within the water column following discharge.

Note: Treatment systems should be installed in a manner that allows for the collection of samples for testing, that is, have some form of tap, gate-valve, Y-valve or similar practically accessible collection point in the discharge line between the sewage treatment system (after the treatment process has been completed) and before the overboard discharge point.

Owners/operators having a Grade A or Grade B sewage treatment system assessed should be aware that part of the assessment includes the analysis of total suspended solids, which requires a comparison with the ambient water used for flushing purposes (see 'suspended solids' requirements in Schedule 5 Parts 2 and 3 of TOMPR). Therefore, a sample of the flush water (that is, a blank) must also be collected and presented to the independent testing entity for analysis at the same time as the sample of treated sewage is collected and presented to the independent testing entity for analysis.

Generally, the water used for flushing purposes will be the surrounding waters that the vessel is floating in/on at the time the sample of treated sewage is collected. Cases where this scenario is unlikely are vessels that use freshwater flush toilets and carry additional freshwater on board for this purpose. In this situation, the blank water sample should be collected from the on-board freshwater tank that is connected to the toilet/sewage treatment system.

The following provides an overview of the general sample collection, treatment, storage and transport process. The specific requirements for the overall procedure must be determined during direct prior consultation with the relevant independent testing entity that has been chosen to perform the required analyses. An overall summary of sample collection, treatment and transportation requirements is provided in Attachment 1) as a general guide.

- 1) Collect samples in the appropriate manner as directed by the relevant independent testing entity (making sure to clearly note and record the time and date that the samples were taken)
- 2) Place samples in the appropriate sample containers as directed by the relevant independent testing entity
- 3) Store samples in the appropriate manner as directed by the relevant independent testing entity
- 4) Transport and deliver samples to the relevant laboratory within the appropriate timeframe and in the appropriate manner as directed by the relevant independent testing entity
- 5) Submit samples along with relevant sections of the legislation and an example of an assessment report (see Attachment 3, Attachment 5 and Attachment 7 respectively) to the relevant independent testing entity.

Testing and analysis requirements

When performing an assessment of a sewage treatment system, the result of the analysis of a single undiluted sample is sufficient. The requirements for sample analysis are divided into two parts:

- 1) mandatory levels; and
- 2) indicative levels.

The results of the analysis should satisfy both mandatory and indicative levels to successfully meet the requirements of a valid treatment system assessment. The mandatory levels are the values stated in legislation that must be strictly adhered to, to minimise potential impacts on human health and/or the environment. The indicative levels are the values stated in this guideline document that should be adhered to, to give an indication of the quality of the sample being presented for analysis.

The indicative levels will provide a greater level of confidence in both the authenticity of the results of the analysis from Part A and the procedures followed throughout the assessment process, and hence, ensure that suitable samples are presented for analysis with respect to the:

- 1) normal operating conditions requirement; and
- 2) sample collection, treatment, storage and transport requirements of the relevant independent testing entity.

Note: An independent testing entity must be accredited by NATA to perform the analyses stated in the mandatory levels part of this guideline document. However, an independent testing entity is not required to be accredited by NATA to perform the analyses stated in the indicative levels part of this guideline document.

Mandatory levels

(NATA accreditation is required for these analyses)

The following sewage quality characteristics are those listed in Schedule 5 of the TOMPR and must be analysed for each of the relevant grades of treated sewage. The levels outlined below are a summary of the treated sewage requirements stated in the legislation, therefore, please ensure that you:

- 1) obtain a complete copy of the relevant legislative requirements for treated sewage (Schedule 5 of the TOMPR, Part 2 for Grade A Treated Sewage, Part 3 for Grade B Treated Sewage or Part 4 for Grade C Treated Sewage); and
- 2) ensure that these analytical requirements are made available to the relevant independent testing entity.

Grade A treated sewage

- Thermotolerant Coliforms (must not exceed 250 thermotolerant coliforms/100 mL)
- Suspended Solids (must not exceed 50 mg/L)*
- Biochemical Oxygen Demand (must not exceed 50 mg/L)

***Note:** The suspended solids content of Grade A Treated Sewage must not be more than 50 mg/L above the suspended solids content of the ambient water used for flushing purposes, that is, the blank.

Grade B treated sewage

- Thermotolerant Coliforms (must not exceed 150 thermotolerant coliforms/100 mL)
- Suspended Solids (must not exceed 50 mg/L)*

***Note:** The suspended solids content of Grade B Treated Sewage must not be more than 50 mg/L above the suspended solids content of the ambient water used for flushing purposes, that is, the blank.

Grade C treated sewage

- Thermotolerant Coliforms (must not exceed 150 thermotolerant coliforms/100 mL)

Indicative levels

(NATA accreditation NOT required for these analyses)

In addition to the specific sewage quality characteristics that are a legal requirement (that is mandatory) there are other parameters of the undiluted treated sewage sample that should be analysed and they include residual chlorine, total nitrogen, total phosphorous and pH.

Note: Failure to analyse samples of treated sewage for these additional characteristics may void the results and require the system to be submitted for re-assessment.

It should be noted that these values are based on current commercially available sewage treatment system technology and are provided as guidance of sample quality. They should not be taken as an indication of future government policy on chlorine or nutrient levels for treated sewage. Understandably, these levels may vary as new technology becomes available and this factor should be taken into consideration when interpreting results.

Analyses of these values will also indicate if chlorine is being discharged into the environment at a level which may potentially generate greater environmental harm than the treated sewage itself.

Note: Analysis of residual chlorine need not be performed for treatment systems that do not use and generate chlorine, in such cases simply insert 'N/A' in the relevant place on the assessment report.

Grade A treated sewage

- Residual Chlorine*—
 - within 5 minutes of sampling (should not exceed 10 mg/L)
 - within 24 hours of sampling (should not exceed 5 mg/L)
- Total Nitrogen (should be in the range of 20–150 mg/L)
- Total Phosphorous (should be in the range of 9–40 mg/L)
- pH (should be in the range of 6.0–8.5)

***Note:** Treatment systems that do not use or generate chlorine do not require the analysis of residual chlorine to be performed, in such cases simply insert “N/A” in the appropriate place on the assessment report.

Treatment systems that do use and generate chlorine do require the analysis of residual chlorine to be performed. In such cases please ensure that the relative time that the analysis is performed is clearly indicated on the assessment report, that is, ‘within 5 minutes of sampling’ or ‘within 24 hours of sampling’ (for further information see note on chlorine analysis in ‘*Attachment 1: Summary of requirements for the collection and submission of samples to laboratories*’).

Grade B treated sewage

- Residual Chlorine*—
 - within 5 minutes of sampling (should not exceed 10 mg/L)
 - within 24 hours of sampling (should not exceed 5 mg/L)
- Total Nitrogen (should be in the range of 210–940 mg/L)
- Total Phosphorous (should be in the range of 16–90 mg/L)
- pH (should be in the range of 6.0–8.5)

***Note:** Treatment systems that do not use and generate chlorine do not require the analysis of residual chlorine to be performed, in such cases simply insert “N/A” in the appropriate place on the assessment report.

Treatment systems that do use and generate chlorine do require the analysis of residual chlorine to be performed. In such cases please ensure that the relative time that the analysis was performed is clearly indicated on the assessment report, that is, ‘within 5 minutes of sampling’ or ‘within 24 hours of sampling’ (for further information see note on chlorine analysis in ‘*Attachment 1: Summary of requirements for the collection and submission of samples to laboratories*’).

Grade C treated sewage

- Residual Chlorine*—
 - within 5 minutes of sampling (should not exceed 10 mg/L)
 - within 24 hours of sampling (should not exceed 5 mg/L)
- Total Nitrogen (should be in the range of 400–1700 mg/L)
- Total Phosphorous (should be in the range of 25–130 mg/L)
- pH (should be in the range of 6.0–8.5)

***Note:** Treatment systems that do not use and generate chlorine do not require the analysis of residual chlorine to be performed, in such cases simply insert “N/A” in the appropriate place on the assessment report.

Treatment systems that do use and generate chlorine do require the analysis of residual chlorine to be performed. In such cases please ensure that the relative time that the analysis was performed is clearly indicated on the assessment report, that is, ‘within 5 minutes of sampling’ or ‘within 24 hours of sampling’ (for further information see note on chlorine analysis in ‘*Attachment 1: Summary of requirements for the collection and submission of samples to laboratories*’).

Assessment result requirements

There are two possible outcomes resulting from a performance assessment of a sewage treatment system:

- 1) The system can PASS the assessment (the results of the analyses meet all the requirements outlined in step 6 Testing and analysis requirements)

OR

- 2) The system can FAIL the assessment (the results of the analyses do not meet all the requirements outlined in step 6 Testing and analysis requirements).

The appropriate course of action following an assessment of a sewage treatment system's performance, is as follows:

- 1) If the system PASSES the assessment, a copy of the assessment report must be placed within the system documentation and kept on-board the vessel

OR

- 2) If the system FAILS the assessment, contact the relevant system manufacturer/supplier and discuss further action, then:
 - a) take the necessary remedial action to ensure that the system is operating as the manufacturer intended, to meet the legislative discharge requirements; and
 - b) submit the system for re-assessment, that is, repeat steps 3–6 of the 'Stages of assessment'.

NOTE: Sewage from a treatment system that fails an assessment IS NOT classed as 'treated sewage' and must therefore be discharged in accordance with the 'nil discharge requirements' for 'untreated sewage'.

For 'declared ships, this MUST be incorporated into, and clearly stated in, the 'shipboard sewage management plan' of any 'declared ship' that DOES NOT carry a current assessment report showing that the system has passed the necessary requirements.

Explanatory information for attachments

Summaries of Analyses Required for Grade A, Grade B and Grade C Sewage Treatment Systems (Attachment 2, Attachment 4 and Attachment 6, respectively); and

Examples of Assessment Reports for Grade A, Grade B or Grade C Sewage Treatment System (Attachment 3, Attachment 5 and Attachment 7, respectively).

The owner or master of a ship fitted with a sewage treatment system must keep written records for the treatment system and ensure that they are kept on-board the ship (refer to section on documentation and section 44 the TOMPR).

The following attachments provide (i) an overall outline of the analyses required for each of the various grades of treated sewage, and (ii) examples of the minimum requirements for an assessment report that should be provided by an independent testing entity following an assessment of a sewage treatment system's performance. As this report forms part of the legal record keeping requirements, it would be greatly appreciated if independent testing entities could adhere to the style/format of these templates (to the maximum extent possible). This will ensure a high level of consistency in the official documentation which will help ease interpretation and understanding of assessment results by ship owners and operators, compliance officers, other independent testing entities and potential purchasers of ships

fitted with treatment systems. Templates for these reports are available from the Maritime Safety Queensland website: <http://www.msq.qld.gov.au/Marine-pollution/Sewage/Sewage-assessment>.

The mandatory levels listed in each of the following attachments (Attachment 2, Attachment 4 and Attachment 6) are a summary of the requirements for the various grades of treated sewage, please ensure that you:

- 1) obtain a complete copy of the relevant legislative requirements for treated sewage (Schedule 5 of the TOMPR, Part 2 for Grade A Treated Sewage, Part 3 for Grade B Treated Sewage or Part 4 for Grade C Treated Sewage), and
- 2) ensure that these are made available to the relevant independent testing entity.

Please remember that an independent testing entity must be accredited by NATA to perform the analyses of the 'Mandatory Levels' stated in Attachment 2, Attachment 4 and Attachment 6 of this guideline document. However, an independent testing entity is not required to be accredited by NATA to perform the analyses of the 'Indicative Levels' stated in Attachment 2, Attachment 4 and Attachment 6 of this guideline document.

Attachment 1: Summary of requirements for the collection and submission of samples to laboratories¹

Sewage Quality Characteristic	Container Type ²	Filling Technique	Preservation	Maximum Holding Time	Comments
Biochemical Oxygen Demand (5 days)	2000 mL HDPE Detergent Washed	Do not pre-rinse container. Fill container completely to exclude air.	Refrigerate and store in the dark	24 hours	Samples must be received at the laboratory within 24 hours of sampling. Prior contact with the laboratory conducting the analysis is required to check appropriate sample submission times/days.
pH	Sample analysed from above 2000 mL container.	As above	As above	6 hours	Test should be carried out as soon as possible, preferably in the field.
Total Suspended Solids	Sample analysed from above 2000 mL container.	As above	As above	24 hours	-
Total Suspended Solids– Blank NOTE: This blank is only required for Grade A and Grade B treated sewage.	1000 mL HDPE Detergent Washed	Fill container completely to exclude air	Refrigerate	24 hours	Samples must be received at the laboratory within 24 hours of sampling. Prior contact with the laboratory conducting the analysis is required to check appropriate sample submission times/days.
Total Nitrogen & Total Phosphorous	250 mL HDPE Reverse Osmosis Water Washed	Fill container to 90% full only, to allow for expansion on freezing	Freeze	1 month	-

¹ These procedures are based on ISO 5667-3: 2012–Water Quality– Sampling–Part 3: Guidance on the preservation and handling of water samples.

² Sample containers should be sourced directly from the laboratory conducting the analysis as the sample containers undergo standard quality control procedures to ensure valid results.

Sewage Quality Characteristic	Container Type ²	Filling Technique	Preservation	Maximum Holding Time	Comments
Free Chlorine & Total Chlorine	250 mL HDPE Detergent Washed	Fill container completely	Store in dark	5 minutes	The analysis should be carried out in the field within five minutes of sample collection. Note: If this is not possible, refrigerate samples. However, laboratory analysis of submitted samples will only produce indicative values.
Thermotolerant (Faecal) Coliforms	250 mL Polystyrene Sterile	Do not pre-rinse container. Do not touch inside of container or lid during sampling	Container should contain 25 mg sodium thiosulphate to neutralise chlorine	24 hours	Samples must be received at the laboratory within 24 hours of sampling. Prior contact with the laboratory conducting the analysis is required to check appropriate sample submission times/days.

Attachment 2: Summary of analyses required for a Grade A sewage treatment system

The mandatory levels listed below are a summary of the requirements for Grade A treated sewage stated in the legislation, please ensure that you:

- 1) obtain a complete copy of the relevant legislative requirements for Grade A treated sewage (Schedule 5, Part 2 of TOMPR), and
- 2) ensure that these are made available to the relevant independent testing entity.

Grade A: Mandatory Levels (NATA accreditation required)

- Thermotolerant Coliforms (must not exceed 250 thermotolerant coliforms/100 mL)
- Suspended Solids (must not exceed 50 mg/L)*
- Biochemical Oxygen Demand (must not exceed 50 mg/L)

***Note:** The suspended solids content of Grade A Treated Sewage must not be more than 50 mg/L above the suspended solids content of the ambient water used for flushing purposes, that is, the blank.

Grade A: Indicative Levels (NATA accreditation not required)

- Residual Chlorine*—
 - within 5 minutes of sampling (should not exceed 10 mg/L)
 - within 24 hours of sampling (should not exceed 5 mg/L)
- Total Nitrogen (should be in the range of 20–150 mg/L)
- Total Phosphorous (should be in the range of 9–40 mg/L)
- pH (should be in the range of 6.0–8.5)

***Note:** Sewage treatment systems that do not use and generate chlorine do not require the analysis of residual chlorine to be performed, in such cases simply insert “N/A” in the appropriate place on the assessment report.

Sewage treatment systems that do use and generate chlorine do require the analysis of residual chlorine to be performed. In such cases please ensure that the relative time that the analysis was performed is clearly indicated on the assessment report, that is, ‘within 5 minutes of sampling’ or ‘within 24 hours of sampling’ (for further information see note on chlorine analysis in *Attachment 1: Summary of requirements for the collection and submission of samples to laboratories*).

Attachment 3: Example of an assessment report to be provided by an independent testing entity following the assessment and performance of a Grade A sewage treatment system³

(NOTE: This report to have official NATA insignia/logo attached)

(insert name of independent testing entity and the contact details of the relevant laboratory representative in the spaces below)

Enquiries to:
Telephone:
Facsimile:
Email:
Our Ref:

WATER ANALYSIS REPORT

To: (insert name of manufacturer/distributor requesting analysis here)
 (insert company name of manufacturer/distributor requesting analysis – if applicable – here)
 (insert address of manufacturer/distributor requesting analysis)

Results of Analysis of Treated Sewage from Grade A “INSERT SEWAGE TREATMENT SYSTEM NAME HERE” Sewage Treatment System

Your Reference and Date Received	Our Reference	Thermotolerant Coliforms ⁱ (MPN/100mL)	Total Suspended Solids ⁱ (mg/L)	Biochemical Oxygen Demand ⁱ (mg/L)	Residual Chlorine ⁱⁱ (mg/L)	Total Nitrogen (mg/L)	Total Phosphorous (mg/L)	pH
Method Reference		(insert method ref. no. here)	(insert method ref. no. here)	(insert method ref. no. here)	(insert method ref. no. here)	(insert method ref. no. here)	(insert method ref. no. here)	(insert method ref. no. here)
1a. 090218 Grade A-08:30		—	—	—	—	—	—	—
1b. 090218 BLANK-08:30		—	—	—	—	—	—	—
Grade A treated sewage must not exceed the following values:		250 MPN/100mL	50 ⁱⁱⁱ mg/L	50 mg/L	iv	iv	iv	iv

Notes:

ⁱ Independent Testing Entity must have NATA accreditation for these analyses.
ⁱⁱ Please indicate when residual chlorine samples were analysed (i.e. 'within 5 minutes of sampling' or 'within 24 hours of sampling').
ⁱⁱⁱ Total suspended solids must not be more than 50mg/L above the suspended solids content of the ambient water used for flushing.
^{iv} Refer to **Step 6: Testing/Analysis Requirements—Part B Indicative Levels** of the guidelines for the “Requirements for the Ongoing Assessment of Treatment System Performance” for these indicative values.
 — indicates blank analysis not required for this sewage quality characteristic (i.e. blank analysis required for total suspended solids only).

EST = Estimated Count
 MPN = Most Probable Number

(insert name of the relevant independent testing entity laboratory representative here) **Date:**

NATA Signatory
 (insert relevant departmental details for laboratory representative)

Office
 (insert office address details for independent testing entity here)

Postal
 (insert postal address details for independent testing entity here)

Telephone
 Main Enquiries Number:
 (insert main telephone contact details for independent testing entity here)

Facsimile
 Main Office Number:
 (insert main facsimile contact details for independent testing entity here)

NATA Accredited Laboratory Number (insert 'Accredited Laboratory Number' for independent testing entity here). These results relate to the sample as collected.
 This document may not be reproduced except in full, without the written approval of (insert name of independent testing entity here).

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³ A template for this report is available from the Maritime Safety Queensland website:
<http://www.msq.qld.gov.au/Marine-pollution/Sewage/Sewage-assessment>

Attachment 4: Summary of analyses required for a Grade B sewage treatment system

The mandatory levels listed below are a summary of the requirements for Grade B treated sewage stated in the legislation, please ensure that you:

- 1) obtain a complete copy of the relevant legislative requirements for Grade B treated sewage (Schedule 5, Part 3 of TOMPR), and
- 2) ensure that these are made available to the relevant independent testing entity.

Grade B: Mandatory Levels (NATA accreditation required)

- Thermotolerant Coliforms (must not exceed 150 thermotolerant coliforms/100 mL)
- Suspended Solids (must not exceed 50 mg/L)*

***Note:** The suspended solids content of Grade B Treated Sewage must not be more than 50 mg/L above the suspended solids content of the ambient water used for flushing purposes, that is, the blank.

Grade B: Indicative Levels (NATA accreditation not required)

- Residual Chlorine*—
 - within 5 minutes of sampling (should not exceed 10 mg/L)
 - within 24 hours of sampling (should not exceed 5 mg/L)
- Total Nitrogen (should be in the range of 210–940 mg/L)
- Total Phosphorous (should be in the range of 16–90 mg/L)
- pH (should be in the range of 6.0–8.5)

***Note:** Sewage treatment systems that do not use and generate chlorine do not require the analysis of residual chlorine to be performed, in such cases simply insert “N/A” in the appropriate place on the assessment report.

Sewage treatment systems that do use and generate chlorine do require the analysis of residual chlorine to be performed. In such cases please ensure that the relative time that the analysis was performed is clearly indicated on the assessment report, that is, ‘within 5 minutes of sampling’ or ‘within 24 hours of sampling’ (for further information see note on chlorine analysis in *Attachment 1: Summary of requirements for the collection and submission of samples to laboratories*).

Attachment 5: Example of an assessment report to be provided by an independent testing entity following assessment and performance of a Grade B sewage treatment system⁴

(NOTE: This report to have official NATA insignia/logo attached)

(insert name of independent testing entity and the contact details of the relevant laboratory representative in the spaces below)

Enquiries to:
Telephone:
Facsimile:
Email:
Our Ref:

WATER ANALYSIS REPORT

To: (insert name of manufacturer/distributor requesting analysis here)
 (insert company name of manufacturer/distributor requesting analysis – if applicable – here)
 (insert address of manufacturer/distributor requesting analysis)

Results of Analysis of Treated Sewage from Grade B “*INSERT SEWAGE TREATMENT SYSTEM NAME HERE*” Sewage Treatment System

Your Reference and Date Received	Our Reference	Thermotolerant Coliforms ⁱ (MPN/100mL)	Total Suspended Solids ⁱ (mg/L)	Residual Chlorine ⁱⁱ (mg/L)	Total Nitrogen (mg/L)	Total Phosphorous (mg/L)	pH
Method Reference		(insert method ref. no. here)	(insert method ref. no. here)	(insert method ref. no. here)	(insert method ref. no. here)	(insert method ref. no. here)	(insert method ref. no. here)
1a_ 090218 Grade B-08:30							
1b_ 090218 BLANK-08:30							
Grade B treated sewage must not exceed the following values:		150 MPN/100mL	50ⁱⁱⁱ mg/L	iv	iv	iv	iv

Notes:

- ⁱ Independent Testing Entity must have NATA accreditation for these analyses.
- ⁱⁱ Please indicate when residual chlorine samples were analysed (i.e. 'within 5 minutes of sampling' or 'within 24 hours of sampling').
- ⁱⁱⁱ Total suspended solids must not be more than 50mg/L above the suspended solids content of the ambient water used for flushing.
- ^{iv} Refer to **Step 6: Testing/Analysis Requirements-Part B Indicative Levels** of the guidelines for the “Requirements for the Ongoing Assessment of Treatment System Performance” for these indicative values.

— indicates blank analysis not required for this sewage quality characteristic (i.e. blank analysis required for total suspended solids only).

EST = Estimated Count
 MPN = Most Probable Number

(insert name of the relevant independent testing entity laboratory representative here) **Date:**

NATA Signatory
 (insert relevant departmental details for laboratory representative)

Office
 (insert office address details for independent testing entity here)

Postal
 (insert postal address details for independent testing entity here)

Telephone
 Main Enquiries Number:
 (insert main telephone contact details for independent testing entity here)

Facsimile
 Main Office Number:
 (insert main facsimile contact details for independent testing entity here)

NATA Accredited Laboratory Number (insert 'Accredited Laboratory Number' for independent testing entity here). These results relate to the sample as collected.
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⁴ A template for this report is available from the Maritime Safety Queensland website:
<http://www.msq.qld.gov.au/Marine-pollution/Sewage/Sewage-assessment>

Attachment 6: Summary of analyses required for a Grade C sewage treatment system

The mandatory levels listed below are a summary of the requirements for Grade C treated sewage stated in the legislation, please ensure that you:

- 1) obtain a complete copy of the relevant legislative requirements for Grade C treated sewage (Schedule 5, Part 4 of TOMPR), and
- 2) ensure that these are made available to the relevant independent testing entity.

Grade C: Mandatory Levels (NATA accreditation required)

- Thermotolerant Coliforms (must not exceed 150 thermotolerant coliforms/100 mL)

Grade C: Indicative Levels (NATA accreditation not required)

- Residual Chlorine*—
 - within 5 minutes of sampling (should not exceed 10 mg/L)
 - within 24 hours of sampling (should not exceed 5 mg/L)
- Total Nitrogen (should be in the range of 400–1700 mg/L)
- Total Phosphorous (should be in the range of 25–130 mg/L)
- pH (should be in the range of 6.0–8.5)

***Note:** Sewage treatment systems that do not use and generate chlorine do not require the analysis of residual chlorine to be performed, in such cases simply insert “N/A” in the appropriate place on the assessment report.

Sewage treatment systems that do use and generate chlorine do require the analysis of residual chlorine to be performed. In such cases please ensure that the relative time that the analysis was performed is clearly indicated on the assessment report, that is, ‘within 5 minutes of sampling’ or ‘within 24 hours of sampling’ (for further information see note on chlorine analysis in ‘*Attachment 1: Summary of requirements for the collection and submission of samples to laboratories*’).

Attachment 7: Example of an assessment report to be provided by an independent testing entity following assessment and performance of a Grade C sewage treatment system⁵

(NOTE: This report to have official NATA insignia/logo attached)

(insert name of independent testing entity and the contact details of the relevant laboratory representative in the spaces below)

Enquiries to:
Telephone:
Facsimile:
Email:
Our Ref:

WATER ANALYSIS REPORT

To: (insert name of manufacturer/distributor requesting analysis here)
 (insert company name of manufacturer/distributor requesting analysis – if applicable – here)
 (insert address of manufacturer/distributor requesting analysis)

Results of Analysis of Treated Sewage from Grade C “*INSERT SEWAGE TREATMENT SYSTEM NAME HERE*” Sewage Treatment System

Your Reference and Date Received	Our Reference	Thermotolerant Coliforms ⁱ (MPN/100mL)	Residual Chlorine ⁱⁱ (mg/L)	Total Nitrogen (mg/L)	Total Phosphorous (mg/L)	pH
Method Reference		<i>(insert method ref. no. here)</i>	<i>(insert method ref. no. here)</i>	<i>(insert method ref. no. here)</i>	<i>(insert method ref. no. here)</i>	<i>(insert method ref. no. here)</i>
1a. 090218 Grade C-08:30						
Grade C treated sewage must not exceed the following values:		150 MPN/100mL	ii	ii	ii	ii

Notes:

ⁱ Independent Testing Entity must have NATA accreditation for these analyses.
ⁱⁱ Please indicate when residual chlorine samples were analysed (*i.e.* ‘within 5 minutes of sampling’ or ‘within 24 hours of sampling’).
ⁱⁱⁱ Refer to **Step 6: Testing/Analysis Requirements–Part B Indicative Levels** of the guidelines for the “Requirements for the Ongoing Assessment of Treatment System Performance” for these *indicative* values.

EST = Estimated Count
 MPN = Most Probable Number

(insert name of the relevant independent testing entity laboratory representative here) **Date:**

NATA Signatory
 (insert relevant departmental details for laboratory representative)

Office
(insert office address details for independent testing entity here) **Postal**
(insert postal address details for independent testing entity here) **Telephone**
Main Enquiries Number:
(insert main telephone contact details for independent testing entity here) **Facsimile**
Main Office Number:
(insert main facsimile contact details for independent testing entity here)

NATA Accredited Laboratory Number (insert ‘Accredited Laboratory Number’ for independent testing entity here). These results relate to the sample as collected.
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⁵ A template for this report is available from the Maritime Safety Queensland website: <http://www.msq.qld.gov.au/Marine-pollution/Sewage/Sewage-assessment>