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BAY OF PLENTY ON-SITE EFFLUENT TREATMENT REGIONAL PLAN

7 August 2006

Plan Change 1 (Date Deferral for Small Communities) incorporated on 1 March 2011

Plan change 2 (Maintenance Zones) incorporated on 12 August 2014

Bay of Plenty
On-Site Effluent Treatment Regional Plan
Update Record

Date	Change/Update	Provisions Affected
8 May 2015	Minor amendments (typographical and formatting errors)	• Section 1.5.3 • 2.3 Problem areas (removal of reference to Matatā) • Rules 1, 2, 3, 4, 5, 13 and 14 (correct minor errors) • Flow Diagram 4
12 August 2014	Plan Change 2 adopted and incorporated	• Maintenance Zone Maps and new policy for identifying new Maintenance Zones • New Maintenance Zones at Bryans Beach • Operating, Confirmed and Future Reticulation Zones mapped • Compliance dates by which Rotorua Communities are required to update their OSET systems extended • Financial contributions provisions amended to include formula to calculate financial contributions and associated new Policy • Minimum standard requirements for systems in Maintenance Zones • Resource consent term of generally 10 years • Clarify properties over 2 ha are addressed under the Regional Water and Land Plan
	Other minor and consequential amendments	• Update record and Table of Contents updated • Introduction and science information updated • Redundant plan schedules removed or amended • On-going use and phasing out of soak holes clarified • Reference to Bay of Plenty Regional Council (updated) • Reference to 2006 ‘On-Site Effluent Treatment Regional Plan 2006’ (removed) • Section 2.2, Para 3 (typographical error) • Reference to AS/NZS 1547:2000 (replaced) • References to ‘the plan’ (amended) • Section 1.5.1 (spelling mistake) • Māori place names amended (phonetic spelling) • References to ‘advanced system(s)’ and ‘advanced on-site effluent treatment system(s)’ (replaced) • References to ‘Conventional on-site effluent treatment system(s) (replaced)

1 March 2011	Plan Change 1 adopted and incorporated	• 2.3 Definition of Problem Areas, 3.3 Selection and Design of On-Site Effluent Treatment Systems, 4.1 Issues • Septic Tank Effluent Treatment Systems: Rules 1, 2, 3 and 6 • Aerated wastewater treatment systems: Rule 11 • Schedule 6 - Maintenance Zone Maps
	Other minor and consequential amendments	• Update record inserted • Table of Contents updated • References to Bay of Plenty Regional • Council; Proposed Regional Water and • Land Plan; On-Site Effluent Treatment • Regional Plan (updated) • Section 3.3.2(e), Nutrient Removal Systems, Para 1 (spelling mistake) • Section 5.1, Guide to Rules (incorrect page references) • Section 5.4, Rule 16 (spelling mistake) • Schedule 1, Table 5. Septic tank capacities, A: Note 1, (Consistent use of wording) • Schedule 1, Table 6 (missing information) • Schedule 1, Advisory Notes #1 (incorrect reference) • Schedule 1, Advisory Notes (missing information) • Schedule 1, (inaccurate Figure) • Definition of Terms, LPED (typographical error, spelling mistake) • Definition of Terms, LPP (Wrong acronym)

RESOURCE MANAGEMENT ACT 1991

BAY OF PLENTY REGIONAL COUNCIL

ON-SITE EFFLUENT TREATMENT REGIONAL PLAN 2006

It is hereby certified that this is the On-Site Effluent Treatment Regional Plan 2006 approved by resolution of the Council on the 6th day of July 2006.

The Council has further resolved that the Plan shall become operative on the 7th day of August 2006.

John Cronin
Chairperson

Bill Bayfield
Chief Executive

THE BAY OF PLENTY REGIONAL COUNCIL
The Common Seal of

Plan Change 1 (Date Deferral for Small Communities) Incorporated on 1 March 2011.

John Cronin
Chairperson

Bill Bayfield
Chief Executive

Plan Change 2 (Maintenance Zones) Incorporated on 12 August 2014.

Douglas Leeder
Chairperson

Mary-Anne Macleod
Chief Executive

Reader's Guide

There may be some parts of this regional plan that are of particular interest to the reader. To find these parts, the following guide gives a brief summary of what each chapter is about

Chapter One: Introduction names the regional plan; defines the scope and overall purpose of the plan and outlines the legislation that is relevant to the development of the plan.

Chapter Two: Environmental Impact gives information on the environmental problems relating to the use of septic tanks and where in the region these problems are worst.

Chapter Three: Suitability, Design and Maintenance of On-Site Effluent Treatment Systems discusses the factors that affect how well on-site effluent treatment systems can work in the Bay of Plenty and identifies the technical requirements for on-site effluent treatment systems and the site evaluation and system selection process.

Chapter Four: **Issues, Policies and Methods** contains the objectives, policies and implementation methods (excluding rules) that Bay of Plenty Regional Council and the city/district councils of the Bay of Plenty intend to use in the management of non-sewered human waste.

Chapter Five: Regional Rules contains the regional rules relating to on-site effluent treatment in the Bay of Plenty.

Chapter Six: Financial Contributions can be imposed as a condition of resource consent.

Chapter Seven: Information to be Submitted with Resource Consent Applications directs resource consent applicants to contact Bay of Plenty Regional Council to ensure sufficient information is submitted with a consent application.

Chapter Eight: Anticipated Environmental Results lists the environmental outcomes that are expected as a result of the provisions in this regional plan.

Chapter Nine: Cross Boundary Issues identifies the methods and processes that will be used to identify and address resource management issues that cross the boundaries between districts and between regional councils.

Chapter Ten: Plan Review Process identifies the process that will be used to review this regional plan, and assess the effectiveness and efficiency of its provisions.

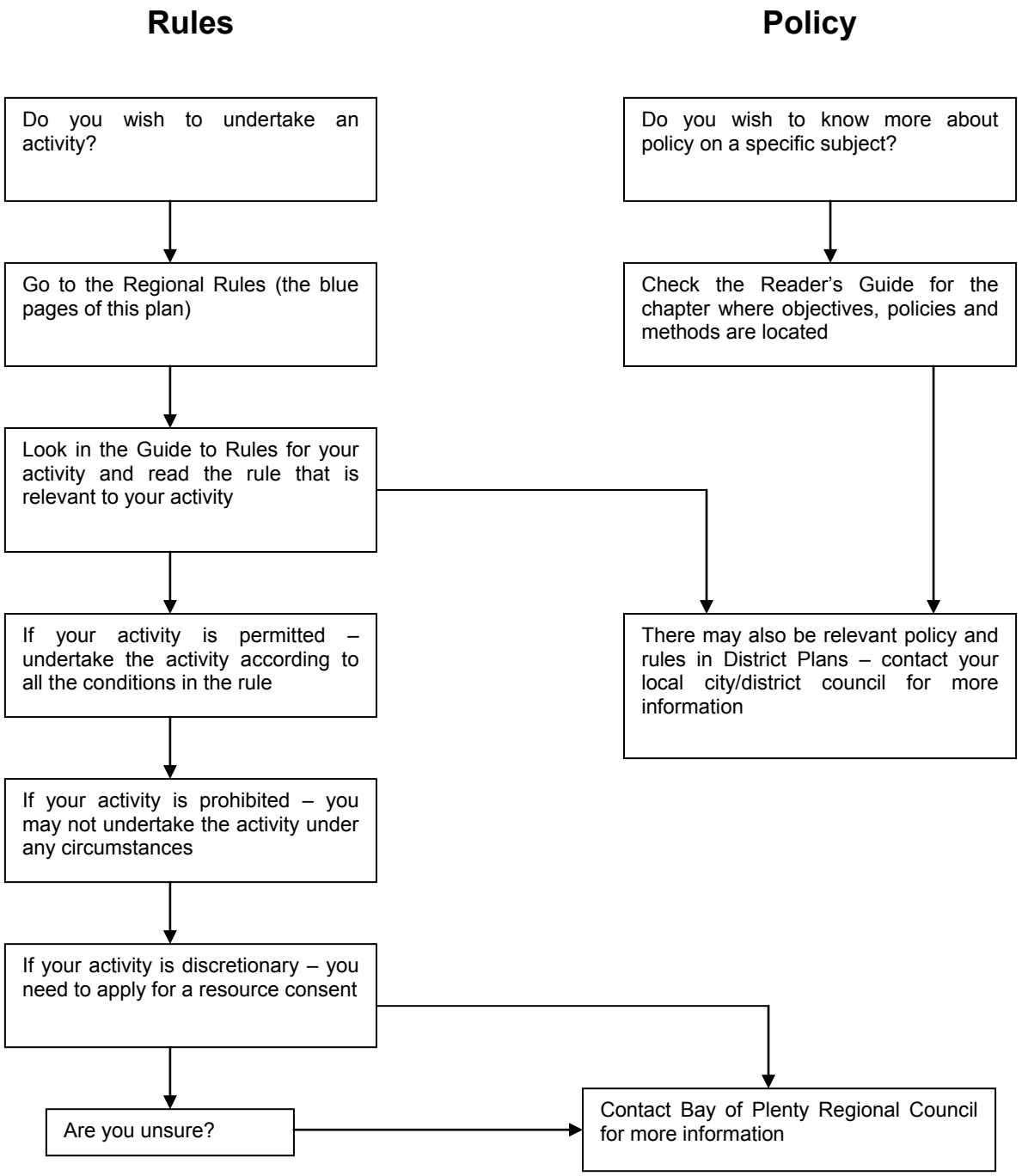
Schedules: Contain more detailed information and data related to the above chapters necessary to the provisions and requirements of the plan.

Definition of Terms used in this regional plan.

Bibliography sources used in preparing this plan.

Appendices provide further technical detail that although is not necessary to the provisions of the plan, may be of interest to plan users.

How to use this Regional Plan



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1 Introduction

1.1 Citation

Para 1 This regional plan may be cited as the On-Site Effluent Treatment Regional Plan and is referred to as "this regional plan" or "the regional plan" throughout this document. It is also referred to as the OSET Plan. It has been prepared by the Bay of Plenty Regional Council to assist it to carry out its functions in order to achieve the purpose of the Resource Management Act 1991.

Para 2 Any reference in this regional plan to Environment Bay of Plenty shall be read as reference to the Bay of Plenty Regional Council.

Para 3 The definitions used in this plan are principally those of the Resource Management Act 1991, unless otherwise stated.

1.2 Scope of Plan

1.2.1 Spatial Coverage

Para 1 The On-Site Effluent Treatment Regional Plan for the Bay of Plenty covers all the area within the Bay of Plenty Regional Council boundary, as seen in Map 1, excluding the coastal marine area.

1.2.2 Issue Coverage

Para 1 This regional plan addresses issues relating to the adverse effects caused by the discharge of effluent from on-site effluent treatment systems into the environment.

Para 2 Throughout this regional plan various terms are used to describe on-site effluent treatment systems. There are many configurations of the different components that make up an on-site effluent treatment system; however this regional plan requires that the final design of new systems align with the requirements of New Zealand Standards (NZS) which provide the performance objectives, requirements, and criteria to achieve sustainable and effective on-site domestic wastewater management, and to protect public health and the environment. See Section 1.5.4 for information on NZS.

There are three main on-site effluent treatment systems referenced in this regional plan and these are defined as:

- **Septic Tank Effluent Treatment System:** A single or multiple chambered tank or tanks through which wastewater is allowed to flow slowly to permit suspended matter to settle and be retained, so that organic matter contained therein can be decomposed (digested) by anaerobic bacterial action in the liquid. The resulting primary treated effluent is then discharged to a land application system for further treatment in the soil.

  Septic tank on-site effluent treatment systems do not incorporate secondary aerobic treatment but may include an outlet filter to protect the land application system.

  In previous versions of this regional plan, septic tank effluent treatment systems were referred to as 'conventional' on-site effluent treatment systems.

- **Aerated Wastewater Treatment System (AWTS):** A system of treatment of wastewater in tanks; following anaerobic treatment, a process of aeration followed by clarification is used to achieve the biological treatment of wastewater. The resulting secondary treated effluent is then discharged to a land application system for further treatment in the soil. A list of approved AWTS systems can be viewed on the Bay of Plenty Regional Council website.

- **Aerated Wastewater Treatment System with Nutrient Reduction (AWTS+NR):** A system similar to the AWTS described above but uses additional processes to achieve a reduction of nutrients (mainly nitrogen) in the wastewater. The resulting low nutrient secondary treated effluent is then discharged to a land application system for further treatment in the soil. A list of approved AWTS+NR systems can be viewed on the Bay of Plenty Regional Council website.

  In previous versions of this regional plan, aerated wastewater treatment systems were referred to as 'advanced' on-site effluent treatment systems.

  The regional plan allows alternative wastewater treatment system configurations to be considered under resource consents, where testing by an accredited testing facility, such as the On-site Effluent Treatment National Testing Programme (OSET NTP), demonstrates that similar levels of treatment and effluent quality can be achieved.

  Policy 34 of the regional plan limits the term for a resource consent granted to discharge effluent from any on-site effluent treatment system to generally 10 years. It is important to ensure that the performance of systems is reviewed at reasonable intervals. The 10 year period recognises the overall life expectancy of components in an on-site effluent treatment system, the need to re-evaluate its performance within a reasonable period and the ten year review period for this regional plan.

Map 1 – The Bay of Plenty Region

1.3 Purpose of Plan

Para 1 The purpose of this plan is to reduce the impact of domestic sewage discharged from on-site effluent treatment systems in the Bay of Plenty. Inappropriate system design, bad installation practice and poor or no system maintenance all contribute to elevated levels of nutrients and pathogens in surface water bodies, groundwater and land within the Bay of Plenty. Elevated nutrient levels contribute to eutrophication of lakes, rivers and estuaries and weed growth in estuaries. Elevated pathogen levels increase the chances of disease contraction and transmission, particularly skin and gut infections.

Para 2 The adverse environmental effects of discharges from on-site effluent treatment systems will be avoided, remedied or mitigated by:

(a) requiring the best practicable design, installation and maintenance of on-site effluent treatment systems; and

(b) ensuring that each on-site effluent treatment system is used in accordance with its capacities and the constraints of its location.

Para 3 Under section 15 of the Resource Management Act 1991 a discharge is only authorised if it is permitted by a regional plan or if a discharge permit has been obtained. The preparation and implementation of the On-Site Effluent Treatment Regional Plan is the only way of avoiding the requirement that every discharge from an on-site effluent treatment system in the Bay of Plenty region has a discharge permit.

1.4 Best Practicable Option

Para 1 This plan adopts a Best Practical Option ('BPO') approach, and sets standards for the design of effluent treatment and disposal. If an on-site effluent treatment system complies with these standards, the discharge of effluent is considered to qualify as a 'permitted activity'.

Para 2 The Resource Management Act 1991 defines 'Best Practicable Option' as:

"Best practicable option", in relation to a discharge of a contaminant or an emission of noise, means the best method for preventing or minimising the adverse effects on the environment having regard, among other things, to —

(a) The nature of the discharge or emission and the sensitivity of the receiving environment to adverse effects; and
(b) The financial implications, and the effects on the environment, of that option when compared with other options; and
(c) The current state of technical knowledge and the likelihood that the option can be successfully applied.

Para 3 The problem of on-site disposal of effluent is the cumulative effect of a large number of small discharges. To develop a rule defining a minimum standard for the on-site treatment of effluent would be possible, but to monitor the impact of each system for compliance with that standard would be impractical and financially unsustainable. It would also be impractical to insist that all property owners provide an environmental impact assessment and ongoing monitoring programme for their system, if it is of a standard design.

Para 4 For systems of standard design there is information available about the efficiencies and capabilities of these systems and the expected environmental impacts from using these systems under usual site constraints. Therefore it can be determined whether the standard design is the best practicable option for a particular site based on site constraints and the level of environmental protection the standard design system can offer.

Para 5 New and alternative technologies for effective waste treatment and disposal are constantly being developed and need to be incorporated into a consideration of best practicable options for a site. This allows the innovation of new technologies to be considered as alternative options for certain sites to protect the specific environments. The cost of some new technologies are in proportion to the benefits of the environmental protection required for specific areas for the region. Education about alternative and new technologies is essential to ensure the best practicable option can be chosen for a site, and ensure that the cost and benefit of new and alternative technologies are understood and accepted.

Para 6 Section 70 of the Resource Management Act 1991 applies to the BPO Approach:

> *(2) Before a regional council includes in a regional plan a rule requiring the adoption of the best practicable option to prevent or minimise any actual or likely adverse effect on the environment of any discharge of a contaminant, the regional council shall be satisfied that, having regard to —*
>
> *(a) The nature of the discharge and the receiving environment; and*
>
> *(b) Other alternatives, including a rule requiring the observance of minimum standards of quality of the environment, —*
>
> *the inclusion of that rule in the plan is the most efficient and effective means of preventing or minimising those adverse effects on the environment.*

1.5 Legislative Framework and New Zealand Standards

There are three Acts which define the functions and obligations of various authorities regarding the effects of the use of on-site domestic effluent treatment systems. These are the Resource Management Act 1991, the Health Act 1956 and the Building Act 2004.

1.5.1 Resource Management Act 1991

Para 1 The philosophy behind the purpose of the plan is that of the Resource Management Act 1991 — sustainable management. Well designed, located and maintained on-site effluent treatment systems should be capable of operating indefinitely with minimal off-site effects.

Para 2 The functions of regional councils are specified in section 30 of the Resource Management Act 1991 (RMA). This gives Bay of Plenty Regional Council primary responsibility to control use and development activities for the purposes of soil conservation, maintaining or enhancing water quality, maintaining and enhancing aquatic ecosystems, maintaining water quantity, and avoiding or mitigating natural hazards. The Act also gives regional councils other environmental management functions, such as monitoring (section 35), development of regional plans (Part V), resource consents (Part VI), and enforcement (Part XII).

Para 3 Part III of the Resource Management Act 1991 describes the duties and restrictions under the Act, which includes section 15 (discharges to the environment). Bay of Plenty Regional Council also has responsibility under Section 30(1)(f) of the Resource Management Act 1991 to control discharges of contaminants into or onto land, water and discharges of water into water. In some cases, the discharge of effluent from on-site effluent systems in the Bay of Plenty is a permitted activity, provided all of the general conditions of a permitted activity rule can be met. Where Council has regional rules to manage a discharge to the environment, it assesses the risk of the activity relative to its main responsibilities under section 30 of the Act. Regional councils can only write permitted activity rule conditions to avoid, remedy or mitigate adverse effects on soil conservation values, water quality, water quantity, natural hazards, and aquatic vegetation and habitats.

Para 3A Where a discharge from an on-site effluent treatment system cannot meet the requirements of a permitted activity rule, it will default to a discretionary activity and require a resource consent from Bay of Plenty Regional Council. Where the discharge from an on-site effluent treatment system requires a resource consent under this plan, the activity will be assessed in accordance with this plan and sections 3 and 9.4 of the Proposed Regional Water and Land Plan.

Para 4 Bay of Plenty Regional Council considers that the present environmental impacts identified in Chapter 2 of this plan are sufficiently serious to warrant the development of objectives, policies, rules and other methods of implementation to control contamination caused by the discharge of sewage from on-site effluent treatment systems. Bay of Plenty Regional Council is required to fulfil its responsibilities under sections 15 and 30(1)(f) of the Resource Management Act 1991, namely to control specific, identified sources of contaminants which are having a measurable adverse effect on the environment.

Para 5 The reasons for allowing the continued use of on-site effluent treatment, rather than promoting full sewerage reticulation in the areas worst affected, are discussed in Chapter 4 of the plan. In summary the reasons are:

- The cost of a full reticulation system must be considered against a range of other systems including partially reticulated systems and separate on-site effluent treatment systems to meet the requirements of the Resource Management Act 1991.
- Effluent treatment which results in returning effluent to the land for treatment maybe a more culturally acceptable option than disposal directly to water. This meets the requirements of sections 6(e), 7(a) and 7(f) of the Act.
- Where nutrient contamination of local environments are having a serious detrimental affect, aerated wastewater treatment systems with nutrient removal capabilities may be the more desirable and effective option.

1.5.2 Health Act 1956

Para 1 The Health Act supports the Resource Management Act in endeavouring to control adverse effects caused by the inadequate management of on-site effluent treatment of domestic wastewater. While the Resource Management Act focuses on the health of the environment, the Health Act focuses on human health, however both can work in tandem to address existing health problems. The sections of the Health Act relevant to this plan are administered by territorial authorities. The Health Act requires territorial authorities to '…improve, promote and protect public health within its district…' and directs it to detect and abate '…any nuisances, or any conditions likely to be injurious to health or offensive…'. In the context of this plan the Health Act is largely retrospective, as it deals with problems that have already occurred, for example the failure of on-site effluent treatment systems and the consequent contamination of water resources.

1.5.3 Building Act 2004

Para 1 One of the major purposes of this plan, is to ensure on-site effluent treatment systems are designed and installed to required standards to avoid creating problems in the first place. In this respect the Resource Management Act complements the Building Act. In order to comply with the Building Act all new buildings must meet certain performance criteria and more specifically must be safe and sanitary. In areas where sewerage is not provided, on-site effluent treatment is considered to be part of the building. At the time a building is designed and constructed, its effluent treatment system must be capable of adequate effluent treatment under the Building Regulations. Approval of the system design and inspection of the installation rests with the Building Consent Authority under the Building Act. Clause G13.3.4 of the Building Code states that 'If no sewer is available, facilities for the storage, treatment, and disposal of foul water must be constructed:. *'(d) to avoid the likelihood of contamination of soils, ground water, and waterways except as*

waterways except as permitted under the Resource Management Act 1991.' This means that in the Bay of Plenty region, no Code Compliance Certificate should be issued by a Building Consent Authority for an on-site effluent treatment system unless the system design and installation complies with the requirements of this regional plan or a current Resource Consent. Once a Code Compliance Certificate is granted, on-going system maintenance becomes the responsibility of the home owner.

Para 2 Some existing buildings may change their use, or be used more intensively. Where this occurs, the building owner or developer must obtain a Building Consent from their territorial local authority (city or district council) for advise the Territorial Local Authority (city or district council) of the change of use. This will require a review of the adequacy of the on-site wastewater treatment system. In some circumstances, the wastewater system may need to be replaced or upgraded. If a replacement or upgrade of the wastewater system is needed, the building owner or developer would require Building Consent from the Building Consent Authority. Where the upgrade or replacement of the on-site effluent treatment system does not meet the permitted activity provisions of this Regional Plan, the building owner or developer will need a resource consent from Bay of Plenty Regional Council. Under these circumstances, a building owner or developer will need both Resource consent from the Bay of Plenty Regional Council and a Building Consent from the relevant city or district council.

1.5.4 New Zealand Standards

Para 1 Standards New Zealand have developed a number of joint Australian/New Zealand standards which are relevant to this regional plan:

- AS/NZS 1546.1:2008 On-site domestic wastewater treatment units – Septic tanks
- AS/NZS 1546.3:2008 On-site domestic wastewater treatment units – Aerated wastewater treatment systems
- AS/NZS 1547:2012 On site domestic wastewater management

Para 2 In this plan the standards are referred to as NZS for convenience. NZS 1547 provides an overarching document which provides guidance on dwelling occupancy, the calculation of flows, size of septic tanks and methods of disposal. It also provides information for owners of systems and those who service them. NZS 1546.1 provides details about the construction and configuration of a septic tank. NZS 1546.3 provides details about the configuration of AWTS and methods of testing them.

1.6 Cultural Considerations

Para 1 Notwithstanding general health and safety issues associated with on-site effluent management, sections 6, 7 and 8 of the Resource Management Act 1991 make specific provisions for Maori traditional and cultural matters to be addressed.

Para 2 This plan seeks to recognise and provide for cultural interests in water quality. The concerns of iwi in the Bay of Plenty regarding sewage in water are expressed below. These are views collated in 1993 for the document *Ngaa Tikanga Tiaki I Te Taiao* which resulted from consultation with all iwi of the Bay of Plenty Region. Where specific views have been presented in iwi strategies, those views have been included as direct quotes.

1.6.1 Ngaa Tikanga Tiaki I Te Taiao

Para 1 A summary of those parts of *Ngaa Tikanga Tiaki I Te Taiao* relevant to on-site effluent treatment and water quality follows. The suggested objectives, policies and methods of implementation provided in the document are shown in Appendix A.

Para 2 Degradation of water quality due to the discharge of human effluent adversely affects both the physical and cultural resources of Maori. Any impact on the mauri of the water has an impact on the mauri of those resources, on waahi tapu, areas for healing and cleansing, tohi and purification rites. Taiapure, kaimoana, waahi tapu, access and use of mahinga kai are all aspects which can also be affected.

Para 3 In both traditional and contemporary Maori society all wastes were returned to Papatuanuku (the land) who is the agent of purification. Maori in the Bay of Plenty do not accept that water should be used to transport or treat waste. Land-based treatment systems are seen as a viable alternative to discharge into water, and the use and development of land based treatment systems should be promoted.

Para 4 Contamination of water, both fresh and sea water, seriously restricts the ability of iwi/hapu to utilise food resources in those environments appropriate to their needs. For example, polluted food cannot be used for hui with respect to manaaki ki nga manuhiri, forcing tangata whenua to buy food for the marae.

Para 5 Lake Rotorua has a high level of nutrients promoting algae and weed growth. This can cause waterways to block impeding recreation and food access, as well as causing odour problems and visual impacts. This may impact on tourism and fisheries.

Para 6 Concerns about the use of septic tanks relate to the type of tanks used, land structure and permeability. The inappropriate management of human effluent is culturally abhorrent to Maori.

Para 7 A number of septic tank treatment system designs are not suited to the land's capability to adequately treat waste. The sewage from tanks could mix with groundwater or discharge directly into lakes, rivers or estuaries. The problem is a public problem not just a Maori problem and Iwi/hapu need to be involved in the consent process applicable to their rohe. Iwi/hapu involvement must be provided for in decision making and support for the development of Iwi/hapu management plans.

2 Environmental Impact

2.1 Previous Studies

Para 1 The first technical investigation was undertaken in 1992 to assess the impact of on-site effluent treatment systems on the region's water quality. This resulted in Bay of Plenty Regional Council's Technical Publication Number 6, *Investigation of Septic Tank Effluent Disposal in the Bay of* Plenty *(1992).* The study focused on examining and documenting effluent impact on the environment. Ongoing monitoring and studies by Bay of Plenty Regional Council update and annotate the information included in Technical Publication Number 6. These are:

- Septic Tank Leachate Study for Rotorua Lakes (2000);
- Impact of Septic Tank Contamination at Te Puna (2002, 2003);
- Monitoring of the On-site Effluent Treatment Regional Plan (2001); and
- Setback Distances between Septic Tanks and Bathing Shores at Lake Okareka (2001).

Refer to Bibliography page 243 for full reference to the above documents.

Para 2 Previous studies and current monitoring uses the following approach:

(a) indicator bacterial concentrations of the shorelines are examined,

(b) analyses are made of indicator bacteria and nutrient species in surface and subsurface discharges on land, in water bodies and near shoreline,

(c) sediments and seepage at the shoreline and in water bodies are sampled,

(d) samples are analysed for viral indicators, bacterial and viral pathogens, and

(e) a survey of bacteria and bacterial pathogens in shellfish and sediment are undertaken.

Para 3 The 'Review of On-Site Effluent Treatment and Disposal for Specific Communities' (2001) prepared by Ian Gunn forms the basis of continuing monitoring and inspection programmes undertaken by Bay of Plenty Regional Council.

Para 4 Further information relevant to the regional plan and subsequent plan changes can be found in:

- **'OSET PLAN REVIEW'** a report prepared by Dr Mike Patrick of Resource and Environmental Management Limited (August 2009).
- **'Monitoring impacts of on-site wastewater treatment systems - Bay of Plenty'** a report prepared by Paul Scholes: Bay of Plenty Regional Council Environmental Publication 2011/05 (May 2011).
- **'2010/2011 Rotorua Lakes Trophic Level Index Update'** a report prepared by Paul Scholes: Bay of Plenty Regional Council Environmental Publication 2011/17 (December 2011).

2.2 Effects of Nutrients and Pathogens

Para 1 Although many communities of the Bay of Plenty are reticulated for sewage treatment at a central facility, some are unsewered. These communities are almost all located on the coastal fringe, estuarine shorelines or a lake edge. They vary in size and density of population, but invariably they dispose of their sewage into the soil by way of on-site effluent treatment systems. Problems arise where pathogens and nutrients are not successfully treated on-site. These problems often occur at the shoreline, which is an area of high value to the community and often receives a high level of use. Map 2 shows the unsewered communities in the Bay of Plenty.

Para 2 On-site effluent treatment has traditionally achieved low levels of effluent treatment with contamination of shallow groundwater and nearby waterways occurring when soakage fields fail to deal with effluent loadings. When this occurs primarily nitrogen (in ammonium and nitrate forms) may enter water bodies such as lakes, accelerating eutrophication. Should effluent short circuit a disposal field, pathogenic microorganisms, such as viruses and bacteria, can enter surface water bodies relatively untreated. The Environmental Science and Research Limited publication: *'Guidelines for separation distances based on virus transport between on-site domestic wastewater systems and wells',* gives suggested separation distances between on-site effluent treatment systems and land distribution systems and water bores.

Para 3 Eutrophication is the enrichment primarily by nutrients of a water body with limited flushing abilities. Several of the Rotorua Lakes are experiencing this phenomenon, with some of the more pristine lakes showing some early warning sign of water quality degradation. One of the most significant manifestations of eutrophication is algal blooms, particularly blue-green algae which have the potential to be toxic to animal and humans. Limiting the discharge of nutrients from sources such as on-site sewage systems is important if we are to maintain water quality levels in our lakes or improve those lakes already degraded. However, limiting the discharge of nutrients from on-site effluent treatment systems is just one of a number of measures that can be employed to reduce nutrient sources entering waterways.

2.2.1 Monitoring and Survey Results

Nutrient and bacterial contamination of surface water and some groundwater has been identified in and adjacent to the unsewered sites. Nutrient contamination (enrichment) will result in increased plant growth in the receiving water as weed or algae. Pathogenic contamination increases the likelihood of stomach upsets and skin infections.

2.2.1(a) General Water Quality - Bathing Suitability Surveys

Para 1 Bathing quality of the marine and lake environments (but not riverine) of the Bay of Plenty is found to be generally high. On-site effluent treatment was only implicated in poor bathing water quality of Little Waihi with other communities having some potential risk. Bathing suitability surveys are not used to detect septic tank contamination, but they can show symptoms of a water quality problem of which a cause may be septic tank effluent discharge.

Para 2 Due to blooms of cyano-bacteria (blue-green algae), some Rotorua lakes have had health warnings posted advising the public not to participate in contact recreational activities within these lakes. Algal bloom are caused by increased nutrient availability in lakes. Septic tank effluent is a contributor of nutrients to lakes in some areas.

2.2.1(b) Shoreline Discharges

Para 1 Dramatic reductions of nutrient and bacterial concentrations have been achieved at some sites in the Tauranga urban area after sewage reticulation. Since reticulation of Ōmokoroa the foreshore and stormwater drains have shown a marked reduction in contaminant concentrations. Upgrading on-site treatment systems or the provision of

sewerage for sites such as the nutrient inputs at Rotoma and bacterial contamination at Te Puna West communities could achieve similar reductions in bacterial and nutrient inputs.

Para 2 Monitoring continues to show that stormwater outlets can have elevated nutrient and bacterial content and must be treated with caution when levels exceed guidelines that could affect public health.

Para 3 Contamination can often be attributed to septic tank effluent discharges by using a combination of chemical and microbiological data from surface flows and catchment information. Microbial source tracking (MST) has also been used to further validate contamination from human faecal sources.

2.2.1(c) Sediment and Seepage Quality

Para 1 An indicator that mimicked human pathogenic viruses, F-specific bacteriophage, was used to assess the potential health risk. F-specific bacteriophage are bacterial viruses that are commonly found in the environment and can be derived from both animal and human sources. Their numbers can build up in effluent as it ages in the septic tank or treatment system.

Para 2 Sediment and shellfish samples taken at lake and estuarine sites show a range of elevated indicator bacteria, positive F-specific bacteriophage results and viruses. Sediments have shown higher levels of F-specific bacteriophage than shellfish because samples were able to be taken closer to the source of contamination, in this case septic tank land application systems.

Para 3 Pathogenic *Vibrio* species were surveyed at septic tank sites in estuaries. *Vibrio parahaemolyticus* proved to be widespread in sediments throughout the Bay of Plenty estuaries. Significantly more *Vibrio parahaemolyticus* have been detected in sediments at septic tank sites than at similar sites around the Tauranga urban area. Agricultural sources were also implicated.

Para 4 While F-specific bacteriophage indicates the presence of septic tank effluent at the estuarine shoreline, *Vibrio parahaemolyticus* marked a sphere of influence of the effluent in the receiving water. *Vibrio parahaemolyticus* results were significantly higher at septic tank sites although in the estuarine environment agricultural effluent played a significant part in *Vibrio* abundance. *Vibrio parahaemolyticus* has been found at a high level at certain sites around Tauranga Harbour. These were:

(a) septic tank sites at Tanners Point, and Te Puna West;

(b) agricultural sites at Ongare Point and an intensive farming site at the Wainui Estuary; and

(c) industrial sites within Tauranga City.

Para 5 *Vibrio alginolyticus* does not appear to be related to the use of septic tanks or organic pollutants. Elevated numbers were found at remote sites.

Para 6 The bacteriophage results demonstrate that survival of human pathogenic viruses is possible at the lake and estuarine edge.

2.2.1(d) Shellfish Survey

Para 1 Conventionally Indicator Bacteria have been used to establish contamination of shellfish. However, indicator bacteria levels in estuarine environments can be influenced by a range of sources, human and agricultural. To help determine potential contaminant sources levels of enteric viral species and F-specific bacteriophage have been measured.

Para 2 Human enteric viruses and human-associated F-specific bacteriophage have been found in Tauranga Harbour and Waihi Estuary. Some of the shellfish sampled are in close proximity to communities with on-site waste water systems indicating that faecal contamination from these communities is likely.

2.3 Problem Areas

Para 1 From the initial focus on water quality, it could be seen that generally speaking the water quality of the unsewered areas of the Bay of Plenty is generally good at bathing depth. Localised adverse effects of septic tank effluent are diluted by the estuarine or lake water to acceptable levels within a short distance of the shore. However, the margins of estuaries, lakes, rivers and streams are utilised by the public (particularly infants) and are potentially subject to human faecal contamination, so these localised impacts can be important. Faecal contamination can potentially extend to adjacent shellfish populations. Nutrient contamination of the wider receiving waters is potentially a problem, particularly for lake communities. Estuaries are less sensitive and therefore the effects of nutrients are not as acute, but increasing nutrients can promote eutrophication such as algal growth and decreased water clarity.

Para 2 Finding solutions for sewage treatment in the Western Bay of Plenty communities of Ongare Point, Te Puna West, Tanners Point, in the Rotorua communities of Tarawera, Gisborne Point, Rotomā, Hinehopu, and Lake Rotoehu and in the Ōpōtiki community of Bryans Beach, is recognised as a priority. These communities are identified as areas where degraded water quality may at times pose a issue and this regional plan designates these areas as Maintenance Zones within which there are additional requirements that on-site effluent treatment systems must meet. Maintenance Zone maps are shown in Schedule 10.

Para 3 The regional plan Rules may set dates by which all existing septic tank on-site effluent treatment systems in these communities will need to be:

- upgraded to comply with the Schedule 1 standards of the plan, which may include the use of alternatives such as raised beds and mounds to meet the schedule standards; or
- upgraded to an Aerated Wastewater Treatment System or
- upgraded to a aerated wastewater treatment system with nitrogen reduction if required in a Rotorua lakes Catchment, or
- decommissioned and connected to a district council or approved community sewerage reticulation system.

If unable to meet these alternatives, the homeowner will need to apply for a resource consent from Bay of Plenty Regional Council to authorise the discharge from their septic tank on-site effluent treatment system.

The dates are:

For Western Bay of Plenty communities

(a) Maintenance Zones of Ongare Point and Te Puna West by 1 December 2015.

For Rotorua communities

(b) Maintenance Zones of Hinehopu, Gisborne Point and Rotomā by 1 December 2016,

(c) Maintenance Zone of Tarawera by 1 December 2017,

(d) Lake Rotoehu Catchment by 1 December 2016,

(e) Mamaku township by 1 December 2018.

Para 4 To ensure realistic flexibility, the dates set in the plan are prefaced so that compliance must occur by the date stated or three months after connection to sewerage reticulation becomes available, whichever is the sooner.

Para 5 In previous versions of this regional plan there has been an expectation that the inclusion of a community in a Maintenance Zone was a precursor to reticulation. This is no longer the case. Monitoring of the Tanners Point community has shown that water quality has improved. The improvement is such that there is no longer a compelling case for reticulation. In the interim, Tanners Point will remain as a Maintenance Zone until the contamination issues have been resolved.

Para 6 No date is set for the Maintenance Zone for the Ōpōtiki community of Bryans Beach. If reticulation of these communities is required in the future, this will be the subject of negotiations between the territorial local authority and the communities.

Para 7 Once a city or district council has commissioned a sewerage reticulation system for a community in a Maintenance Zone, the resolution of the contamination issue for the community can only be resolved when all dwellings within the affected area connect onto that reticulation. To encourage this, the regional plan designates areas with completed sewerage reticulation as Operating Reticulation Zones. Within an Operating Reticulation Zone the permitted activity authorisation for a property under this regional plan will cease on the date that connection to the reticulation becomes available at the property boundary and connection to the reticulation can be completed.

2.4 State of the Environment Results

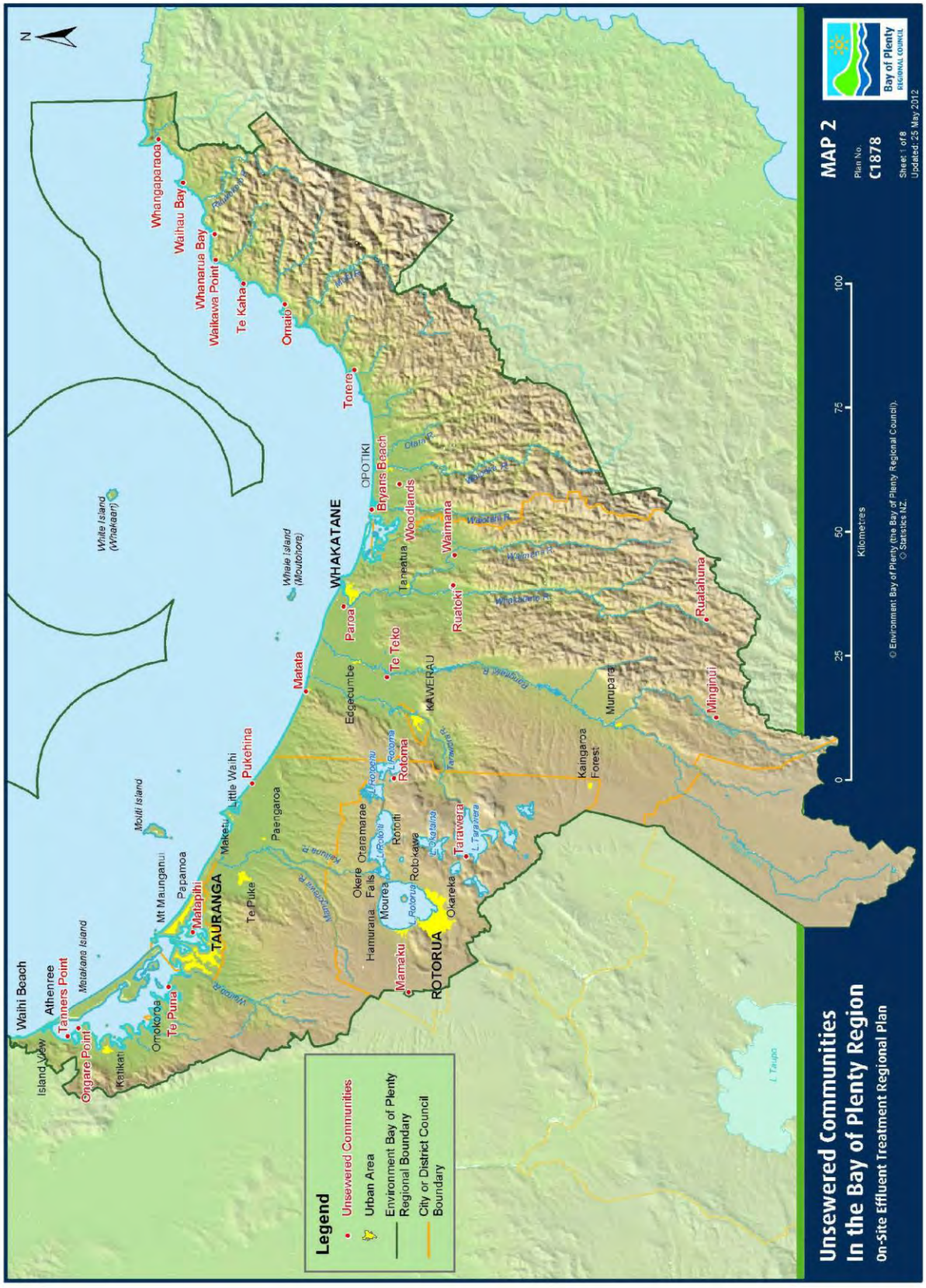
Para 1 The results of the scientific survey show that while the water quality is not generally being adversely affected by septic tank effluent, there are specific areas where levels of pathogens are high. These areas are the "splash zones" of the sea, estuaries and lakes - areas where children are most likely to play.

Para 2 Population pressure on the coastal areas, particularly of the Western Bay of Plenty, is high and growth is predicted to continue. Therefore, these problems will be exacerbated unless remedial action is taken.

Para 3 The findings of the scientific survey show that septic tank soakage field systems are having adverse effects on the environment in some circumstances, usually where the system design does not match the site conditions. Although the study conclusively identifies septic tank soakage field systems as the source of the effects, it does not establish the reasons for their poor performance. Therefore, additional data was sought on the factors influencing the effectiveness of on-site effluent treatment. Analysis of the physical and operating environment of on-site effluent treatment systems is discussed in Chapter 3 of this plan.

Para 4 There is no doubt that formal management measures are needed to prevent further deterioration of the environment and to remedy those effects that have already occurred.

Para 5 Before this can be done successfully, a clearer idea of what factors are influencing the effectiveness of on-site effluent treatment systems is required. However, the results of the scientific study give clear justification for developing a plan to avoid, remedy or mitigate the effects of septic tank effluent.



Map 2 – Unsewered Communities in the Bay of Plenty

3 Suitability, Design and Maintenance of On-Site Effluent Treatment Systems

3.1 Introduction

Para 1 On-site treatment of effluent can be referred to as slow rate land treatment. This is the controlled application of wastewater onto or into topsoil such that treatment of the wastewater is achieved through the natural physical, chemical and biological processes occurring in the plant-soil-water matrix. The dispersal of the water fraction occurs by evapotranspiration and by percolation through soil to ultimately join natural groundwater.

Para 2 Slow Rate Land Treatment is generally regarded in New Zealand as a safe, environmentally friendly and culturally sensitive method of disposal of sewage wastewater. It uses the natural environment to serve a human purpose without significantly altering the natural processes of the land.

Para 3 While the use of an on-site effluent treatment system may be an effective method of treating domestic sewage in some situations, it can be unsuitable in others. There are a range of parameters that may affect the suitability and performance of on-site effluent treatment and these include physical site factors as well as the operating environment. Section 3.2 below outlines the factors that must be taken into consideration when designing an on-site effluent system and assessing its suitability to a given situation.

3.2 Influence of Physical Site Factors on the Effectiveness of On-Site Effluent Treatment

3.2.1 Soil Type

3.2.1(a) Introduction

Para 1 In general the soils of the Bay of Plenty have been identified as having physical properties that are suitable for on-site treatment of effluent. Table 1 classifies soils in the region with respect to their suitability for disposal of septic tank effluent. Soils that are unlikely to be suitable for traditional on-site effluent treatment systems will require a more advanced level of treatment technology.

Para 2 Where sewage effluent is applied to unsuitable soils, the on-site effluent treatment system may fail. Failure of the treatment system may result in effluent ponding on the land surface, odours and health risk associated with effluent ponding, pathogenic contamination of stormwater, nutrient and pathogenic contamination of surface and groundwater, subsidence and soil instability. All of these failures can be attributed to the application of sewage effluent at a rate greater than the assimilation capacity of the soils.

Para 3 There are three principal components of sewage effluent that commonly result in adverse environmental effects. These are nitrogen, phosphorus and pathogens (bacteria, protozoa, viruses and cysts).

Table 1 Soils Classified with Respect to Suitability for Disposal of Septic Tank Effluent

Location	Suitable	Some limitations - May require special Aerated wastewater treatment systems	Severe limitations - Will require special aerated wastewater treatment systems
Tauranga/ Te Puke	Katikati series (Ka, Kar, KaH, OtS) Ohope series (Oh) Papamoa series (P) Kairua series (K) Te Puke series (Tk, TkH)	Te Puna series (Tp)	Pahoia series (Pa) Muriwai series (Mu) Wharere series (W, Wh) Raparapahoe series (Rap) Parton series (Ptz) Omarumutu series (Om) Manoeka series (M) Te Matai series (Tm)
Rotorua Lakes		Oturoa series (Ot, OtH) Rotoiti/Oropi series (Rt, RtH, Or, OrH) Waiowhero/Utuhina series (Wa, U) Rotomahana series (R,RH)	
Whakatane/ Opotiki/ Te Kaha	Ohope series (Oh) Te Teko series (Tks) Rangitaiki series (Ran) Te Kaha series	Opouriao series (Ou) Kopeopeo series (Koe) Opotiki series (Op)	

Soil Descriptions for Soils with Limitations (some limitations or severe limitations)

Te Puna series (Tp)	Fans of eroded volcanic ash soils - imperfectly drained.
Pahoia series (Pa)	Soils of the coastal flats adjacent to Tauranga Harbour - poorly drained.
Muriwai series (Mu)	Adjacent to Tauranga Harbour, younger than Pahoia series - gley soils with high groundwater tables. Poorly drained soils of the valleys south of Tauranga.
Raparapahoe series (Rap)	Valley floor soils inland from Tauranga - subsoil peat not sand as in the Wharere series.
Parton series (Ptz)	Interdune and inland from the dune-country - poorly drained organic soils.
Omarumutu series (Om)	Sandy soils within depressions within the dune landscape - rising groundwater table in wet seasons.
Manoeka series (M)	Well drained alluvial soils close to the river.
Te Matai series (Tm)	Alluvium with clay subsoil - high groundwater table in wet seasons.
Oturoa series (Ot,OtH)	May be limitations caused by excessive drainage.
Rotoiti/Oropi series (Rt,RtH,Or,OrH)	May be limitations caused by excessive drainage.
Waiowhero/Utuhina series (Wa,U)	Margins of Lakes Rotorua and Okareka and the Ohau Channel area - fluctuating groundwater table in some locations.
Rotomahana series (R,RH)	Caution required where coarse layers overlie finer textured soils.

Opouriao series (Ou)	Near Matata seepage from nearby hills can cause groundwater levels to rise within 1 m of surface.
Kopeopeo series (Koe)	Iron pan that needs to be broken for good drainage.
Opotiki series (Op)	Poorly drained soils in the valley floors.

Para 4 Nitrogen is typically present in sewage effluent at a concentration of 40 g per cubic metre per day. Any nitrogen discharged into the soil will enter into the nitrogen cycle, with some released into the atmosphere from volatilization and denitrification, some taken up by vegetation, some bound to soil organic matter and some leached through into water bodies. Where nitrogen leaches through into the groundwater, contamination of drinking water bores and surface water bodies may occur.

Para 5 The amount of phosphorus retained by the soil depends on its phosphorus absorption characteristics. Phosphorus absorption is associated with certain aspects of the soils chemistry, such as the presence of calcium, iron, manganese and aluminium oxides, all of which bind the phosphorus within the soil. Hoare (1984) estimated that Rotorua soils were capable of removing 98 percent of phosphorus and 35 percent of nitrogen from septic tank effluent. Eventually soil phosphorus absorption capacity will be reached and phosphorus will no longer be removed. No studies have been done to indicate the loading level or rate for septic tanks that would result in this occurring for the soils of the Bay of Plenty.

Para 6 Faecal micro-organisms within sewage effluent typically comprise bacteria (faecal coliforms, E Coli. Enterococci, Salmonella etc), protozoa (Giardia, Cryptosporidium), viruses (Polio, Hepatitis etc). Of these, faecal coliforms, most E Coli and enterococci are non-pathogenic, and are used as indicator organisms to trace the presence of human waste matter in an effluent or in the environment. The other organisms above are known as pathogens (that is disease causing). The movement of micro-organisms through the soil is controlled by the moisture content of the soil, soil temperature, soil pH and the presence of soil microbes. The top 5 to 10 cm of the soil is the most active zone in which both indicator organisms and pathogens are removed from sewage effluent. For bacterial and viral removal from septic tank effluent as it percolates through the soil, sufficient depth of unsaturated soil is required between the point of effluent input and the water table. If the groundwater table is high, faecal micro-organisms may migrate from the effluent into surface drainage systems.

3.2.1(b) Soil Properties

Para 1 Wells (1973) identified a number of soil properties that influence the suitability of a particular soil when used for sewage effluent disposal. These properties include soil structure, soil permeability, soil texture, porosity, the presence of restrictive layers, gleying and soil organic matter.

Para 2 Soils comprise of a range of particles from clay through to gravel. Soil structure is defined as the manner in which soil particles are assembled in aggregate form. Aggregation within soils is dependent upon the cohesive nature of the fine particles, typically clay, organic acids and secondary minerals. Wells (1973) has suggested that soils with fine soil structure are generally considered to be more suitable for effluent disposal.

Para 3 Soil permeability refers to the ability of water, including renovated wastewater, to be conducted away through the soils. Permeability is important for drainage and also helps the infiltration of effluent into soil so that optimal exposure of the effluent to the soil matrix can occur.

Para 4 The long term acceptance rate (LTAR) is the rate at which the infiltrative surface can be loaded long term and continue to absorb and treat the applied effluent through the clogging mat that develops at the soil/liquid interface, and within the natural soil just beyond the infiltrative surface. The LTAR due to the clogging mat is considerably lower

than the natural clean water permeability of the soil. Extensive research has shown that it could be as low as 10% (USEPA, 1981).

Para 5 The test required by Bay of Plenty Regional Council to assess soil permeability is the constant head permeability test described in NZS 1547:2012.

Para 6 Soil texture is the particle size distribution of the solid, inorganic constituents of the soil. Within soil science this is limited to those particle sizes less than 2mm, with the soil texture being a measure of the proportion of sand, silt and clay within the soil. According to Wells (1973) soils with textural classes of sandy loam through to loam are considered to be more suitable for effluent disposal. Refer to NZS 1547:2012 Appendix G.

Para 7 Soil porosity is dependent upon the shape, size and abundances of crevices, passages, and other soil cavities. The soil porosity in addition with soil structure and texture contributes towards the ability of a soil to conduct water. Wells (1973) identified soils with many abundant pores as being the moist suitable for effluent disposal.

Para 8 Restrictive layers within the soil may impede the flow of sewage effluent. Restrictive layers may include clay, iron or silica pans, peat layers or a low permeability ash. A number of soils within the Bay of Plenty contain restrictive layers, the Katikati series soils in Omokoroa with Hamilton Ash, the Parton series soil in Papamoa with peat deposits, and the Paretotara series with Rotomahana Mud. Where restrictive layers exist, subsurface trench disposal of effluent is unsuitable and subsurface (in-soil) drippers may be more appropriate.

Para 9 Gleying is the process whereby soils are subjected to extensive periods of saturation, resulting in anaerobic conditions. Gleyed soils are characterised by a grey to pale brown colour, and may contain iron staining. Because of the saturated nature of these soils, the soils will not have the capacity to assimilate the constituents from the sewage effluent prior to entering the groundwater. Gleyed soils within the Bay of Plenty Region are commonly associated with low-lying land adjacent wetlands, river and lake margins. An example of gleyed soils are the Apanui series and Muriwai series in Opotiki, the Te Puna and Wharere series in Western Bay, and Omeheu and Matuku soils in the Whakatane area.

Para 10 Soil organic matter is commonly found in the upper 10 to 20cm of the soil and is derived from the breakdown of plant material within the soil. There is a fine line between having to little organic carbon and having too much. The organic carbon within the soil helps retain nitrogen within the soil as well as providing a medium for soil microbes to remove pathogens. If too much organic matter exists within the soil, it tends to indicate a high rate of rainfall, resulting in the development of peat. Soils with contain too much organic carbon are the Pongakawa series in Western Bay and the Matao series in Opotiki.

Para 11 Further information on the various properties of soils is available from any recognised soil science text. Bay of Plenty Regional Council or the relevant city/district council may also be able help with queries relating to particular soil types.

3.2.2 Topography

Para 1 Slopes of no more than 10 percent can be considered for soakage beds, slopes of no more than 15 percent can be considered for trenches. For slopes greater than 15 percent, secondary treatment and disposal by drippers can be considered for on-site land application systems. However, slopes greater than 20 percent (11^{o} or a slope of 1 in 5) should be treated with care. For particular sites an informed assessment of the type of on-site disposal is required. NZS 1547:2012 Appendix K provides guidance on factors to be considered in selecting the correct land application system.

Para 2 Where there is a shallow depth of permeable soil over a layer of limited permeability such as clay or bedrock, flatter grades present severe constraints for effluent drainage; steeper grades (ideally 10 percent (6° or a slope of 1 in 10) present a better opportunity for lateral percolation through the permeable soil for treatment and drainage. Disposal fields must be installed across the slope and parallel to the land contour otherwise constructed soakage channels can become drainage routes for stormwater down slope and blowouts can occur. Figure 1 illustrates this concept. Slippage can also result from the lubrication of the shear plane (see Figure 1).

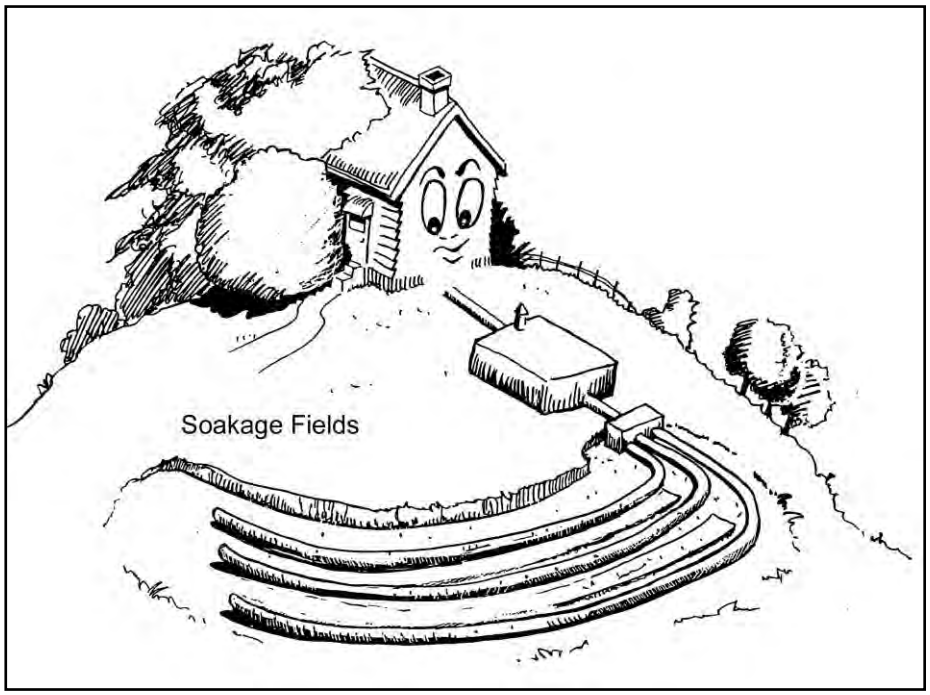


Figure 1 Soakage Fields Parallel with the Contour

3.2.3 Spring Recharge Zones

Para 1 In the Rotorua district particularly, there are some areas where highly permeable pumice soils overlay major spring recharge zones. Unless special efforts are made to ensure that effluent is treated on-site, rapid infiltration of untreated effluent will cause contamination of these important sources of potable water. Special consideration needs to be applied to ensure that there is sufficient soil depth between the discharge zone and the underlying rock and that there are no local tomos or fissures through which rapid infiltration may occur.

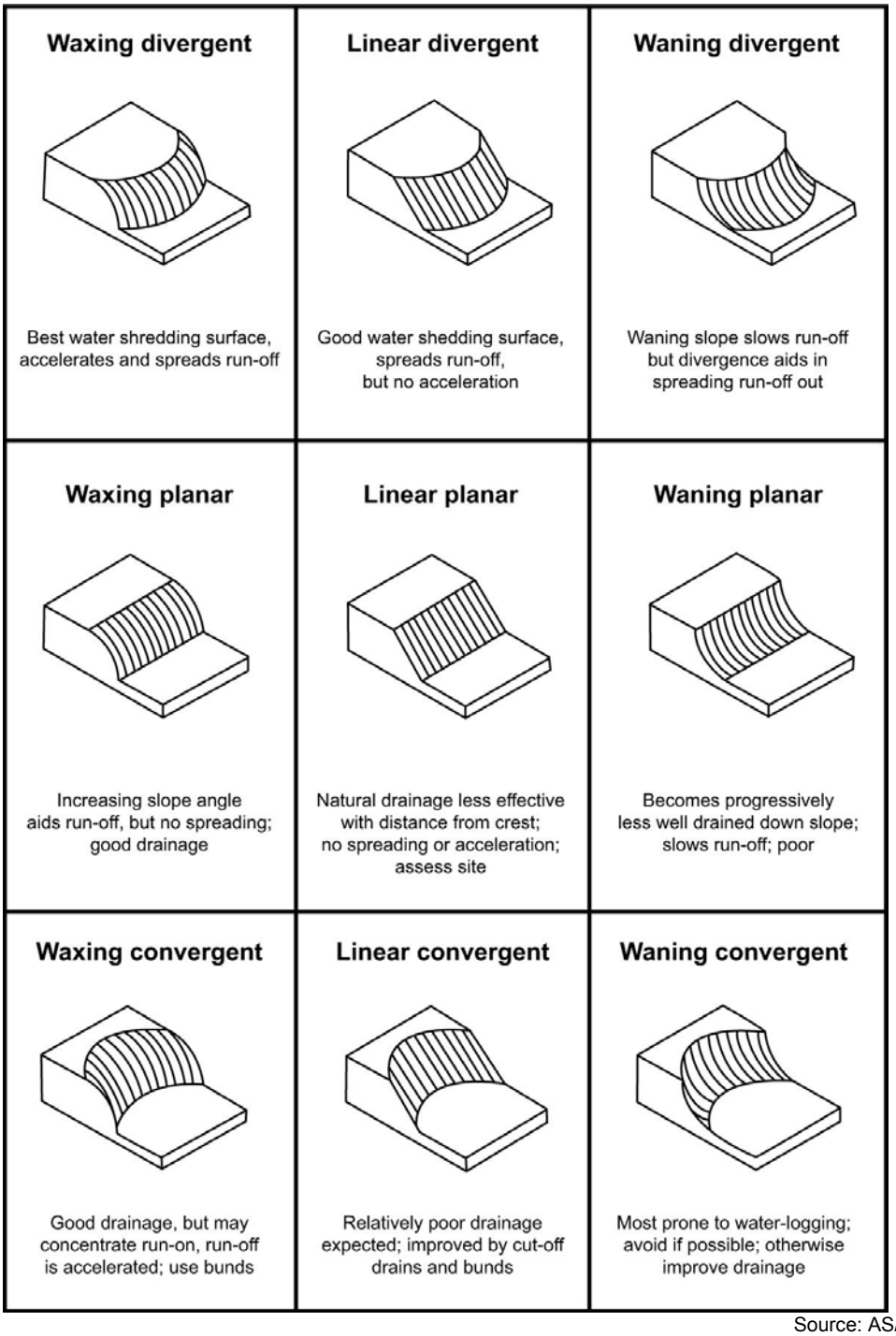
3.2.4 Water Table

Para 1 Depth to the water table is of critical importance in assessing the suitability of an on-site sewage system, and in determining suitable systems for the different water table depths, as systems which can deal with high water tables are available. Soil profile analysis can be used to verify water table depth.

Para 2 To allow for soil treatment of the effluent plume, there should be a minimum of 600 millimetres between the bottom of the soakage field and the water table. For aerated wastewater treatment systems, the minimum depth to the groundwater table from the land treatment area is 300 millimetres (Schedules 1 and 2 set out these specific requirements).

Para 3 Where soil drainage is poor, there is usually seasonal elevation of water tables during winter. If site evaluations are done in summer, reliable estimates on the seasonal variation of the water table will be required. Temporary elevation (a few days) to within about 100 millimetres of the base of the disposal system will not cause operational failure of a trench during that time but it will mean that little treatment will occur.

Para 4 On sloping sites, surface and subsoil water should be directed away from the disposal area on sites where the soil is likely to become saturated. This should be done by using an up-slope cut-off drain to divert near-surface and surface seepage water coming from up-slope of the treatment field. Sloping sites with a limiting subsoil horizon and soil permeability are both factors that affect soil saturation. Treatment fields can be designed for hillsides provided there is excess drainage capacity so that the topsoil down slope does not normally become saturated to ground level. Figure 2 illustrates the effects that different slope profiles have on drainage.



Source: AS/NZS 1547:2000.

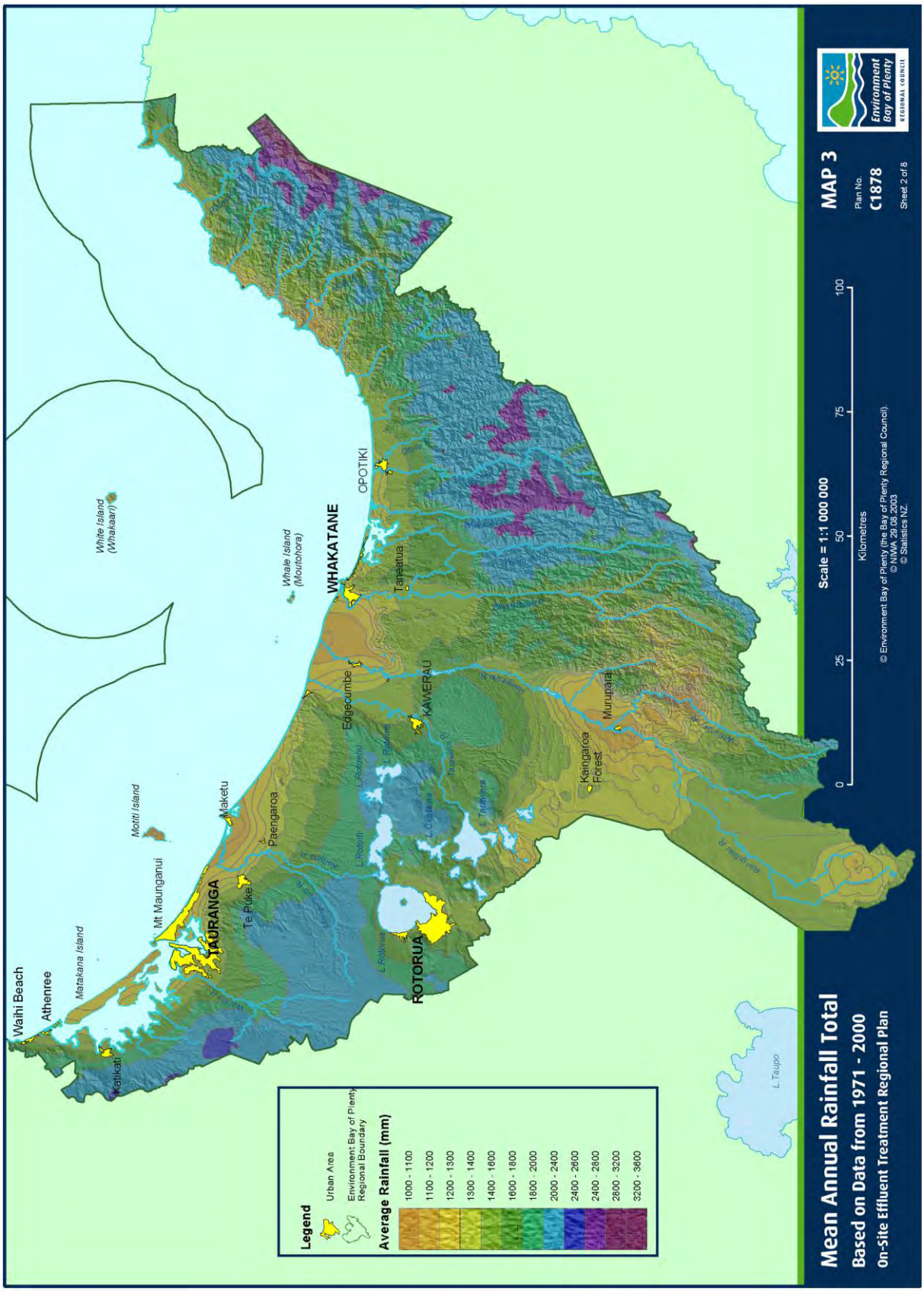
Figure 2 Soil Configuration in Relation to Surface Drainage

3.2.5 Rainfall and Evapotranspiration

Para 1 Rainfall plays an important role in determining the effectiveness of in-ground treatment of septic tank effluent. Total rainfall and rainfall distribution throughout the year influence the effectiveness of on-site systems. Map 3 shows the mean annual rainfall in the Bay of Plenty Region.

Para 2 In the Bay of Plenty the highest rainfalls occur in the months May to August. This is also the time that potential evapotranspiration is lowest and soil is saturated. Therefore, it is the time of year where the maximum impact of on-site treatment of effluent on groundwater is likely to occur. The months where rainfall exceeds evapotranspiration for sites in the Bay of Plenty region are shown in Table 2 (Quayle 1984).

Para 3 Table 2 also shows that uncovered total evapotranspiration effluent treatment systems are not going to work in the Bay of Plenty because rainfall always exceeds evapotranspiration. From Table 2 it can also be seen that on-site sewage disposal systems should be designed to cope over the May to August months, as they are the months when the soil is most saturated and systems are most likely to be stressed; it is also when water tables are at their highest.



Map 3 – Mean Annual Rainfall

Table 2 Rainfall and Evapotranspiration at Selected Sites in the Bay of Plenty Region

	J	F	M	A	M	J	J	A	S	O	N	D
TAURANGA												
Potential evapotranspiration	148	116	95	57	31	21	24	38	62	93	123	141
Rainfall	85	94	116	123	129	140	132	129	108	117	89	101
Runoff	8	20	32	48	82	116	108	93	54	44	11	17
Days with runoff	0	1	2	2	6	10	10	9	5	3	1	1
EDGECUMBE												
Potential evapotranspiration	149	121	96	57	32	20	26	39	58	93	120	138
Rainfall	101	93	141	114	131	138	89	182	164	115	77	102
Runoff	18	9	61	37	80	112	65	141	115	46	12	10
Days with runoff	1	1	2	3	4	8	6	11	7	3	1	1
WHAKATANE												
Potential evapotranspiration	151	120	99	58	31	22	26	40	65	97	124	144
Rainfall	83	104	122	105	135	129	132	127	100	105	88	105
Runoff	4	19	41	33	80	106	108	88	46	31	12	16
Days with runoff	0	1	2	2	6	8	9	7	4	2	1	1
KAWERAU												
Potential evapotranspiration	107	91	79	54	37	24	24	29	41	60	76	94
Rainfall	115	148	169	129	183	160	171	180	154	136	99	157
Runoff	45	63	90	67	131	133	146	152	116	88	37	66
Days with runoff	2	2	3	4	6	8	9	10	7	6	2	4
WHAKAREWAREWA												
Potential evapotranspiration	125	95	78	47	25	15	118	31	52	77	105	121
Rainfall	107	10	108	120	138	137	129	131	118	127	104	116
Runoff	22	26	36	53	101	120	111	101	72	59	25	23
Days with runoff	1	1	2	3	8	11	11	9	7	5	2	1

3.2.6 Population

Para 1 The population of the Bay of Plenty is projected to increase overall by approximately 30% over the next 22 years. This population increase is not spread evenly over the region. The western Bay of Plenty and Tauranga areas will have substantially greater growth rates than the eastern or southern areas of the region. Table 3 shows the projected population growth.

Para 2 Population change in any location can be seasonal because a number of the properties which rely on on-site effluent treatment are holiday houses. These receive "shock loading" when they are occupied and it can take up to a month for the bacteria in the tank to adapt to the different loading and flow conditions. In this time the quality of the effluent leaving the tank (whether it is a septic tank or an aerated wastewater treatment system) can be much lower than a continuously loaded tank.

Table 3 Projected[1] Resident Population of City/District populations in the Bay of Plenty Region 2011 – 2026 as at 30 June 2011 (based on the 2006 census)

	2011	2016	2021	2026	Difference (between 2011-2026)	% change from 2011-2026
District or City						
Taupō District (only includes the area unit within BOP region)	170	170	180	170	0	0%
Western Bay of Plenty District	46,100	48,900	51,500	53,900	7,800	17%
Tauranga City	117,100	126,900	136,500	146,000	28,900	25%
Rotorua District (excluding area units outside the BOP region)	65,380	65,970	66,100	66,050	670	1%
Whakatāne District	34,700	34,600	34,300	33,800	-900	-3%
Kawerau District	6,900	6,600	6,300	5,800	-1100	-16%
Ōpōtiki District	9,100	8,900	8,700	8,400	-700	-8%
Region						
Bay of Plenty	279,600	292,100	303,600	314,100	34,500	12%

Stats NZ Population Projections of Territorial Authority Areas 2006-31 (2006-base) update - medium series

3.2.7 Available Space

Para 1 The actual land area occupied by an effluent treatment land application system for a single family domestic household varies depending on soil category, dwelling size and flow rate. A minimum lot size of 1000 square metres becomes quite limiting for the use of septic tank effluent treatment systems.

Para 2 For all systems, it is essential to set aside a reserve area to provide for unanticipated operational problems and/or system failure The area set aside must be consistent with the requirements of NZS 1547:2012 and will be determined by a risk assessment.

Para 3 District/city councils can assist by promoting within their Project Information Memoranda (PIM) that a reserve area is set aside and kept free of development. The reserve area must be shown on the approved plans for a dwelling and cannot be used for permanent structures, including buildings and impervious surfaces.

[1] Stats NZ Population Projections of Territorial Authority Areas 2006-31 (2006-base) update – medium series.

3.3 Selection and Design of On-Site Effluent Treatment Systems

Para 1 A site evaluation will indicate the constraints and opportunities for various on-site effluent treatment/disposal options. Constraints may impose limits on the amount of wastewater that can be disposed of on-site or may preclude the use of some types of systems.

Para 2 The decision making process in selecting a system is complex. This is because of the number of parameters which need to be considered (as identified in Section 3.2). The following sections outline the options available for on-site effluent treatment systems.

3.3.1 The Septic Tank and Soakage Field (Septic Tank Effluent Treatment System)

3.3.1(a) Introduction

Para 1 The term "septic tank" is a misused term in that it is often used to denote "septic tank - soil absorption systems". The soil absorption system, or soakage field, is the most important part of the system, as it provides the "disposal" and usually most of the treatment function of the system. Most septic tank effluent treatment systems use a septic tank as a pre-treatment step. The septic tank simply acts as a solids and scum storage unit, where heavier waste matter settles out and undergoes slow decomposition and a scum layer floats on top of the liquid which helps prevent odours escaping. The settled outflow is then distributed to a soil treatment system (i.e. soakage trenches).

Para 2 Septic tank effluent treatment systems, shown in Figures 3 and 4, consist of two main parts: the septic tank, in which the larger particles settle to the bottom and some decomposition takes place, and; the soakage field in which the effluent soaks into the ground through perforated pipes. Wastes flow by gravity down the house drain to the tank. The partially treated effluent flows out of the tank into the soakage field, where the natural processes in the soil absorb and purify the effluent.

3.3.1(b) Single Stage Tank

Para 1 Figure 4 shows a cross section of a conventional single stage septic tank. For the smaller tanks commonly used through the 1970s and 1980s, effluent quality was unreliable, as modern water using fixtures became available. In addition, with overloaded or poorly maintained tanks, solids from inadequate settling or full tank conditions would discharge with the effluent, clogging up the soil treatment system (soakage field).

Para 2 Modern single chamber septic tanks are of a larger size (NZS 1547:2012), and are normally provided with an effluent outlet filter which entraps suspended solid matter and prevents this material exiting in the effluent, and contributing to clogging of soakage area infiltrative surfaces or accumulating in distribution lines. Effluent outlet filters are required to be installed on all new septic tank treatment effluent systems

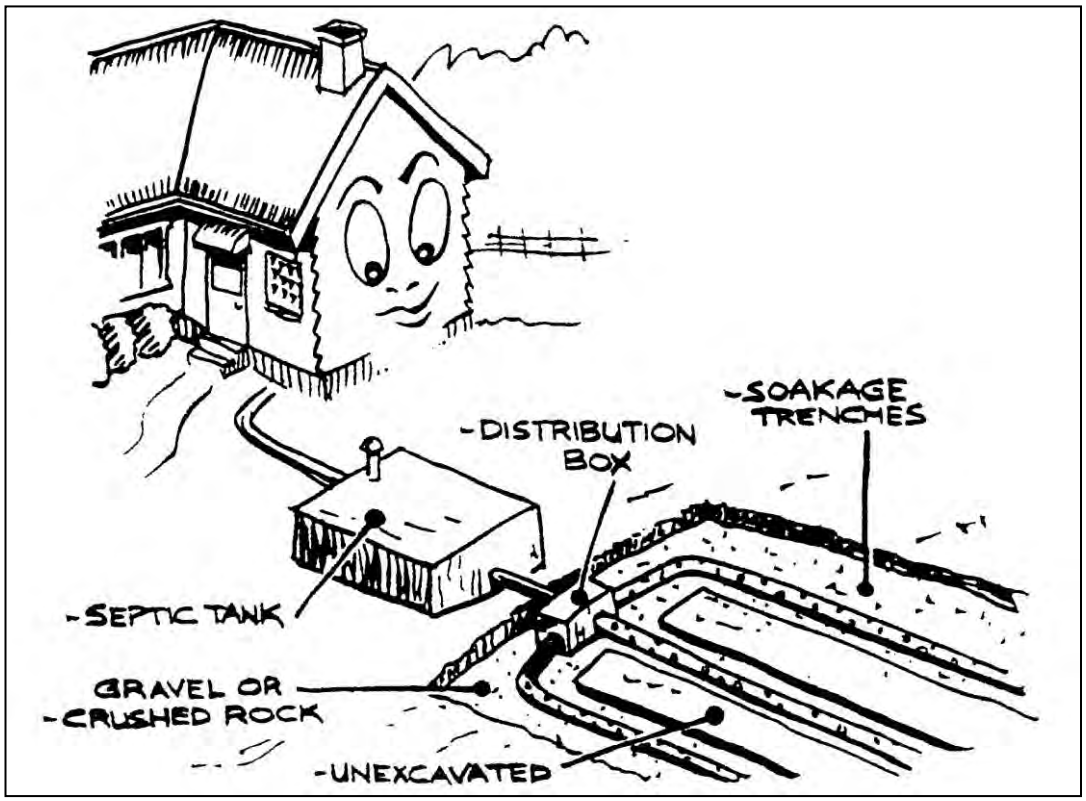


Figure 3 A Septic Tank Effluent Treatment System (Septic Tank and Soakage Field System) (as in AS/NZS 1547:2000)

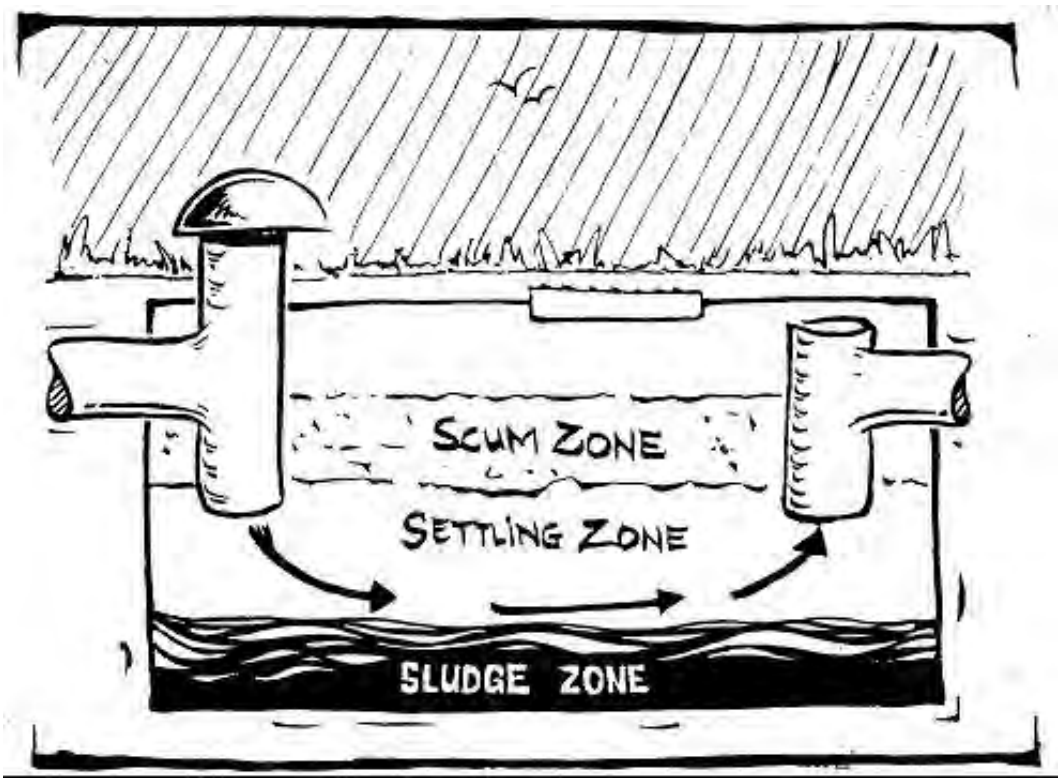


Figure 4 Cross Section through a Single Stage Septic Tank

3.3.1(c) Two Stage Tank

Para 1 In the past two stage tanks have been used to provide additional settling capacity and flow buffering in supporting better solids removal performance. Such tanks have often been provided with gas deflection baffles and/or effluent outlet filters, the objective being to minimise potential solids overflow and prolong the life of the land treatment area (soakage field). The first stage would be full size as would be selected for a single stage tank (refer Schedule 1). The second stage would be 2/3 the size of the first. However, in most situations, the larger single stage tank of current practice fitted with effluent outlet filter should perform entirely satisfactorily if maintained in accordance with local operation and management requirements.

3.3.1(d) Land Application System

Para 1 The soakage fields of septic tank effluent treatment systems rely on feeding effluent to soil that can absorb water at a moderate rate to get a gentle, even flow of effluent through the soil, so that the soil has time to treat the effluent before it reaches groundwater. Impermeable or "tight" soils and soils that allow very rapid drainage will both cause problems. Tight clay soils impede the flow of effluent away from the soakage area, so increased system size and installation modifications are required to compensate. Rapid soil drainage means that the contact time of the effluent with the soil can be too short for effective treatment and effluent could leave the soakage field through a localised section of the distribution pipe as a concentrated plume.

Para 2 It is desirable to distribute septic tank effluent into the shallow upper soil layers where aerobic bacterial action can assist in the soil treatment process. A range of land application methods are used, including conventional trenches and beds, Low Pressure Effluent Distribution (LPED) trenches, evapo-transpiration trenches or beds, sand treatment mounds.

Para 3 Low Pressure Effluent Distribution (LPED) comprises a perforated dosing line nested within draincoil pipework. Pump or siphon pressure dosing feeds effluent along the full length of the distribution pipe, thus evenly loading the soil infiltrative surface. LPED is covered in the design criteria for conventional trenches in NZS 1547:2012.

Para 4 Septic tank effluent treatment trenches as they are described in NZS 1547:2012, *'On-Site Domestic Wastewater Management'*, are the most prevalent form of land application systems for on-site effluent treatment used in New Zealand. In favourable circumstances trench systems can achieve the objectives of "slow rate land treatment" (see Section 3.1 above). Infiltration and percolation processes accomplish soil treatment whereby much of the renovated effluent eventually reaches the groundwater. The shallower a system is, the greater opportunity is provided to take advantage of evapo-transpiration from plants adjacent to the trenches to transfer some of the effluent carriage water to atmosphere, and relieve the load on the soil soakage processes.

Para 5 Inadequate design sizing for the given soil conditions, system overload, together with maintenance neglect, have all contributed to poor performance and failure of trench systems throughout many localities in New Zealand.

3.3.1(e) Overall Performance of Septic Tank Effluent Treatment Systems

Para 1 Septic tank effluent treatment systems can be quite effective in treating effluent if they are installed, used and maintained correctly. Problems with septic tank effluent treatment systems are typically due to the installer or user not understanding what is needed to make them work. Evidence from septic tank cleaners strongly indicates that some septic tank soakage field systems are not suited to the conditions they are being expected to operate in, and that in some cases there are flaws in the initial design and installation of the system. Either of these concerns mean that the systems would be incapable of continuous effective on-site treatment under any circumstances. Examples of these problems are:

- use of totally inadequate systems (i.e. two 44 gallon drums and no soakage field); and
- incorrect system design for the circumstances (i.e. septic tank effluent treatment below ground soakage in high water table areas); and
- system not sized correctly to the household (i.e. extra bedrooms added to a dwelling).

Para 2 Older type septic tank effluent treatment systems are not fool-proof and they have no controls on the septic tank outlet pipe from the tank to prevent solids from travelling through and clogging the soakage field distribution pipe. It is vital that older septic tanks are cleaned before the solids level reaches the outlet pipe, otherwise the soakage field part of the system will clog and no longer work.

3.3.1(f) Outlet Filter

Para 1 Adding an outlet filter or a second stage to these older existing septic tanks will reduce the chances of solid overflow damaging the soakage field and improve the overall performance of a conventional system. The installation of an outlet solids filter prevents excessive solids carryover to the soakage field and acts as a valve, shutting off the field once they become clogged. In order for filters to function correctly, it is vital that they are regularly cleaned and maintained. This requires them to be installed with easy access at ground surface. The outlet filter must comply with the provisions of NZS 1546.1:2008 Appendix D.

3.3.2 Alternative Systems, including Advanced Aerated Wastewater Treatment Systems

Para 1 There are alternative systems to the conventional septic tank and soakage field systems which are commonly used for on-site effluent treatment. When well designed, installed and managed, these systems produce an effluent quality equal or superior to that of the more septic tank effluent treatment systems. Bay of Plenty Regional Council's requirement is that effective effluent treatment occurs on-site. The choice to use these systems rests with the individual. It has no bias or preference for any particular system, provided the system will operate to consistently produce high quality effluent. However, in some parts of the region an on-site effluent system with nutrient removal capabilities is preferred and in some cases required (See 3.3.2 (e)). A number of alternative technologies are available, some of which are listed below. The NZS 1547:2012 defines secondary treated effluent on the basis of quality of effluent rather than the methods used to treat the effluent.

Para 2 In this plan, Aerated Wastewater Treatment Systems (AWTS) are those which have been tested and have been shown to achieve an effluent quality of 30 grams per cubic metre BOD_5 and 45 grams per cubic metre of total suspended solids. For the Rotorua lake communities that require nutrient reduction OSET systems, a list of approved AWTS+NR systems can be found on the Bay of Plenty Regional Council website.

3.3.2(a) Composting/Dehydrating/Incinerating Toilets

Para 1 Toilet (water closet) flushing accounts for between 45 percent (older units with single flush large capacity cisterns) to 20 percent (modern low flush toilets) of water usage in a normal family home. Composting, dehydrating and incinerating toilets can reduce the wastewater flow from a house where it is desirable or essential to limit the amount of wastewater disposed of on-site. Composting toilets can be effective and safe (that is they do not create a nuisance or health hazard) but success requires interested and informed users who will diligently manage the compost process. Modern proprietary composting toilets are designed to make this easy. Incinerating toilets, dehydrating toilets and holding tanks (including chemical toilets) are other options. All of these systems require ongoing maintenance by the householder.

Para 2 NZS 1546.2:2008 sets out the design standards for waterless composting toilets. Compliance with this standard eliminates any discharge to the environment other than the management of compost. Provided that this is done in an appropriate manner that will prevent contaminants entering water, resource consent is not required from Bay of Plenty Regional Council. For the disposal of solid waste from composting toilets refer to Rule 25 of the Regional Water and Land Plan.

When considering installing and operating a composting toilet, the following factors need to be taken into account:

- Building consent requirements from the appropriate city/district council;
- Requirements of the Health Act 1956 for the use and/or disposal of compost; and
- Discharge requirements for greywater. Greywater cannot be dealt with via a composting toilet alone and the greywater discharge will need to meet the same permitted activity conditions and requirements of any other on-site effluent treatment system. If these conditions cannot be met, a resource consent will need to be obtained from Bay of Plenty Regional Council.

3.3.2(b) Recycle of Greywater for Toilet Flushing

Para 1 In situations where reduction in total effluent flow being discharged to land treatment is essential, and owner preference is not for a dry vault toilet unit (as in 3.3.2(a)), then a greywater recycle system can be utilised. The system treats bath, shower and laundry wastewaters, with the deodorised and disinfected recycle flow pumped to the water closet cistern.

3.3.2(c) Aerated Wastewater Treatment Systems

Para 1 An aerated wastewater system is a system which uses processes of aeration followed by clarification to achieve biological treatment of wastewater (NZS 1547:2012). The primary function of an aerated system is to treat domestic wastewater by aeration, clarification, and where required, disinfection so as to produce effluent appropriate to the land treatment system.

Para 2 Aerated Wastewater Treatment Systems can be used where drainage is not a problem but there is a shortage of land available for the infiltration of effluent. Secondary treated effluent can be loaded onto an infiltration surface at a higher rate than septic tank effluent without clogging the surface, and therefore can enable a smaller disposal trench or disposal bed to be used.

Para 3 Treatment to secondary treatment standard may ease disposal problems by allowing disposal by rapid infiltration. It does not affect the potential of the effluent to contaminate groundwater. Rapid-infiltration disposal is not favoured by Bay of Plenty Regional Council. Aerated wastewater treatment systems do not significantly reduce nutrients such as nitrogen and phosphorus unless specifically designed for that purpose. Aeration plants remove only some of the nitrogen and phosphorus load of the effluent, and pathogen levels remain high.

Para 4 If the nutrient loading from aeration plant effluent to groundwater is acceptable but pathogen contamination is not, then disinfection of the effluent is feasible. Disinfection with chlorine gives chlorine residuals and produces chlorinated organic compounds that in some situations could be regarded as unacceptable contaminants of groundwater. Disinfection by ultraviolet radiation does not produce harmful residuals but may not be as effective when the effluent has a high solids fraction.

3.3.2(d) Aerobic Biological Filters

Para 1 Contained aerobic biological filters, such as intermittent sand filters or re-circulating sand filters, are another method of improving effluent quality to allow for a reduction of the infiltration area required. Effluent can be disinfected if required.

3.3.2(e) Nutrient Removal Systems

Para 1 Nutrient removal from household wastewater may be necessary in situations where natural surface water is susceptible to eutrophication. Such eutrophication is currently occurring in a number of the Rotorua Lakes Catchments and consequently Bay of Plenty Regional Council requires that on-site effluent treatment systems in these locations have the ability to minimise the input of nutrients into surface waters. In order to assess the different systems available with nutrient reducing capabilities, Bay of Plenty Regional Council records and maintains a list of suppliers that meet the specifications and requirements in order for their system to be considered an 'approved method' for nutrient reduction, as required by Rules specific to the Rotorua Lakes Catchments in Chapter 5 of this regional plan.

Para 2 Phosphorus in wastewater is not usually a problem when applied to soils, as the absorption capacity of phosphorus by most soils is sufficient to capture most of the phosphorus over a long soakage field life. An exception to this is sandy soils with a low phosphorus retention capacity. Sandy soils can be modified in the vicinity of a soakage field by addition of natural materials with a high phosphorus absorption capacity, for example volcanic clays. A trench lined with such material can be effective in achieving this.

Para 3 Nitrate leaching to groundwater and elevated groundwater nitrate concentration is a concern that is often raised. Recent studies indicate that a well designed soakage field is capable of 15 percent total nitrogen (TN) removal in course grained soils, and 25 percent removal in fine grained soils (Gunn, 2003).

Para 4 Reduction of the on-site nutrient load in wastewater may be accomplished by:

(a) Separate collection and disposal of human wastes off-site. Most of the nitrogen and about half of the phosphorus in domestic waste is contained in the human waste.

(b) A standard re-circulating sand filter unit may only achieve up to 45 percent removal of soluble nitrogen from domestic wastewater. However a modified re-circulating sand filter unit incorporating an anoxic zone can achieve up to 85 percent nitrogen removal.

(c) Disposal of effluent to a large enough area of vegetation to take up most of the nitrogen by plant growth. At a nitrogen loading rate in the order of 150 kilogram of nitrogen per hectare per year, an area of 350 to 500m2 square metres of vegetated land (for example, grass or woodlot) would be needed to treat septic tank effluent from a family home. To achieve effective nitrogen removal, septic tank effluent would need to be applied sub-surface by an extensive, shallow Low Pressure Effluent Distribution low pressure pipe (LPED) system involving in the order of 300 metres of LPED trench. A system of this size requires careful hydraulic design to ensure efficient flow rates. Sand filter effluent can be applied by a subsurface irrigation system using emitters (no trench needed), or can be disinfected and applied by surface irrigation (sprinklers). Effluent that is treated to reduce its nitrogen content, for example by a recirculating sand filter, could be irrigated over a much smaller area bringing the size of a LPED trench system down to what would be required for standard septic tank effluent treatment in a situation not requiring nitrogen control.

Para 5 Where the discharge of effluent is from a septic tank on-site effluent treatment system from a dwelling on a property over 2 hectare (ha) that has been benchmarked for nutrient management under the requirements of the Bay of Plenty Regional Water and Land Plan (RWLP), and the nitrogen component in the on-site effluent discharge for the dwelling is shown to be factored into that benchmark, then the nitrogen component in the discharge will be managed under the RWLP. This is to acknowledge the whole of property approach

to the management of nutrients under the RWLP and to avoid a potential double-up of nutrient management between the RWLP and this regional plan. All other requirements relating to septic tank on-site effluent treatment systems, including the design and installation standards and other effects of the on-site effluent discharge will be managed under this regional plan. Where a resource consent is required in a Rotorua lake catchment, then the consent is to be assessed under both Rule 11 of the RWLP and the requirements of this regional plan.

Para 6 To acknowledge that property size and associated building density will influence whether on-site effluent derived nutrients can be contained and utilised within a property boundary, the plan rules requiring management of nutrients from on-site effluent treatment systems from dwellings is limited to properties titles of 2 hectare (ha) or less within the catchments of the Rotorua Lakes. Nitrogen discharges can be managed for these dwellings by the use of specialised aerated wastewater treatment systems that have been designed and certified to reduce nitrogen. Under a resource consent, other alternatives specific to the property and location can be considered, such as making financial contributions towards the offset of nutrient effects in the lakes. The 2ha property area identifies that property size will limit which other alternatives will be effective, and this should be assessed in a consent application process. On-site effluent derived nutrient discharges from properties over the 2ha limit are to be managed under the requirements of the Bay of Plenty Regional Water and Land Plan, with other on-site effluent treatment design and installation standards managed under this regional plan.

3.3.2(f) Buried Sand Filters and Mound Systems

Para 1 These systems use placed material, usually sand, to provide a percolation medium for effluent treatment prior to dispersal by subsurface drainage or, in the case of mounds, dispersal by evapotranspiration in summer and subsurface (or sometimes surface) drainage in winter. These systems can be used where there is limited area available on a property, or for a narrow soakage field.

Para 2 The infiltrative surface of non-linear mound systems is usually loaded by a LPED network in a gravel effluent distribution bed greater than 700 millimetres wide. The loading rates for these systems are different from narrow systems. Although in the past, effluent distribution to buried sand filters commonly has been by non-pressurised distribution pipes, the uniform loading that is necessary for the effective functioning of buried sand filters is more reliably achieved by an LPED system.

Para 3 Sphagnum peat as a filter medium for buried filters and filter mounds has advantages over sand in terms of effectiveness of pathogen reduction and phosphorus removal.

Para 4 Design of buried sand filters and mound systems should be made with reference to recent technical literature in on-site effluent treatment engineering.

3.3.2(g) Wetlands

Para 1 Home scale wetlands are also an advanced treatment option. Information on designing and installing home wetlands is available from Bay of Plenty Regional Council.

3.3.2(h) Water Saving Devices

Para 1 Water saving devices can significantly reduce the quantity of wastewater generated each day. NZS 1547:2012 provides for a range of water saving measures. Savings of 30% of normal water use are possible. Where water reduction fixtures are used the land application area can be reduced. Careful water use will also result in financial savings.

3.3.3 Secondary Effluent Distribution

Para 1 There are several options for distributing secondary treated effluent. Details of these are in the NZS 1547:2012 standard. Options in this standard include soakage trenches, surface spray, subsurface drip or trickle irrigation.

3.3.4 Decentralised Wastewater Systems

Para 1 There will be areas where a reticulated sewerage scheme is simply not possible. The situations in which on-site effluent treatment is not viable include where section size is too small to allow for on-site treatment and where site conditions (i.e. topography, soil type, depth to water table, available space) are not suitable.

Para 2 In these situations the use of off-site methods, such as Decentralised Wastewater systems, may be a more economical solution to treating waste than using a full sewerage system.

3.4 Maintenance Requirements for Septic Tank Desludging

3.4.1 Management Approaches

Para 1 The cost and administration requirements of septic tank desludging (septage pumping) are often not considered for individual on-site disposal or septic tank effluent sewerage schemes (EDS). To reduce the cost of cleaning, the siting of the tank needs to be carefully considered at the time the tank is initially installed, so that easy access to and into the tank is possible by cleaning tanker vehicles.

Para 2 Septic tanks need to be cleaned when the accumulated sludge reaches unacceptable levels. If this cleaning is neglected, overflow of solids into the soakage field occurs and the soakage field rapidly gets clogged. This may result in the owner needing to replace the entire soakage field at considerable cost.

3.4.1(a) Conclusion

Para 1 Bay of Plenty Regional Council favours some form of managed tank cleaning to reduce environmental effects. Costs for a managed cleaning programme could be negotiated and possibly be less than the cost of the standard clean out charge. The cost of reinstating a soakage field damaged by solids contamination can run into thousands of dollars.

3.4.2 Sludge and Scum Accumulation Rates

Para 1 Theoretical information on the rates of sludge build up was presented in the original On-Site Effluent Treatment Regional Plan and this showed a three year cleaning frequency to be appropriate for a household of five with a 2700 litre tank (standard tank capacity requirement for a dwelling of up to 3 bedrooms). For the second round of inspections of the maintenance programme, Bay of Plenty Regional Council has kept a record of how full a number of septic tanks were that had been cleaned three years earlier. This information was recorded to assess whether the three yearly cleaning frequency is reasonable. If the three yearly cleaning frequency is reasonable it would be expected that some 2700 litre tanks would be recorded as full after three years.

Para 2 A review of this information has shown that some 2700 litre septic tanks were full after three years. This confirms that the current three yearly cleaning frequency is reasonable for dwellings permanently occupied by a family. By installing an outlet solids filter, the soakage system will be protected against gross solids escape if sludge levels become high in the tank, and this will be signalled back to the homeowner when the filter clogs, and flow backs up in the house drains. That then becomes the indicator for initiating tank pump out.

Para 3 The installation of outlet solids filters is becoming increasingly popular in the Bay of Plenty region and particularly for systems that service a holiday home or low occupancy dwelling. Depending on accessibility and other specifics the cost of installing a filter should be a similar cost to having a system inspected.

3.4.3 Heavy Metal Content of Septic Tank Sludge

Para 1 Concerns have been raised about the heavy metal content of septic tank sludge. These concerns relate to its future use as a soil conditioner. Test results from sludge in the Bay of Plenty suggest that spreading sludge as a soil conditioner will not cause a heavy metal contamination problem.

3.5 Sludge Disposal Techniques

Para 1 Techniques used to dispose of sludge (also known as septage and biosolids) must consider the restrictions placed on disposal by both health and environmental authorities. The most recent publication relating to the disposal of sludge is Guidelines *for the Safe Application of Biosolids in New Zealand,* prepared jointly by the New Zealand Water & Wastes Association and Ministry for Environment 2003.

Para 2 Where treatment facilities do not exist, options available for sludge disposal include:

(a) specifically designed treatment system;

(b) composting with wood wastes and other organic wastes;

(c) pond/lagoon; and

(d) land application to reserve, farm or forest.

3.5.1 Septic Tank Sludge (Septage) Disposal from Collection Trucks

3.5.1(a) Septage Management

Para 1 Septage is a potent waste with considerable potential for pollution. There are generally insufficient facilities to handle septage in the Bay of Plenty region and this is a problem particularly for Opotiki and Western Bay of Plenty District Councils. Regular cleaning of tanks especially for compliance with the inspection and maintenance programme will result in more septage needing disposal.

Para 2 Where septage reception facilities (community treatment plants) are not available, operators are required to obtain a resource consent from Bay of Plenty Regional Council in order to discharge on-site effluent treatment septage to land. Only a limited number of authorised discharges are known to Bay of Plenty Regional Council and the exact location of where, and how this septage is being disposed of is an ongoing issue that local authorities need to address. An assessment of the quantities for disposal and the size and location of disposal sites is also needed to address the matters of transportation, environmental and health effects. The unauthorised discharge of septage into the environment is an offence under the Resource Management Act 1991.

3.6 Future Reticulation

Para 1 Territorial Local Authorities need to consider how they will enable communities to provide for their social, economic and cultural well-being and for their health and safety, without creating adverse environmental effects in approving subdivisional developments that have not given adequate thought or assessment to on-site effluent treatment requirements. In desirable locations, such as coastal and lake side settlements, there is pressure to increase development intensity. With greater density, on-site effluent treatment using the traditional septic tank and soakage field systems may become impractical and ineffective. To make the transition from on-site treatment to sewered or

modified sewered community treatment, it would be advantageous if developers were required to demonstrate in their land use consent applications how the transition from septic tanks to community schemes will be made, to ensure that future reticulation is feasible.

Para 2 Where it is intended that an unsewered development is to be connected to a reticulated sewage system at a later date then it is essential that subdivision design be made to ensure that connection can be made efficiently when required. Although septic tank and soakage field systems may be viewed as temporary in such situations, there should be no compromise in the design, installation and maintenance as intended reticulation may not eventuate.

Para 3 The intention of a city/district council to connect unsewered communities to a reticulated scheme should be clearly provided for in their Ten Year Plan (TYP).

Para 4 Currently there are options available for small sewage schemes to obtain funding at both a national and regional level. At the national level, the Minister of Health has established a Sanitary Works Subsidy Scheme (SWSS) to help medium sized communities to upgrade or build new sewerage systems or sewage treatment plants. At a regional level, Bay of Plenty Regional Council has policy and criteria in place for assessing regional financial assistance to community sewage schemes. For further information on the criteria used to assess regional financial assistance, contact Bay of Plenty Regional Council.

Para 5 Decommissioned septic tanks may pose environmental health and safety concerns due to residual effluent discharge via seepage if the septic tank is not watertight, or the collapse of the septic tank. For this reason it is recommended that decommissioned septic tanks are pumped out and backfilled with inert material (sand, soil, gravel). Ideally the septic tank should be removed.

4 Issues, Policies and Methods

Para 1 This chapter details the way this regional plan for on-site effluent treatment will be implemented. Chapter 5 of this regional plan details the *Regional Rules* relating to On-Site Effluent Treatment in the Bay of Plenty.

4.1 Issues

Issue 1 **Water quality in lakes, rivers, streams, estuaries, harbours and coastal margins in the Bay of Plenty can and is being adversely affected by the inadequate treatment and inappropriate disposal of discharges from on-site effluent treatment systems.**

Para 1 A number of unsewered communities still exist in the Bay of Plenty and these communities are predominately located on the coastal fringe, estuarine shorelines or lake edge. Problems arise where pathogens and nutrients are not successfully treated and retained on-site. These problems often occur at the shoreline, which is an area of significant value to the community and receives a high level of use.

Para 2 Degraded water quality can:

(a) Limit the options for use of the water downstream of the discharge, including: water takes for domestic supply, municipal supply, stock water, irrigation or industrial uses. The opportunity to use water in downstream areas is lost where the assimilative capacity of a waterbody is overloaded by contaminants in the water. This can adversely affect the ability of the community to gain access to potable water supply and pursue water recreation activities.

(b) Adversely affect aquatic ecosystems.

(c) Adversely affect natural character, landscape, cultural, and recreational values.

(d) Adversely affect the mauri of the waterbody.

(e) Adversely affect the water quality in estuarines, coastal margins and the open coast.

(f) Have potential adverse effects on human health (e.g. toxic algal blooms and bacterial diseases).

Para 3 There are two general situations in the Bay of Plenty where degraded water quality is of particular concern.

1 Firstly, there are the unsewered communities where monitoring has at times shown levels of bacteria or nutrients which have potential to compromise water body quality , or where a nutrient budget has shown that cumulative discharges from all the on-site effluent treatment systems in the community are contributing to the contamination of surface water and some groundwater: These communities include:

(a) Ongare Point

(b) Te Puna West

(c) Tanners Point

(d) Tarawera

(e) Gisborne Point

(f) Rotomā

(g) Hinehopu

(h) Rotoehu

(i) Matata

(j) Bryans Beach

(k) Mamaku township

2 Secondly, there are the Rotorua Lakes and their catchments where excessive nutrients from diffuse discharges for rural activities in lake catchments are contributing to the eutrophication of lakes and undesirable biological responses. These include: aquatic weed, algae proliferation and 'foams' during periods of warm weather. Algal blooms, water-weed and lake 'foams' can also restrict recreational use, lower aesthetic values and compromise the use of food from the lakes.

3 In addition to the communities identified in 1 above that have at times shown levels of bacteria or nutrients which have potential to compromise water body quality, there are also other expanding communities within the region that are unsewered and rely on on-site effluent treatment systems. The discharges from these on-site effluent treatment systems have the potential to contribute to water quality degradation of waterways, waterbodies and the marine environment. If contamination is believed to be occurring from a community, Bay of Plenty Regional Council will add the community to a 'Watch List' and then undertake a monitoring programme to assess whether contamination is an issue, and if so the extent of the contamination and the associated risks to the community and the environment (See Policy 1).

If the cumulative effect of discharges from on-site effluent treatment systems are known to be contributing to the degradation of waterways, waterbodies or the marine environment or causing a risk to public health, Bay of Plenty Regional Council will work with the affected community and their territorial local authority (city or district council) and the Medical Officer of Health to try to resolve the contamination issue. If sewerage reticulation is chosen by the community and their territorial local authority as the preferred option, the Bay of Plenty Regional Council will use policy options in this regional plan to support their initiative. The Bay of Plenty Regional Council may establish a Maintenance Zone for the affected community, with requirements on inspections and the standards of maintenance of all the on-site effluent treatment systems, to reduce the cumulative effect of discharges on the local environment.

Para 4 All of the communities identified in 1 above are included on the inspection and maintenance programme and all septic tank on-site effluent treatment systems within these communities are required to comply with the appropriate Rules of this Plan (Rules 1, 2, 3, or 4).

Objectives: *1, 2, 3, 4, 8, 9, 10*
Policies: *1, 2, 3, 4, 5, 6, 7, 8, 9, 15, 16, 17, 18, 19, 20, 22, 26, 27, 28, 29, 30, 31, 33*
Methods: *1, 1A, 2, 3, 3A, 4, 5, 6, 7, 8, 10A, 11, 19, 20, 21, 22, 27, 28, 29, 30, 31, 38, 39*

Issue 2 The selection, design and installation of on-site effluent treatment systems that are inappropriate to the specific characteristics of the site may cause adverse effects.

Para 1 Inappropriate selection and/or design of on-site effluent treatment systems often leads to inadequate treatment of effluent on-site and this results in increased bacteria and nutrient levels in waterways. This can reduce water quality, change aquatic ecosystems, decrease recreation and other public amenity values, and may lead to adverse effects on human health due to algal blooms. The use of substandard materials and poor workmanship during installation can also result in an on-site effluent treatment system failing to last well and achieve its purpose.

Objective: *3, 9, 10*
Policies: *1, 2, 3, 4, 7, 8, 9, 11A, 12, 14, 18, 19, 20, 21, 22, 23, 28, 29, 30, 32, 33, 34*
Methods: *5, 11, 12, 13, 14, 15, 16, 26, 28A, 28B, 29, 31, 32, 39*

Issue 3 **The characteristics of some sites necessitates a higher quality of effluent treatment and disposal (e.g. shallow groundwater, clay soils, proximity to waterways) than conventional onsite effluent treatment systems which may not adequately treat the effluent on these sites.**

Para 1 The most common systems in use in the Bay of Plenty region are the septic tank effluent treatment systems with effluent disposed to soakage fields. Although these systems are the most popular in the region, the performance of these systems can be compromised because of the physical limitations of the sites where they are being installed.

Para 2 With a number of aerated wastewater treatment systems now available, people have a range of options for installing an on-site effluent treatment system that can be better designed to site conditions. Specially designed aerated wastewater treatment systems are also able to produce a better quality of effluent and many of these systems are also capable of nutrient reduction.

Para 3 To operate effectively, aerated wastewater treatment systems need to be regularly maintained and serviced.

Objectives: *3, 8, 9, 10*
Policies: *1, 2, 3, 7, 8, 9, 11A, 17, 18, 19, 20, 22, 32, 33, 34*
Methods: *5, 8A, 11, 12, 28A, 28B, 29, 31, 32, 38*

Issue 4 **The discharge of greywater to land has the potential to cause adverse environmental effects.**

Para 1 Greywater from bathroom and laundry facilities (excluding commercial laundry facilities; refer to Definition of Terms) can be recycled a water conservation measure.

Para 2 The application of greywater directly onto land also has increased potential for adverse effects on public health. Such effects can be avoided by using covered surface trickle irrigation provided the irrigation rate is limited so as to avoid ponding on the surface or overland runoff.

Para 3 Ponding of greywater on the ground surface may cause objectionable odour and may create a nuisance and a potential health hazard. Any runoff to surface water could cause the formation of grease films or scums in receiving water. Conditions are necessary to ensure that smell does not become a nuisance and ensure this plan is not inconsistent with the Bay of Plenty Regional Air Plan.

Objective: *5*
Policies: *10, 19, 20, 22, 32*
Methods: *9, 11, 29, 31, 38*

Issue 5 **The discharge of human waste into land from pit latrines may cause adverse environmental effects.**

Para 1 Pit latrines (also known as long drops or privies) should only be used in remote locations where the level of usage is relatively low, and in remote locations where other on-site disposal systems are not possible, including but not limited to tramping, hiking huts and similar.

Para 2 In order for pit latrines to be an effective means of human waste management, they need to be a suitable distance above groundwater tables and from surface water bodies and/or water supply bores. Pit latrines should not be situated in very free draining soils such as coarse sands and gravels.

Objective: *6*
Policies: *1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18,19, 20, 21, 22, 23, 24, 25*
Methods: *10, 11, 31*

Issue 6 **Adverse environmental effects may be caused by on-site effluent treatment systems not being appropriately upgraded at the time of dwelling expansion/alteration.**

Para 1 Many dwellings at coastal or lake locations started their lives as simple baches but have subsequently been converted into substantial dwellings. These locations are the main areas where discharges from on-site effluent treatment systems have been identified as contaminating the environment. Although these primitive septic tank-soakage field systems could originally cope with the effluent load that they received as holiday baches, they are unable to treat the higher demands caused by higher resident numbers and the increase in the duration of occupation from holiday to permanent residences. A review of the on-site effluent treatment system should have occurred at the time the property use or dwelling size changed, but usually this is not the case.

Para 2 Under the provisions of the Building Act 2004 any changes to the physical dimensions of the building will be processed by city/district councils. At this time, the effluent treatment system should be assessed to see whether a system upgrade is required so that successful effluent treatment will occur.

Objective: *7*
Policies: *3, 4, 7, 8, 11, 11A, 13, 19, 20, 22, 32*
Methods: *11, 12, 24, 25, 29, 38, 39*

Issue 7 **Adverse environmental effects may occur as a result of on-site effluent treatment systems not being adequately maintained and serviced and therefore not being able to operate effectively.**

Para 1 Lack of maintenance and/or lack of knowledge on maintenance requirements is a major reason for system failure and water degradation. Many people do not know that their outlet solids filter and septic tank require regular cleaning and desludging, or that aerated wastewater treatment systems require regular servicing. Some forget, others don't want to pay the cost. It is a fact that a poorly maintained system will eventually fail causing its owner serious expense.

Objective: *4*
Policies: *1, 4, 5, 7, 20, 22, 26*
Methods: *11, 12, 15, 17, 18, 19, 23, 30A, 36*

4.2 Objectives

Objective 1 Environmental contamination, as a result of human effluent discharged from on-site effluent treatment systems into the margins of the lakes, rivers, streams, estuaries and shorelines of the region, is avoided, remedied or mitigated.

Objective 2 Limit and reduce nutrient discharges from on-site effluent treatment systems into lakes, rivers, streams, estuaries and shorelines of the region, including areas where degraded water quality has been identified as a particular concern.

Objective 3 Selection and/or design of on-site effluent treatment systems are appropriate to the environmental characteristics and limitations of the site, and installation materials and workmanship are of a high standard.

Objective 4 Regular cleaning and maintenance of on-site effluent treatment systems throughout the Bay of Plenty region.

Objective 5 Adverse environmental effects of discharging greywater to land are avoided, remedied or mitigated.

Objective 6 Effluent from pit latrines is disposed to land and only in remote locations where other methods of on-site effluent treatment are not possible.

Objective 7 Appropriate upgrading of on-site effluent systems at the time of dwelling expansion/alteration to avoid adverse environmental effects.

Objective 8 Aerated wastewater treatment systems are to be used in communities included on the inspection and maintenance programme, where site constraints are a problem and special treatment requirements are necessary, including nutrient removal.

Objective 9 Aerated wastewater treatment systems may also be used at the owners discretion in communities outside of the inspection and maintenance programme.

Objective 10 The ground and surface water resources of the region are protected from the cumulative effects of discharge from on-site effluent treatment systems.

4.3 Policies

Policy 1 To research and monitor the effects of on-site effluent discharge on surface and groundwater quality, and take appropriate action where such investigations indicate discharges are having significant adverse effects on water quality.

Policy 2 To promote lot (section) sizes that allow sufficient treatment area for sustainable on-site effluent treatment.

Policy 3 To phase out the use of soak holes as a form of disposal of primary treated effluent in those areas where such systems do not constitute the best practicable option.

Policy 4 To require the regular maintenance of both conventional and aerated wastewater treatment systems to minimise system failure and thereby avoid adverse environmental effects.

Policy 5 To promote the inspection of all on-site effluent treatment systems, at the owners expense, and require the upgrading of poorly performing systems so that poor and variable quality effluent and gross carry-over of solids does not occur.

Policy 6 To provide for the suspension or deferment of inspection and certification requirements in areas where it is known that a reticulation scheme is proceeding and expenditure has been confirmed in city/district council budgets.

Policy 7 To promote the installation of outlet solids filters on existing septic tank effluent treatment systems and to make them a mandatory requirement for all new conventional systems installed in the region.

Policy 8 To phase out the installation of septic tank effluent treatment systems within the Rotorua Lakes Catchments.

Policy 9 To require the use of appropriate on-site wastewater treatment technology throughout non-reticulated areas of the region.

(a) To require that wastewater treatment technology installed within the Rotorua Lakes Catchments have nutrient reducing capabilities that can achieve the permitted baseline limit for Total Nitrogen in the discharge.

Policy 10 To allow, as a water conservation measure, the discharge (recycle) of greywater in a manner which avoids adverse environmental effects.

Policy 11 To ensure that on-site effluent treatment systems are correctly sized to match any dwelling expansion or alteration that results in potential increase in discharge of domestic effluent.

Policy 12 To ensure that an appropriately sized reserve area is set aside to provide for unanticipated operational problems and/or system failure. The reserve area on a lot

must not be used for permanent structures, including buildings and impervious surfaces.

Policy 13 To enable the use of on-site primary treatment, and community schemes for secondary (and tertiary) treatment, in communities where full on-site treatment is not viable.

Policy 14 To ensure that developers detail in their land use consent applications, how the transition from on-site effluent treatment systems to community wastewater collection and treatment schemes will be made to ensure that future reticulation is feasible.

Policy 15 To apply a cost and benefit evaluation to any proposed wastewater servicing options prior to any medium or large scale subdivision, or high density development proceeding.

Policy 16 To encourage city and district councils to provide adequate facilities for the management and disposal of septage from on-site effluent treatment systems generated within their area.

Policy 17 To ensure that septage from on-site effluent treatment systems that can not be handled at an approved treatment facility (community treatment plant) is adequately treated for land disposal in order to avoid adverse environmental effects.

Policy 18 To require resource consent for any discharge from an on-site effluent treatment system, including an aerated wastewater treatment system, that cannot comply with the permitted activity conditions.

Policy 19 To identify and define the impact of factors not already covered in the plan which influence the effectiveness of systems.

Policy 20 To promote the use of compatible information systems for recording maintenance and system competence between city/district councils and Bay of Plenty Regional Council.

Policy 21 To carry out monitoring to assess the state of the environment regarding the impact of on-site effluent treatment.

Policy 22 To carry out monitoring to establish the impact of on-site effluent treatment systems on key sites and to determine the effectiveness of particular systems.

Policy 23 To provide for the discharge of effluent from on-site effluent treatment systems to be a permitted activity subject to conditions designed to achieve best practicable treatment and minor effects on the receiving environment.

Policy 24 To discourage the use of garbage grinders in dwellings that are reliant on on-site effluent treatment systems, unless the capacity of the system has been specifically designed to cope with the extra demand.

Policy 25 To allow the discharge of human waste into land via pit latrines in remote locations, in a manner that will not result in adverse environmental effects.

Policy 26 Maintenance Zones may be established or removed by a change to this regional plan. A Maintenance Zone may be established to reduce the cumulative effect of on-site effluent discharges from a community in which contamination from on-site effluent treatment systems is contributing to the degradation of waterways, waterbodies or the marine environment or causing a risk to public health. Every on-site effluent treatment system within a Maintenance Zone is subject to a maintenance and performance inspection and OSET Approval programme. A Maintenance Zone may be removed when a sewerage reticulation system has been commissioned for the community affected or when the cumulative effects of the discharge is no longer contributing to the degradation of waterways, waterbodies or the marine environment or causing a risk to public health. Maintenance Zone maps are shown in Schedule 10.

Policy 27 On properties greater than 2 hectare, if the nitrogen component in the discharge of effluent from an on-site effluent treatment system in any Rotorua Lakes catchment has been included in a nutrient management benchmark under the requirements of the Bay of Plenty Regional Water and Land Plan, then that nitrogen component will be managed under the Bay of Plenty Regional Water and Land Plan and not under this On-site Effluent Treatment Regional Plan. This policy applies irrespective of the distance from a lake shore.

Policy 28 A resource consent to authorise the discharge of treated domestic wastewater into land from a septic tank on-site effluent treatment system servicing a dwelling located:

- within the catchments of **Lakes Rotoiti, Rotoehu, Okaro, Rotorua and Okareka,** which has a property title with a land area of 2 hectares or less, or
- a dwelling located within 200 metres from the edge (measured horizontally) of any Rotorua Lake,

shall have conditions related to the constraints of the property and location and designed specifically to avoid, remedy or mitigate the discharge of contaminants and nutrients from the site, in particular nitrogen levels exceeding the permitted baseline limit for Total Nitrogen (TN) in the discharge of 15 grams per cubic metre, measured as nitrogen in the effluent prior to discharge into a land application system.

Remedy and mitigation alternatives may include:

1 Installing an AWTS+NR treatment system that will achieve a reduction of the Total Nitrogen discharged to a concentration not exceeding the permitted baseline, using a system approved by Bay of Plenty Regional Council, and/or

2 Making financial contributions towards reducing nutrient contamination of lake water, and/or

3 Undertaking nutrient reducing activities on the property such as establishing appropriately sized wetlands and/ or nutrient reducing plantings.

Policy 29 A resource consent to authorise the discharge of treated domestic wastewater into land from a septic tank on-site effluent treatment system from a dwelling located within a Maintenance Zone or within 200 metres from the lake edge landward (measured horizontally) of any of the Rotorua Lakes shall have as a condition the same maintenance and performance inspection and OSET Approval programme for that zone as required for permitted activities. If the consent is for a new system, then the maintenance and performance inspection and OSET Approval programme shall commence three (3) years after the system is installed.

Policy 30 A resource consent may be subject to a condition that a financial contribution is paid by the applicant to the Bay of Plenty Regional Council. The purpose of the financial contribution is to, remedy or mitigate effects on the environment caused by the discharge of contaminants and nutrients, including the discharge of nitrogen or phosphorus into a Rotorua Lake catchment, to ensure positive effects on the environment to offset any adverse effect.

Policy 31 Reticulation Zones may be established or removed by a change to this regional plan. Three types of Reticulation Zones defined by territorial local authorities (city and district councils) are shown on maps in Schedule 11:

1 Operating Reticulation Zones have existing operational sewage reticulation. Within an Operating Reticulation Zone the permitted activity authorisation for the discharge from an on-site effluent treatment system under this regional plan will cease on the date that connection to the sewerage reticulation system becomes available at the property boundary and connection to the reticulation system can be completed. Domestic wastewater from each dwelling within the

zone must be discharged into the reticulation system unless resource consent to discharge wastewater to an on-site effluent treatment system is obtained. Any application for resource consent to discharge domestic wastewater from an on-site effluent treatment system onto or into land within an Operating Reticulation Zone shall only be granted if connection to the reticulation is not possible or not required by the provisions of the Local Government Act 1974. Any such application within the zone shall be limited notified to the territorial authority managing the sewerage reticulation system for the zone.

2 Confirmed Reticulation Zones have planned sewage reticulation that has been approved by the territorial local authority with confirmed contractual and financial support and completion date before 1 December 2018. To avoid costs on homeowners within a Confirmed Reticulation Zone, each on-site effluent treatment system in the zone must comply with the minimum effluent treatment and maintenance standards under the plan, limiting capital expenditure to that necessary to meet those requirements, pending their connection into an Operating Reticulation Zone when it becomes available. A septic tank on-site effluent treatment system in a Confirmed Reticulation Zone within the catchment of any Rotorua lake is not required to comply with the requirements for nitrogen reduction.

3 Future Reticulation Zone shows areas where the territorial local authority is evaluating options, costs and proposals with the community towards constructing sewage reticulation in the future.

Policy 32 Any consent application for resource consent for a new or upgraded on-site effluent treatment system under a rule in this regional plan shall be supported by a Schedule 5; **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'**. The evaluation checklist shall be completed by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

Policy 32 does not apply to a resource consent application to replace 'like for like' an expiring consent for an existing on-site effluent treatment system that meets plan requirements and standards.

Policy 33 Any resource consent granted for a new or upgraded on-site effluent treatment system under a rule in this regional plan shall have as a condition the requirement that following installation of the system, the installer shall complete and issue a Schedule 8 **'On-site Wastewater Completion of Works Installation Certificate'** verifying that all system components have been installed and tested, and operate in conformity with:

1 The requirements of this regional plan;

2 The relevant sections of the NZS 1547:2012 Standard;

3 The completed Schedule 5 **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'** for the site and

4 The Schedule 7 **'Manufacturers Engineering Design Producer Statement'** for the system.

The Schedule 8 **'On-site Wastewater Completion of Works Installation Certificate'** shall also have attached any relevant city or district Council planning consent and regulatory authority approval(s) or Certificate(s) of Compliance. The report(s) shall be provided to the owner of the on-site system and to the Bay of Plenty Regional Council.

Schedule 7 of this regional plan provides a model **'Manufacturers Engineering Design Producer Statement'.**

Policy 33 does not apply to a resource consent application to replace 'like for like' an expiring consent for an existing on-site effluent treatment system that meets plan requirements and standards.

Policy 34 The maximum term for a resource consent granted to discharge effluent from any on-site effluent treatment system shall be generally 10 years. This is to recognise the life expectancy of an on-site effluent treatment system, the need to re-evaluate its performance within a reasonable period and the ten year review period for this regional plan.

4.4 Methods of Implementation

Bay of Plenty Regional Council will:

Education, Promotion and Provision of Information

Method 1 Encourage the reticulation of unsewered communities throughout the region especially those where degraded water quality is of particular concern as a matter of priority.

Method 2 Where appropriate to the scale and magnitude of adverse environmental effects, or location of the activity, require resource consent applicants to supply a record of consultation with all tangata whenua who are affected by the proposed activity.

Method 3 Provide information to the community on the water quality of waterways throughout the region where information is available.

Method 4 Provide up to date information to the community on the options for on-site effluent treatment that are available.

Method 5 Provide information to district/city councils and the community on the options for financial assistance from the Bay of Plenty Regional Council for small community sewage schemes.

Method 6 Educate the community on nutrient and bacterial contamination of waterways resulting from inadequate treatment of discharges from on-site effluent treatment systems and measures they can use to avoid or mitigate such contamination.

Method 7 Use information provided by applicants relating to the design of on-site effluent treatment systems as a means of assessing environmental effects.

Method 8 Educate the community on best management practices for on-site effluent treatment to avoid, remedy, or mitigate the adverse effects resulting from increased nutrient levels in the Rotorua Lakes and their catchments.

Method 9 Educate the community on the merits of installing, aerated wastewater treatment systems particularly in areas where conventional systems are inappropriate and where nutrient and pathogen contamination is evident.

Method 10 Educate the community on the range of systems and technologies available that have nutrient reducing capabilities, for both new and existing on-site effluent treatment systems.

Method 11 Provide information on aerated wastewater treatment systems that comply with the discharge requirements of the plan.

Method 12 Provide information on the environmental constraints and effects of greywater on the receiving environment.

Method 13 Provide information on the environmental constraints and effects of pit latrines on the receiving environment.

Method 14 Provide information to district/city councils and community on options for regional funding for small community sewage schemes.

Method 15 Together with the territorial local authorities (city and district councils), raise public awareness and provide education and advice to individuals and specific groups on the requirements of this plan and the operation and maintenance of on-site effluent treatment systems.

Method 16 Encourage regional and city/district councils to ensure that uniform, accessible data and information systems are developed and used, by co-operating in the development of these.

Advocacy

Method 17 Advocate to city/district councils that alternative systems, which do not rely on water to carry the waste away are not discriminated against in the building consent process.

Method 18 Advocate to city/district councils that the Project Information Memoranda (PIM) procedure be promoted as a method of ensuring that city/district councils notify applicants for building consent of the need to comply with the plan as part of their building work.

Method 19 Advocate to city/district councils the need to coordinate the implementation of this plan through their administration of the Building Act 2004:

(a) To ensure compliance with G14.3.2(d) of the Building Code (relating to foul water for unsewered sites and to avoid contamination except as permitted by the Resource Management Act 1991); and

(b) To ensure coordination between building and resource management controls.

Method 20 Advocate to the Building Industry Authority that detailed material developed to assist in interpretation of the New Zealand Building Code Clause G13 include references to non water-borne effluent treatment systems.

Method 21 Advocate and consider user charges as a per unit charge which territorial authorities could use to cover the cost of system inspection and/or septic tank pump out.

Method 22 Encourage city/district councils to include rules in their district plans to implement Policies 14 and 15.

Method 23 Advocate to city/district councils through formal planning procedures[2] that septage management facilities be provided for the storage, treatment and land application of septage collected from on-site effluent treatment systems.

Coordination and Facilitation

Method 24 Assist, in a coordination and facilitation role only, with both system maintenance and the provision of septage disposal areas by the city/district councils.

Method 25 Develop guidelines to outline acceptable methods for septage storage and disposal.

Method 26 Ensure that septage is either discharged appropriately to land by approved septage collection contractors or disposed of into approved facilities.

Method 26a Assist and support papakāinga Housing development in accordance with "*Te Keteparaha Mo Ngā Papakāinga – Māori Housing Toolkit"* within the Western Bay of Plenty District and Tauranga City through the use of appropriate on-site effluent treatment systems.

Service Delivery

Method 27 Advocate to city/district councils that they organise regular pump out of all tanks within a district, instead of leaving it to individual householders, following consultation with the community. Provision must be built into the maintenance contract to allow for review, evaluation and modification of maintenance desludging operations.

Method 28 Require a system upgrade where systems do not meet the minimum standard. Enforcement will be either through the Health Act 1956 for unsanitary premises, or through the Resource Management Act 1991 for discharge of contaminants.

Method 29 Require that existing soak holes that fail be replaced with either conventional or aerated wastewater treatment systems that meet the requirements set out in Rules 3, 4, 11 or 12.

Method 30 Providing community secondary (and tertiary) treatment schemes in situations where improved on-site treatment is not possible.

Monitoring and Investigation of the Environment

Method 31 Develop and maintain a detailed programme for State of the Environment and Impact Monitoring. This will be implemented by Bay of Plenty Regional Council.

Method 32 Link compliance and state of the environment/impact monitoring to assess whether plan policies are effective.

Method 33 Encourage liaisons to ensure that the Geographic Information Systems (GIS) of Bay of Plenty Regional Council and district and city councils are compatible and in a consistent format for data sharing.

Method 34 Monitor a sample of the building consents processed to ensure that systems are being designed and installed in accordance with the principles of on-site effluent treatment, rather than effluent disposal, and in accordance with the most up-to-date technical information available.

Method 35 Where water quality monitoring of the Rotorua Lakes indicates that:

(a) The 3-year moving average Trophic Level Index (TLI) for a lake exceeds its designated TLI specified in Objective 11 of the Operative Regional Water and Land Plan by 0.2 for 2 years; or

(b) The lake is identified as at risk of declining water quality, as identified by Method 35 Stage 1(b) of the Operative Regional Water and Land Plan;

a change to this regional plan will be initiated in accordance with the Resource Management Act 1991 to include regulatory measures that will address the export of nitrogen and phosphorus from on-site effluent treatment systems in the specific lake catchment.

Method 36 Maintain an accreditation system and register of suitably experienced septic tank cleaners/drainlayers trained and warranted as Approved Certifiers to undertake septic tank and land application system inspections and maintenance programmes.

Effectiveness of Policy (Evaluation)

Method 37 Monitor the effectiveness and efficiency of policies, rules and other methods in this regional plan using environmental monitoring data (refer to Method 31) and compliance monitoring information.

[2] For example Annual Plans, District Plans and Ten Year Plans (TYP's)

City and District Councils will:

Method 38 Use desk and field assessments to measure the operating capability and suitability of each on-site effluent treatment system as they are approved at subdivision or Building Consent stage, to ensure each system complies with the requirements of the Bay of Plenty On-Site Effluent Treatment Regional Plan before a Building Consent is issued and they are installed. If the on-site effluent treatment system is not a permitted activity under this regional plan then any required resource consents for effluent discharge must be issued before a Building Consent is issued.

Method 39 Require that any subdivision consent relying on on-site effluent treatment of domestic wastewater, demonstrate a suitable on-site effluent treatment system and area for disposal for each lot. This will include method of treatment and containment, assumptions for designs, and land application area including reserve area. An evaluation of the site using the Schedule 5 'On-site Wastewater Disposal Site and Soil Evaluation Checklist' must be completed by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

4.5 Explanation/Principal Reasons

Para 1 The objectives, policies and methods in this section are necessary to achieve sustainable management of water and soil resources in the region, and to provide specific guidance on the management of discharges from on-site effluent treatment systems in the Bay of Plenty.

Para 2 The greatest concern relating to on-site effluent treatment is the adverse effects of inadequate treatment of discharges and Issue 1 specifies areas throughout the region where degraded water quality is of particular concern.

Para 3 The discharge of effluent from on-site effluent treatment systems in the coastal communities identified in Issue 1 is causing concern in regards to the potential for nutrient enrichment and contamination of coastal beach and estuary areas. High levels of pathogens are often found in 'splash zones' of the sea which are highly utilised by the public, and particularly infants.

Para 4 A primary focus for the Proposed Regional Water and Land Plan is improving water quality within the Rotorua lakes and their catchments. Objective 11 of the Operative Regional Water and Land Plan requires that water quality in the Rotorua lakes be maintained or improved to meet the given Trophic Level Indices.

One critical action to achieve this is to manage and maintain on-site effluent treatment systems in the catchments so as to reduce the adverse environmental effects from the on-site effluent discharge.

5 Regional Rules

5.1 Guide to Rules

Activities under this regional plan are permitted, discretionary or prohibited. A permitted activity is allowed without a resource consent if it complies with all the conditions specified in the rule. A discretionary activity is allowed only if a resource consent is obtained for that activity. A prohibited activity will not be allowed in the region, and no resource consent will be granted in respect of that activity.

Activity	Rule Number	Page Number
Aerated wastewater treatment systems – Existing systems located outside the Rotorua Lakes Catchments, Tauranga City Urban Area and a Reticulation Zone	10	82
Aerated wastewater treatment systems – Existing systems located within the Rotorua Lakes Catchments an outside an Operating Reticulation Zone	11	83
Aerated wastewater treatment systems – New systems located outside the Rotorua Lakes Catchments, Tauranga City Urban Area and a Reticulation Zone	12	86
Aerated wastewater treatment systems – New systems located within the Rotorua Lakes Catchments and outside an operating Reticulation Zone	13	88
Aerated wastewater treatment systems – Not otherwise permitted by a rule in this plan	14	91
Septic Tank Systems – Existing systems located outside the Rotorua Lakes Catchments Tauranga City Urban Area and an Operating Reticulation Zone	1	58
Septic Tank Systems – Existing systems located within the Rotorua Lakes Catchments and outside an Operating Reticulation Zone	2	61
Septic Tank Systems – New systems located outside the Rotorua Lakes Catchments, Tauranga City Urban Area and an Operating Reticulation Zone	3	65
Septic Tank Systems - New systems located within Rotorua Lakes catchments	4	68
Septic Tank Systems – Not otherwise permitted by a rule in this plan	5	70
Septic Tank Systems – Existing systems located in Ongare Point, Te Puna West, Tarawera, Gisborne Point, Rotoma, Hinehopu, and Lake Rotoehu catchment may require consents on specified dates.	6	72
Discharge of Greywater	16	96
Discharge of Greywater – not permitted by a rule in this plan	17	97
Discharge of Septage to Land	22	103
Discharge to Soak Holes	7	75
Dwelling Expansion/Alteration/Reconstruction	20	99
Pit Latrines in remote locations	18	98
Pit Latrines – Unable to comply with Rule 18	19	99
Spray Irrigation of Wastewater Effluent	23	103
System Upgrade or replacement	21	101
Septic tanks within Tauranga City Urban Area	9	77
Aerated wastewater treatment systems and within Tauranga City Urban Area	15	92
Use of Explosives	8	77
New individual septic tank or aerated wastewater treatment systems from Papakāinga in TCC or WBOPDC	24	104
New shared septic tank or aerated wastewater treatment systems from Papakāinga in TCC or WBOPDC	25	105
Discharge from Papakāinga in TCC or WBOPDC that cannot comply with Rules 23 or 24	26	107

5.2 Septic Tank On-Site Effluent Treatment Systems

Rule 1 Permitted – Discharge of treated domestic wastewater from an existing septic tank on-site effluent treatment system located outside of the Rotorua Lakes Catchments, outside the Tauranga City Urban Area and outside an Operating Reticulation Zone.

The discharge of up to 2 cubic metres per day of treated domestic wastewater into land from a septic tank on-site effluent treatment system located:

1 outside of the Rotorua Lakes Catchments, and

2 outside the Tauranga City Urban Area, and

3 outside a Reticulation Zone defined in Schedule 11

that was installed and commissioned before 1 December 2012 is a permitted activity subject to the following conditions:

(a) The system shall comply with the requirements of Schedule 1.

(b) Solids in a septic tank do not exceed one third of the liquid volume of the tank at any time.

(c) All existing septic tank on-site effluent treatment systems located within the Maintenance Zones specified in Schedule 10 for the communities of**, Ongare Point, Te Puna West, Tanners Point**, **and Bryans Beach** shall comply with the following:

Every on-site effluent treatment system within a Maintenance Zone is subject to a maintenance and performance inspection and OSET Approval programme.

This begins with an initial septic tank pump out and an inspection of the whole on-site effluent treatment system (septic tank and land application system) carried out by a Bay of Plenty Regional Council Approved Certifier. This is followed at three (3) yearly intervals by further (subsequent) inspections. At each subsequent inspection the Approved Certifier will assess the septic tank and will require it to be pumped out if the combined sludge and scum levels exceed one third of the depth of the tank. Where an outlet filter is fitted, it must be cleaned and inspected at the same time. After each inspection the Approved Certifier will complete a report on the system and provide one copy to the owner and one copy to Bay of Plenty Regional Council.

If the Approved Certifier reports that the system is compliant, the Bay of Plenty Regional Council will issue the owner with an OSET Approval that will note the date for the next inspection. A copy of this approval will be sent to the district council.

An OSET Approval cannot be issued if the system (septic tank and land application system) fails to meet the standards and requirements of this regional plan, in particular Schedule 1.

If the Approved Certifier finds that the system is not compliant with the required standards, the Bay of Plenty Regional Council will notify the owner outlining the repairs or upgrades required for their system to comply with this permitted activity Rule. When the repairs or upgrades have been completed, the owner must advise the Bay of Plenty Regional Council and a further inspection will be made. Discharge from the system shall be deemed to remain a permitted activity until the repairs or upgrades have been completed or for a period of three months whichever is the lesser.

If an on-site effluent treatment system in a Maintenance Zone:

1 Has a septic tank fitted with an approved outlet filter that is compliant at all times with the provisions of Appendix D of NZS 1546.1:2008 and is regularly cleaned and maintained to a high sanitary standard, and

2 The tank has a liquid volume greater than 2,700 litres, and

3 The tank lid is easily accessible and can be raised without the need of lifting equipment so that the sludge level in the tank can be assessed.

Then at the discretion of the Approved Certifier, the period between inspections may be extended for up to six (6) years and this will be noted on the Approved Certifier's report.

By agreement with Bay of Plenty Regional Council, a district council may administer all or part of the maintenance and performance inspection programme for a Maintenance Zone in their district.

(d) Unless decommissioned and connected to a Western Bay of Plenty District Council or approved community sewerage reticulation system, existing septic tank on-site effluent treatment systems located within the Maintenance Zones specified in Schedule 10, for the communities of **Ongare Point and Te Puna West** permitted by (c) above will only be permitted until the following dates, or three months after connection to sewerage reticulation becomes available, whichever is the sooner, after which the discharge from the system will become a discretionary activity administered under Rule 6: for Ongare Point and Te Puna West on 1 December 2015.

In the context of this condition, 'decommissioned' means that drain pipes into and out of a septic tank have been physically disconnected and the septic tank pumped out to ensure no discharge can occur from it.

(e) Subject to compliance with the other conditions of Rule 1, the discharge of primary treated effluent from a septic tank into a soak hole constructed, installed or replaced before 1 December 1996 shall only be permitted if:

(i) The septic tank connected to the soak hole has been installed and maintained to the standards required by this regional plan at all times;
(ii) There is no direct discharge of effluent from the soak hole into groundwater;
(iii) There is not less than 2 metres between the base of the soak hole and the highest seasonal groundwater level (highest water table) at all times;
(iv) There is no discharge to surface water or overland flow from the soak hole at all times;

(f) When a septic tank effluent treatment system is in a Confirmed Reticulation Zone, it is exempt from the requirements of this Rule in regards system upgrades and shall instead:

A. Comply with Schedule 1, or

B. have an existing septic tank with a liquid volume of 2000 litres or more, that:

(i) is fitted with an approved outlet filter that is operating effectively and is regularly cleaned and maintained to a high sanitary standard, and

(ii) has an easily accessible tank lid that can be raised without the need of lifting equipment so that the sludge level in the tank can be assessed, and

(iii) has combined sludge and scum levels that do not exceed one third of the liquid volume of the tank, and

(iv) the land application system is functioning effectively, with no effluent discharge directly into surface water or onto the land surface, and

(v) if in a Maintenance Zone, complies with the maintenance and performance inspection and OSET Approval programme requirements specified for the zone,

When a Confirmed Reticulation Zone is designated as an Operating Reticulation Zone, the exemption provided by this condition and the permitted activity authorisation of this Rule, shall cease.

Advisory Note:

1 Refer to Flow Diagram 1 to assist reading of this rule. Please note that the flow diagram is to assist working out which rules apply but does not constitute a part of the rules. If there is any inconsistency between the flow diagram and the rules in the regional plan it refers to, the criteria in the rules prevail.

2 Schedule 1, 2(i) requires that in a Maintenance Zone the access points for pump out of tank and for cleaning of the outlet filter shall be raised to ground level. In order to clean out a septic tank the middle lid needs to be lifted not the end lid. Septic tanks that have outlet filters installed must have easy access for cleaning, and be easily located and identifiable. It is advisable to install a man hole for access to septic tank on-site effluent treatment systems for ease of maintenance, where the lid is not at ground level.

3 A decommissioned septic tank is a safety hazard. When decommissioning a septic tank it is advisable to remove or collapse the tank and back fill the hole to prevent anyone falling into it and to stop it from floating up on groundwater.

4 The discharge of treated domestic wastewater within the Tauranga City Urban Area is a **discretionary activity** under Rule 9.

5 Policy 31 applies to effluent discharge from properties in a Reticulation Zone. Within and Operating Reticulation Zone the permitted activity authorisation for a property under this rule will cease on the date that connection to the sewerage reticulation system becomes available. Reticulation Zone maps are shown in Schedule 11.

6 The discharge of effluent from a soak hole constructed, installed or replaced before 1 December 1996 that does not comply with this condition is a **discretionary activity** administered under Rule 5.

7 The discharge of effluent from a soak hole constructed, installed or replaced (including the replacement of a failed soak hole) after 1 December 1996, is a **discretionary activity** administered under Rule 7.

8 The discharge of effluent from septic tank on-site effluent treatment systems or AWTS's servicing places of assembly where many people will regularly gather is a Discretionary Activity requiring resource consent. For example, this includes rural factories, camp grounds, schools, sport clubs and Marae. For one-off events where a crowd is expected and the capacities of the septic tank on-site effluent treatment systems or AWTS's are likely to be exceeded, the use of temporary facilities such as port-a-loos should be arranged.

9 The discharge of effluent from new septic tank on-site effluent treatment systems or AWTS systems from any development which result in more than 4 dwellings on a property is a Discretionary Activity.

10 Contact Bay of Plenty Regional Council for a list of Approved Certifiers in your area.

Explanation/Intent of Rule

This rule allows the use of existing septic tank systems provided they meet the general permitted activity conditions in order to avoid or mitigate adverse environmental effects. Minimum design standards for existing on-site effluent treatment systems within the Bay of Plenty are set in Schedule 1. The rule recognises specific communities within the region where monitoring has shown that septic tank contamination is causing adverse effects. These communities are designated as Maintenance Zones and have additional maintenance and performance inspection requirements and an OSET Approval procedure to ensure systems are functioning adequately.

In addition, by 1 December 2015, septic tank systems in Ongare Point and Te Puna west are required to either upgrade to an Aerated Waste Water Treatment System, connect onto a Western Bay of Plenty District Council or approved community sewerage reticulation system or apply for resource consent to continue operating. This additional requirement does not apply to the Maintenance Zones of Bryans Beach and Tanners Point.

Rule 2 Permitted – Discharge of Treated Domestic Wastewater into land from an Existing Septic Tank On-Site Effluent Treatment System Located within the Rotorua Lakes Catchments and outside an Operating Reticulation Zone.

The discharge of up to 2 cubic metres per day of treated domestic wastewater into land from a septic tank on-site effluent treatment system located within the Rotorua Lakes Catchments and outside an Operating Reticulation Zone defined in Schedule 11, that was installed and commissioned before 1 December 2012 is a permitted activity subject to the following conditions:

(a) The system shall comply with the requirements of Schedule 1.

(b) Solids in a septic tank do not exceed one third of the liquid volume of the tank at any time.

(c) All existing septic tank effluent treatment systems located:

a. within the Maintenance Zones specified in Schedule 10 for the communities of**, Gisborne Point, Hinehopu, Rotoma, and Tarawera**, or

b. within **200 metres** from the lake edge landward (measured horizontally) of any of the Rotorua Lakes (See the maps in Schedule 9)

must also comply with the following:

Every on-site effluent treatment system within a Maintenance Zone or within 200 metres from the lake edge landward (measured horizontally) of any of the Rotorua Lakes is subject to a maintenance and performance inspection and OSET Approval programme.

This begins with an initial septic tank pump out and an inspection of the whole on-site effluent treatment system (septic tank and land application system) carried out by a Bay of Plenty Regional Council Approved Certifier. This is followed at three (3) yearly intervals by further (subsequent) inspections. At each subsequent inspection the Approved Certifier will assess the septic tank and will require it to be pumped out if the combined sludge and scum levels exceed one third of the depth of the tank. Where an outlet filter is fitted, it must be cleaned and inspected at the same time. After each inspection the Approved Certifier will complete a report on the system and provide one copy to the owner and one copy to Bay of Plenty Regional Council.

If the Approved Certifier finds that the system is compliant, the Bay of Plenty Regional Council will issue the owner with an OSET Approval that will note the date for the next inspection. A copy of this approval will be sent to the district council.

OSET Approval cannot be issued if the system (septic tank and land application system) fails to meet the standards and requirements of this regional plan, in particular Schedule 1.

If the Approved Certifier finds that the system is not compliant with the required standards, the Bay of Plenty Regional Council will notify the owner outlining the repairs or upgrades required for their system to comply with this permitted activity Rule. When the repairs or upgrades have been completed the owner will advise the Bay of Plenty Regional Council and a further inspection will be made. The system shall be deemed to remain a permitted activity until the repairs or upgrades have been completed or for a period of three months whichever is the lesser.

If an on-site effluent treatment system in a Maintenance Zone:

1 Has a septic tank fitted with an approved outlet filter that is compliant at all times with the provisions of Appendix D of NZS 1546.1:2008 and is regularly cleaned and maintained to a high sanitary standard; and

2 The tank has a liquid volume greater than 2,700 litres; and

3 The tank lid is easily accessible and can be raised without the need of lifting equipment so that the sludge level in the tank can be assessed,

Then at the discretion of the Approved Certifier, the period between inspections may be extended for up to six (6) years and this will be noted on the Approved Certifier's report.

By agreement with Bay of Plenty Regional Council, the Rotorua District Council may administer all or part of the maintenance and performance inspection programme for a Maintenance Zone in their district.

(d) Unless decommissioned and connected to a Rotorua District Council or approved community sewerage reticulation system, each existing septic tank on-site effluent treatment system located within the Maintenance Zones specified in Schedule 10, and permitted by (c) above, will only be a permitted activity until the following dates, or three months after connection to sewerage reticulation becomes available, whichever is the sooner, after which the discharge from the system will become a discretionary activity administered under Rule 6:

a. Hinehopu, Gisborne Point and Rotoma; 1 December 2016;

b. Tarawera; 1 December 2017.

In the context of this condition, 'decommissioned' means that drain pipes into and out of a septic tank have been physically disconnected and the septic tank pumped out to ensure no discharge can occur from it.

(e) Existing septic tank on-site effluent treatment systems that are:

- located within **200 metres** from the lake edge (measured horizontally) or within an existing lake edge community (See the maps in Schedule 9), and
- not connected to a Rotorua District Council sewerage reticulation system or an approved community sewerage reticulation system, and
- are outside a Maintenance Zone.

must, by **1 December 2014** be capable, after a settling in period, of reducing the total nitrogen (TN) in the discharge, to a concentration not exceeding 15 grams per cubic metre, measured as nitrogen, prior to discharge to the land application system. The Aerated Wastewater Treatment System must be approved by Bay of Plenty Regional Council.

(f) All existing septic tank on-site effluent treatment systems that are located distances greater than **200 metres** from the lake edge and therefore not considered under condition (e) but are located within the catchments of **Lakes Rotoiti, Rotoehu, Okaro, Rotorua and Okareka,** within a property title having a land area of 2 hectares or less where there is one or more systems within that property title must, by the following dates, be capable, after a settling in period, of reducing the total nitrogen (TN) in the discharge, to a concentration not exceeding 15 grams per cubic metre, measured as nitrogen, prior to discharge to the land application system. The Aerated Wastewater Treatment System must be approved by Bay of Plenty Regional Council:

a. Lakes Okaro, Rotorua (except the sewerage reticulated area of Mamaku township) and Okareka; 1 December 2014

b. The sewerage reticulated area of Mamaku township shown on Map 18 of Schedule 9, 1 December 2018

c. Lake Rotoehu, Lake Rotoiti; 1 December 2016

(g) For the purpose of Rule 2 conditions (e) and (f), a settling in period shall not exceed six months from the date on which the system is first commissioned.

(h) Discharge from systems that are not upgraded in accordance with Rule 2 will become a discretionary activity under Rule 5 of this regional plan.

(i) Subject to compliance with the other conditions of Rule 2, the discharge of primary treated effluent from a septic tank into a soak hole constructed, installed or replaced before 1 December 1996 shall only be permitted if:

(i) The septic tank connected to the soak hole has been installed and maintained to the standards required by this regional plan at all times;
(ii) There is no direct discharge of effluent from the soak hole into groundwater;
(iii) There is not less than 2 metres between the base of the soak hole and the highest seasonal groundwater level (highest water table) at all times;
(iv) There is no discharge to surface water or overland flow from the soak hole at all times.

(j) When a septic tank on-site effluent treatment system is in a Confirmed Reticulation Zone, it is exempt from the requirements of this Rule in regards system upgrades and shall instead:

A. Comply with Schedule 1, or
B. have an existing septic tank with a liquid volume of 2000 litres or more, that:

(i) is fitted with an approved outlet filter that is operating effectively and is regularly cleaned and maintained to a high sanitary standard, and

(ii) has an easily accessible tank lid that can be raised without the need of lifting equipment so that the sludge level in the tank can be assessed, and

(iii) has combined sludge and scum levels that do not exceed one third of the liquid volume of the tank, and

(iv) the land application system is functioning effectively, with no effluent discharge directly into surface water or onto the land surface, and

(v) if in a Maintenance Zone, complies with the maintenance and performance inspection and OSET Approval programme requirements specified for the zone.

A septic tank on-site effluent treatment system in a Confirmed Reticulation Zone within the catchment of any Rotorua lake is not required to comply with the requirements for nitrogen reduction.

When a Confirmed Reticulation Zone is designated as an Operating Reticulation Zone, the exemption provided by this condition and the permitted activity authorisation of this Rule shall cease.

Advisory Note:

1 Refer to Flow Diagram 1 to assist reading of this rule. Please note that the flow diagram is to assist working out which rules apply but does not constitute a part of the rules. If there is any inconsistency between the flow diagram and the rules in the regional plan it refers to, the criteria in the rules prevail.

2 Schedule 1, 2(i) requires that in a Maintenance Zone the access points for pump out of tank and for cleaning of the outlet filter shall be raised to ground level. In order to clean out a septic tank the middle lid needs to be lifted not the end lid. Septic tanks that have outlet filters installed must have easy access for cleaning, and be easily located and identifiable. It is advisable to install a man hole for access to septic tank on-site effluent treatment systems for ease of maintenance, where the lid is not at ground level.

3 'Property title' is defined in Definition of Terms.

4 Bay of Plenty Regional Council has information on aerated wastewater treatment systems that comply with the discharge requirements of the regional plan. Please contact Bay of Plenty Regional Council for a listing of approved systems.

5 Under Policy 27, the nitrogen component in an on-site effluent discharge from a property over 2 ha in the catchment of a Rotorua Lake that has been identified and included in the nutrient management benchmark for that property under the requirements of the Bay of Plenty Regional Water and Land Plan will be managed under that regional plan.

6 Policy 31 applies to effluent discharge from properties in a Reticulation Zone. Within an Operating Reticulation Zone the permitted activity authorisation for a property under this rule will cease on the date that connection to the sewerage reticulation system at the property boundary and connection to the reticulation system can be completed. Operating Reticulation Zone maps are shown in Schedule 11.

7 A decommissioned septic tank is a safety hazard. When decommissioning a septic tank it is advisable to remove or collapse the tank and back fill the hole to prevent anyone falling into it and to stop it from floating up on groundwater.

8 The discharge of effluent from a soak hole constructed, installed or replaced before 1 December 1996 that does not comply with this condition is a **discretionary activity** administered under Rule 5.

9 The discharge of effluent from a soak hole constructed, installed or replaced (including the replacement of a failed soak hole) after 1 December 1996, is a **discretionary activity** administered under Rule 7.

10 The discharge of effluent from septic tank on-site effluent treatment systems or AWTS's servicing places of assembly where many people will regularly gather is a Discretionary Activity requiring resource consent. For example, this includes rural factories, camp grounds, schools, sports clubs and Marae. For one-off events where a crowd is expected and the capacities of the septic tank on-site effluent treatment systems or AWTS's are likely to be exceeded, the use of temporary facilities such as port-a-loos should be arranged.

11 The discharge of effluent from new septic tank on-site effluent treatment systems or AWTS systems from any development which result in more than 4 dwellings on a property is a Discretionary Activity.

12 Contact Bay of Plenty Regional Council for a list of Approved Certifiers in your area.

Explanation/Intent of Rule

This rule allows the use of septic tank on-site effluent treatment systems in the Rotorua Lakes Catchments provided they meet the general permitted activity conditions in order to avoid or mitigate adverse environmental effects.

Minimum design standards for on-site effluent treatment systems within the Bay of Plenty are set in Schedule 1 and the rule recognises specific communities within the Rotorua Lakes Catchments where monitoring has shown that septic tank contamination is causing adverse effects. In these communities there are additional maintenance requirements for regular inspection and certification to ensure systems are functioning adequately. In addition, by 1 December 2016 for Hinehopu, Gisborne Point and Rotoma and 1 December 2017 for Tarawera, septic tank on-site effluent treatment systems in these communities are required to either upgrade to an Aerated Waste Water Treatment System, connect onto a reticulated system or apply for resource consent to continue operating.

This Rule also includes specific circumstances whereby on-site effluent treatment systems must have nutrient reducing capabilities. These include:

- Systems located near the lakeshore: There is greater potential for adverse effects on a lake from wastewater discharges near the lakeshore than those further away. The rule specifies systems located within 200 metres or within existing lakeshore communities.

- The catchments of Lakes **Rotoiti, Rotoehu, Okaro, Rotorua** and **Okareka** are identified in the Proposed Regional Water and Land Plan as currently exceeding their Trophic Level Index (TLI). There is greater potential for adverse effects on a lake where there are many on-site effluent treatment systems in close proximity to each other (clustered together), than where there are isolated systems on large properties. For this reason, Rule 2 requires nutrient reducing capabilities in these catchments where there is a *density* of one or more systems per property title area of 2 hectares or less.

  New aerated wastewater treatment systems require time to build up populations of certain bacteria needed to achieve nitrogen reduction to the standard set by the regional plan. This period will also provide time to correct any technical malfunctions. The settling in period may vary, however it is expected that an efficient system will achieve the standard within a few months.

  In addition, the Rule includes specific circumstances and locations whereby existing septic tank on-site effluent treatment systems must either upgrade to Aerated Waste Water Treatment Systems , connect onto a Rotorua District Council or approved community sewerage reticulation system or apply for resource consent to continue operating; by 1 December 2014 for Lakes, Okaro, Rotorua and Okareka, 1 December 2016 for Lake Rotoehu and Lake Rotoiti, and 1 December 2018 for the sewerage reticulated area of Mamaku township.

Rule 3 Permitted – Discharge of Treated Domestic Wastewater into Land from a New Septic Tank On-Site Effluent Treatment Systems Located outside of the Rotorua Lakes Catchments, Tauranga City Urban Area and outside an Operating Reticulation Zone.

The discharge of up to 2 cubic metres per day of treated domestic wastewater from a single dwelling into land from:

1 A single dwelling on a property where the site contains a land application area that meets the requirements of NZS 1547:2012 and Schedule 6 of this regional plan for potential occupancy of the dwelling, or

2 Up to four dwellings on a single property provided each dwelling meets the requirements of NZS 1547:2012 and Schedule 6 of this regional plan for potential occupancy of the dwelling and has its own individual, associated and adjacent land application area of not less than 1200 m2, or

3 Ablution facilities at exchanges or substations owned by a network utility operator, or

4 A rural business where there is no residential activity, a maximum of four persons are employed and the premises are not an eating-house, cafe or food factory.

into land: from a new septic tank on-site effluent treatment system located:

1 outside of the Rotorua Lakes Catchments, and

2 outside the Tauranga City Urban Area, and

3 outside an Operating Reticulation Zone defined in Schedule 11.

is a permitted activity subject to the following conditions:

(a) The site for the system in not subject to slippage, subsidence, erosion or inundation from any source.

(b) The land application area is located not less than 20 metres from any drinking bore and 20 metres from any surface waterbody and ephemeral flowpath.

(c) The system shall comply with the requirements of NZS 1546.1:2008 *'On-site domestic wastewater treatment units – Septic tanks'* sections 3 and 4 and NZS 1547:2012 '*On-site domestic wastewater management'* and the provisions of Schedule 2. The design shall be supported by a completed Schedule 5 '**On-site Wastewater Disposal Site and Soil Evaluation Checklist**'. The evaluation checklist shall be completed by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

(d) There shall be no overland flow or surface water ponding as a result of the discharge of the wastewater.

(e) The septic tank shall be fitted with an outlet solids filter with service access at ground level.

(f) All new systems located within the Maintenance Zones specified in Schedule 10 for the communities of, Ongare Point, Te Puna West, Tanners Point, and Bryans Beach must also comply with the following:

Every new on-site effluent treatment system within a Maintenance Zone is subject to a maintenance and performance inspection and OSET Approval programme.

This begins three (3) years after the installation of the new on-site effluent treatment system with an initial septic tank pump out and an inspection of the whole on-site effluent treatment system (septic tank and land application system) carried out by a Bay of Plenty Regional Council Approved Certifier. This is followed at three (3) yearly intervals by further (subsequent) inspections. At each subsequent inspection the Approved Certifier will assess the septic tank and will require it to be pumped out if the combined sludge and scum levels exceed one third of the depth of the tank. Where an outlet filter is fitted, it must be cleaned and inspected at the same time. After each inspection the Approved Certifier will complete a report on the system and provide one copy to the owner and one copy to Bay of Plenty Regional Council.

If the Approved Certifier finds that the system is compliant, the Bay of Plenty Regional Council will issue the owner with an OSET Approval that will note the date for the next inspection. A copy of this approval will be sent to the district council.

An OSET Approval cannot be issued if the system (septic tank and land application system) fails to meet the standards and requirements of this regional plan, in particular Schedule 2.

If the Approved Certifier finds that the system is not compliant with the required standards, the Bay of Plenty Regional Council will notify the owner outlining the repairs or upgrades required for their system to comply with this permitted activity Rule. When the repairs or upgrades have been completed the owner will advise the Bay of Plenty Regional Council and a further inspection will be made. The system shall be deemed to remain a permitted activity until the repairs or upgrades have been completed or for a period of three months whichever is the lesser.

At the discretion of the Approved Certifier, the period between inspections may be extended for up to six (6) years and this will be noted on the Approved Certifier's report.

By agreement with Bay of Plenty Regional Council, a district council may administer all or part of the maintenance and performance inspection programme for a Maintenance Zone in their district.

(g) Unless decommissioned and connected to a Western Bay of Plenty District Council or approved community sewerage reticulation system, a new septic tank on-site effluent treatment system located within the Maintenance Zones specified in Schedule 10 for the communities of **Ongare Point and Te Puna West** permitted by (f) above, will only be a permitted activity until 1 December 2015, or three months after connection to sewerage reticulation becomes available, whichever is the sooner, after which the discharge from the system will become a discretionary activity administered under Rule 6.

In the context of this condition, 'decommissioned' means that drain pipes into and out of a septic tank have been disconnected and the septic tank pumped out to ensure no discharge can occur from it.

(h) When a septic tank on-site effluent treatment system is in a Confirmed Reticulation Zone, it is exempt from the requirements of this Rule in regards system upgrades and shall instead:

A. Comply with Schedule 1, or
B. have an existing septic tank with a liquid volume of 200 litres or more, that:

(i) is fitted with an approved outlet filter that is operating effectively and is regularly cleaned and maintained to a high sanitary standard, and

(ii) has an easily accessible tank lid that can be raised without the need of lifting equipment so that the sludge level in the tank can be assessed, and

(iii) has combined sludge and scum levels that do not exceed one third of the liquid volume of the tank, and

(iv) the land application system is functioning effectively, with no effluent discharge directly into surface water or onto the land surface, and

(v) if in a Maintenance Zone, complies with the maintenance and performance inspection and OSET Approval programme requirements specified for the zone

When a Confirmed Reticulation Zone is designated as an Operating Reticulation Zone, the exemption provided by this condition and the permitted activity authorisation of this Rule shall cease.

Advisory Note:

1 Refer to Flow Diagram 2 to assist reading of this rule. Please note that the flow diagram is to assist working out which rules apply but does not constitute a part of the rules. If there is any inconsistency between the flow diagram and the rules in the regional plan it refers to, the criteria in the rules prevail.

2 In order to clean out a septic tank the middle lid needs to be lifted not the end lid. Septic tanks that have outlet filters installed must have easy access for cleaning,

and be easily located and identifiable. It is advisable to install a man hole for access to septic tank on-site effluent treatment systems for ease of maintenance, where the lid is not at ground level.

3 Note that to comply with condition (c), you will need to engage a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

4 Policy 31 applies to effluent discharge from properties in a Reticulation Zone. Within an Operating Reticulation Zone the permitted activity authorisation for a property under this rule will cease on the date that connection to the sewerage reticulation system becomes available at the property boundary and connection to the reticulation system can be completed. Operating Reticulation Zone maps are shown in Schedule 11.

5 A decommissioned septic tank is a safety hazard. When decommissioning a septic tank it is advisable to remove or collapse the tank and back fill the hole to prevent anyone falling into it and to stop it from floating up on groundwater.

6 The discharge of effluent from septic tank on-site effluent treatment systems or AWTS's servicing places of assembly where many people will regularly gather is a Discretionary Activity requiring resource consent. For example, this includes rural factories, camp grounds, schools, sports clubs and Marae. For one-off events where a crowd is expected and the capacities of the septic tank on-site effluent treatment systems or AWTS's are likely to be exceeded, the use of temporary facilities such as port-a-loos should be arranged.

7 The discharge of effluent from new septic tank on-site effluent treatment systems or AWTS systems from any development which result in more than 4 dwellings on a property is a Discretionary Activity.

8 Contact Bay of Plenty Regional Council for a list of Approved Certifiers in your area.

Explanation/Intent of Rule

This rule allows the use of new conventional septic tank systems located outside of the Rotorua Lakes Catchments provided they meet the general permitted activity conditions in order to avoid or mitigate adverse environmental effects. Minimum design standards for on-site effluent treatment systems within the Bay of Plenty are set and the rule recognises specific communities where monitoring has shown that septic tank contamination is causing adverse effects. In these communities there are additional maintenance requirements for regular inspection and certification to ensure systems are functioning adequately. In these communities there are additional maintenance requirements for regular inspection and certification to ensure systems are functioning adequately. In addition, by 1 December 2015 for Ongare Point and Te Puna West, new septic tank systems in a Maintenance Zone in these communities are required to either upgrade to an Aerated Wastewater Treatment System, connect onto a Western Bay of Plenty District Council or approved community sewerage reticulation system or apply for resource consent to continue operating.

Rule 4 Discretionary – Discharge of Treated Domestic Wastewater into Land from a New Septic Tank On-Site Effluent Treatment Systems Located within the Rotorua Lakes Catchments.

The discharge of treated domestic wastewater into land from a new septic tank on-site effluent treatment system within the Rotorua Lakes Catchments is a **discretionary activity** subject to the following requirements:

1 If the location is subject to Policy 28, and unless mitigated by a financial contribution, a condition related to the constraints of the property and location and designed specifically to avoid, remedy or mitigate the discharge of contaminants and nutrients from the site, in particular nitrogen levels exceeding the 15 grams per cubic metre permitted baseline limit.

2 The application shall include a Schedule 5: '**On-site Wastewater Disposal Site and Soil Evaluation Checklist**' completed by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

3 The design, installation and discharge quality of the on-site effluent treatment system proposed shall meet or exceed the requirements of:

a. This regional plan, in particular the provisions of Schedule 2,

b. NZS 1546.1:2008 'On-site domestic wastewater treatment units – Septic tanks' Sections 3 and 4,

c. NZS 1547:2012 'On-site domestic wastewater management', and

d. Section 9.4 of the Regional Water and Land Plan

4 A condition requiring a financial contribution may be used in accordance with Section 6 of this plan to avoid, remedy and mitigate all or part of the effects of contaminants and nutrients in the discharge.

5 If the dwelling is located in an Operating Reticulation Zone, the application shall be limited notified to the territorial local authority managing the sewerage reticulation system for the location.

6 A condition requiring that following installation of the system, the installer shall complete and provide to the Bay of Plenty Regional Council a Schedule 8 '**On-site Wastewater Completion of Works Installation Certificate**' verifying that all system components have been installed and tested, and operate in conformity with:

a. The requirements of this regional plan;

b. The relevant sections of the NZS 1547:2012 Standard;

c. The completed Schedule 5 **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'** for the site; and

d. The Schedule 7 **'Manufacturers Engineering Design Producer Statement'** for the system.

The Schedule 8 **'On-site Wastewater Completion of Works Installation Certificate'** shall also have attached any relevant District Council planning consent and regulatory authority approval(s) or Certificate(s) of Compliance. The report(s) shall be provided to the owner of the on-site system and to the Bay of Plenty Regional Council.

7 If an on-site effluent treatment system is located within a Maintenance Zone or within 200 metres from the lake edge landward (measured horizontally) of any of the Rotorua lakes then it shall have a condition requiring the same maintenance and performance inspection and OSET Approval programme required by Rule 3(f).

8 An application for resource consent to discharge treated effluent onto or into land under this rule shall be declined if:

1. The on-site effluent treatment system and the treated effluent from it cannot meet the NZS or the schedule requirements for the rule, or

2. The Resulting discharge will cause effects that cannot be safely and effectively avoided, remedied or mitigated (including by financial contribution).

Assessment Criteria

When assessing resource consent applications under this rule, Bay of Plenty Regional Council will have particular regard to, but not be limited to, the following provisions:

Objective 1, 2, 3, 4, 8, 9, 10

Policy 2, 4, 7, 8, 9, 12, 18, 19, 21, 24, 27, 28, 29, 30, 31, 32, 33, 34

Method 7, 11

Advisory Notes:

1 Details on information to be submitted with resource consent applications can be found in Section 7 of this plan.

2 The installation of new Aerated Wastewater Treatment Systems within the Rotorua Lakes Catchments may be a permitted activity and this is addressed in Rule 13.

3 In order to clean out a septic tank the middle lid needs to be lifted not the end lid. Septic tanks that have outlet filters installed must have easy access for cleaning, and be easily located and identifiable. It is advisable to install a man hole for access to septic tank on-site effluent treatment systems for ease of maintenance, where the lid is not at ground level.

4 The installation of a new Aerated Wastewater Treatment System with nitrogen reduction capability within the Rotorua Lakes Catchments may be a permitted activity under Rule 13.

5 Applications for resource consent involving the installation or use of a soak hole shall be considered with regard to the requirements of Rule 7.

6 The discharge of effluent from septic tank on-site effluent treatment systems or AWTS's servicing places of assembly where many people will regularly gather is a Discretionary Activity requiring resource consent. For example, this includes rural factories, camp grounds, schools, sports clubs and Marae. For one-off events where a crowd is expected and the capacities of the septic tank on-site effluent treatment systems or AWTS's are likely to be exceeded, the use of temporary facilities such as port-a-loos should be arranged.

7 The discharge of effluent from new septic tank on-site effluent treatment systems or AWTS systems from any development which result in more than 4 dwellings on a property is a Discretionary Activity.

Explanation/Intent of Rule

To restrict the installation of septic tank effluent treatment systems within the Rotorua Lakes Catchments due to their potential to add significant loads of nitrogen to lakes and to have adverse effects on water quality. Bay of Plenty Regional Council strongly advocates that all new systems installed within the Rotorua Lakes Catchments are aerated wastewater treatment systems with nutrient reduction and are able to meet all permitted activity conditions identified in Rule 13.

Rule 5 Discretionary – Discharge of Treated Domestic Wastewater into Land from a Septic Tank On-Site Effluent Treatment System not otherwise permitted by a rule in this regional plan

The discharge of treated domestic wastewater into land from a septic tank on-site effluent treatment system that is not permitted by a rule in this regional plan shall be a **discretionary activity** subject to the following requirements:

1 If the location is subject to Policy 28, and unless mitigated by a financial contribution, a condition related to the constraints of the property and location and designed specifically to avoid, remedy or mitigate the discharge of contaminants and nutrients from the site, in particular nitrogen levels exceeding the 15 grams per cubic metre permitted baseline limit.

2 The application shall include a Schedule 5: **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'** completed by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

3 The design, installation and discharge quality of the on-site effluent treatment system proposed shall meet or exceed the requirements of:

a. This regional plan, in particular the provisions of Schedule 2,

b. NZS 1546.1:2008 'On-site domestic wastewater treatment units – Septic tanks' Sections 3 and 4,

c. NZS 1547:2012 'On-site domestic wastewater management', and

d. Section 9.4 of the Regional Water and Land Plan if the system is located in the catchment of a Rotorua lake.

4 A condition requiring a financial contribution may be used in accordance with Section 6 of this plan to avoid, remedy and mitigate all or part of the effects of contaminants and nutrients in the discharge.

5 If the dwelling is located in an Operating Reticulation Zone, the application shall be limited notified to the territorial local authority managing the sewerage reticulation system for the location.

6 A condition requiring that following installation of the system, the installer shall complete and provide to the Bay of Plenty Regional Council a Schedule 8 '**On-site Wastewater Completion of Works Installation Certificate**' verifying that all system components have been installed and tested, and operate in conformity with:

a. The requirements of this regional plan;

b. The relevant sections of the NZS 1547:2012 Standard;

c. The completed Schedule 5 'On-site Wastewater Disposal Site and Soil Evaluation Checklist' for the site and

d. The Schedule 7 'Manufacturers Engineering Design Producer Statement' for the system.

The Schedule 8 '**On-site Wastewater Completion of Works Installation Certificate'** shall also have attached any relevant District Council planning consent and regulatory authority approval(s) or Certificate(s) of Compliance. The report(s) shall be provided to the owner of the on-site system and to the Bay of Plenty Regional Council.

7 If an on-site effluent treatment system is located within a Maintenance Zone or within 200 metres from the lake edge landward (measured horizontally) of any of the Rotorua lakes then it shall have a condition requiring the same maintenance and performance inspection and OSET Approval programme required by Rule 3(f).

8 An application for resource consent to discharge treated effluent onto or into land under this rule shall be declined if:

1. The on-site effluent treatment system and the treated effluent from it cannot meet the NZS or the schedule requirements for the rule, or

2. The Resulting discharge will cause effects that cannot be safely and effectively avoided, remedied or mitigated (including by financial contribution).

Assessment Criteria

When assessing resource consent applications under this rule, Bay of Plenty Regional Council will have particular regard to, but not be limited to, the following provisions:

Objective 1, 2, 3, 4, 8, 9, 10

Policy 2, 4, 7, 8, 9, 12, 18, 19, 21, 24, 27, 28, 29, 30, 31, 32, 33, 34

Method 7, 11

Advisory Notes:

1 Details on information to be submitted with resource consent applications can be found in Section 7 of this plan.

2 The installation of a new Aerated Wastewater Treatment System with nitrogen reduction capability within the Rotorua Lakes Catchments may be a permitted activity under Rule 13.

3 Applications for resource consent involving the installation or use of a soak hole shall be considered with regard to the requirements of Rule 7.

4 In order to clean out a septic tank the middle lid needs to be lifted not the end lid. Septic tanks that have outlet filters installed must have easy access for cleaning, and be easily located and identifiable. It is advisable to install a man hole for access to septic tank on-site effluent treatment systems for ease of maintenance, where the lid is not at ground level.

Explanation/Intent of Rule

To allow Bay of Plenty Regional Council to assess the environmental effects of septic tank effluent treatment systems that are unable to meet the permitted activity conditions of Rules 1, 2 and 3.

Rule 6 Discretionary – Discharge of Treated Domestic Wastewater into Land from an Existing Septic Tank On-Site Effluent Treatment System Located in the Maintenance Zones of Ongare Point, Te Puna, Gisborne Point, Hinehopu, Rotoma, Tarawera, and the Catchment of Lake Rotoehu on specified dates.

The discharge of treated domestic wastewater into land from an existing septic tank on-site effluent treatment system located in the Maintenance Zones (Schedule 10) of:

(a) Ongare Point and Te Puna West after 1 December 2015,

(b) Gisborne Point, Hinehopu and Rotoma after 1 December 2016,

(c) Tarawera after 1 December 2017,

(d) the catchment of Lake Rotoehu after 1 December 2016.

is a **discretionary activity** subject to the following requirements:

1 If the location is subject to Policy 28, and unless mitigated by a financial contribution, a condition related to the constraints of the property and location and

designed specifically to avoid, remedy or mitigate the discharge of contaminants and nutrients from the site, in particular nitrogen levels exceeding the 15 grams per cubic metre permitted baseline limit.

2 The application shall include a Schedule 5: '**On-site Wastewater Disposal Site and Soil Evaluation Checklist**' completed by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

3 The design, installation and discharge quality of the on-site effluent treatment system proposed shall meet or exceed the requirements of:

a. This regional plan, in particular the provisions of Schedule 1,

b. NZS 1546.1:2008 *'On-site domestic wastewater treatment units – Septic tanks'* Sections 3 and 4,

c. NZS 1547:2012 *'On-site domestic wastewater management'*, and

d. Section 9.4 of the Regional Water and Land Plan

4 A condition requiring a financial contribution may be used in accordance with Section 6 of this plan to avoid, remedy and mitigate all or part of the effects of contaminants and nutrients in the discharge.

5 If the dwelling is located in a Reticulation Zone, the application shall be supported in writing by the territorial local authority managing the sewerage reticulation system for the location.

6 A condition requiring that following installation of the system, the installer shall complete and provide to the Bay of Plenty Regional Council a Schedule 8 '**On-site Wastewater Completion of Works Installation Certificate**' verifying that all system components have been installed and tested, and operate in conformity with:

a. The requirements of this regional plan;

b. The relevant sections of the NZS 1547:2012 Standard;

c. The completed Schedule 5 **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'** for the site and

d. The Schedule 7 **'Manufacturers Engineering Design Producer Statement'** for the system.

The Schedule 8 **'On-site Wastewater Completion of Works Installation Certificate'** shall also have attached any relevant District Council planning consent and regulatory authority approval(s) or Certificate(s) of Compliance. The report(s) shall be provided to the owner of the on-site system and to the Bay of Plenty Regional Council.

7 If an on-site effluent treatment system is located within a Maintenance Zone or within 200 metres from the lake edge landward (measured horizontally) of any of the Rotorua lakes then it shall have a condition requiring the same maintenance and performance inspection and OSET Approval programme required by Rule 3(g).

8 An application for resource consent to discharge treated effluent onto or into land under this rule shall be declined if:

1. The on-site effluent treatment system and the treated effluent from it cannot meet the NZS or the schedule requirements for the rule, or

2. The Resulting discharge will cause effects that cannot be safely and effectively avoided, remedied or mitigated (including by financial contribution).

Assessment Criteria

When assessing resource consent applications under this rule, Bay of Plenty Regional Council will have particular regard to, but not be limited to, the following provisions:

Objective 1, 2, 3, 4, 8, 9, 10

Policy 2, 4, 7, 8, 9, 12, 18, 19, 21, 24, 27, 28, 29, 30, 31, 32, 33, 34

Method 7, 11

Advisory Notes:

1 Discharges of treated wastewater into land from existing septic tank on-site effluent treatment systems in these communities only becomes a discretionary activity on the dates stated in Rule 6. Until these dates, discharges may be permitted under Rule 1, 2 or 3.

2 Details on information to be submitted with resource consent applications can be found in Section 7 of this plan.

3 The installation of new Aerated Wastewater Treatment Systems within the Rotorua Lakes Catchments may be a permitted activity under Rule 13.

4 Applications for resource consent involving the installation or use of a soak hole shall be considered with regard to the requirements of Rule 7.

5 In order to clean out a septic tank the middle lid needs to be lifted not the end lid. Septic tanks that have outlet solids filters installed must have easy access for cleaning, and be easily located and identifiable. It is advisable to install a man hole for access to septic tank on-site effluent treatment systems for ease of maintenance, where the lid is not at ground level.

6 The installation of a new Aerated Wastewater Treatment System with nitrogen reduction capability within the Rotorua Lakes Catchments may be a permitted activity under Rule 13.

7 The discharge of effluent from septic tank on-site effluent treatment systems or AWTS's servicing places of assembly where many people will regularly gather is a Discretionary Activity requiring resource consent. For example, this includes rural factories, camp grounds, schools, sports clubs and Marae. For one-off events where a crowd is expected and the capacities of the septic tank on-site effluent treatment systems or AWTS's are likely to be exceeded, the use of temporary facilities such as port-a-loos should be arranged.

8 The discharge of effluent from new septic tank on-site effluent treatment systems or AWTS systems from any development which result in more than 4 dwellings on a property is a Discretionary Activity.

Explanation/Intent of Rule

To discourage the use of septic tank effluent treatment systems in areas where degraded water quality is of particular concern. From the dates stated in Rule 6, existing septic tank effluent treatment systems in these communities will either need to be upgraded to aerated wastewater treatment systems (with those located within the Rotorua Lakes Catchments capable of nutrient reduction), or obtain resource consent from Bay of Plenty Regional Council to permit their ongoing use, or decommissioned and connected to a district council or approved community sewerage reticulation system.

Rule 7 Discretionary – Discharge of Treated Domestic Wastewater from an On-Site Effluent Treatment Systems to Soak Holes.

The discharge of domestic wastewater from an on-site effluent treatment system to a soak hole or soak holes constructed, installed or replaced after December 1996 is a **discretionary activity** subject to the following requirements:

1 The application shall be supported by an assessment by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design who can verify that there will be **no direct discharge from the soak hole into local surface or groundwater and that a land application system cannot be installed**.

2 A condition requiring that:

a. There shall not be any direct discharge of effluent from the soak hole into groundwater;

b. There shall not be less than 2 metres of soil between the base of the soak hole and the highest seasonal groundwater level (highest water table) at all times;

c. There shall not be discharge to surface water or overland flow from the soak hole at all times.

3 If the location is subject to Policy 28, and unless mitigated by a financial contribution, a condition related to the constraints of the property and location and designed specifically to avoid, remedy or mitigate the discharge of contaminants and nutrients from the site, in particular nitrogen levels exceeding the 15 grams per cubic metre permitted baseline limit.

4 The application shall be supported by a Schedule 5: **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'**. The evaluation checklist shall be completed by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

5 The design, installation and discharge quality of the on-site effluent treatment system proposed shall meet or exceed the requirements of:

a. This regional plan, in particular the provisions of Schedule 2,

b. NZS 1546.1:2008 *'On-site domestic wastewater treatment units – Septic tanks'* Sections 3 and 4,

c. NZS 1547:2012 *'On-site domestic wastewater management'*, and

d. Section 9.4 of the Regional Water and Land Plan if the system is located in the catchment of a Rotorua lake.

6 A condition requiring a financial contribution may be used in accordance with Section 6 of this plan to avoid, remedy and mitigate all or part of the effects of contaminants and nutrients in the discharge.

7 If the dwelling is located in a Reticulation Zone, the application shall be limited notified to the territorial local authority managing the sewerage reticulation system for the location.

8 A condition requiring that following installation of the system, the installer shall complete and provide to the Bay of Plenty Regional Council a Schedule 8 **'On-site Wastewater Completion of Works Installation Certificate'** verifying that all

system components have been installed and tested, and operate in conformity with:

a. The requirements of this regional plan;

b. The relevant sections of the NZS 1547:2012 Standard;

c. The completed Schedule 5 **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'** for the site and

d. The Schedule 7 **'Manufacturers Engineering Design Producer Statement'** for the system.

The Schedule 8 **'On-site Wastewater Completion of Works Installation Certificate'** shall also have attached any relevant District Council planning consent and regulatory authority approval(s) or Certificate(s) of Compliance. The report(s) shall be provided to the owner of the on-site system and to the Bay of Plenty Regional Council.

9 If an on-site effluent treatment system is located within a Maintenance Zone or within 200 metres from the lake edge landward (measured horizontally) of any of the Rotorua lakes then it shall have a condition requiring the same maintenance and performance inspection and OSET Approval programme required by Rule 3(g).

10 An application for resource consent to discharge treated effluent onto or into land under this rule shall be declined if:

1. The on-site effluent treatment system and the treated effluent from it cannot meet the NZS or the schedule requirements for the rule, or

2. The Resulting discharge will cause effects that cannot be safely and effectively avoided, remedied or mitigated (including by financial contribution).

Assessment Criteria

When assessing resource consent applications under this rule, Bay of Plenty Regional Council will have particular regard to, but not be limited to, the following provisions:

Objective 1, 2, 3, 4, 8, 9, 10

Policy 2, 3, 4, 7, 8, 9, 12, 18, 19, 21, 24, 27, 28, 29, 30, 31, 32, 33, 34

Method 7, 11

Advisory Notes:

1 Details on information to be submitted with resource consent applications can be found in Section 7 of this plan.

2 Under Policy 3, it is the intention of Bay of Plenty Regional Council to phase out the use of soak holes as a form of disposal of primary treated effluent in those areas where such systems do not constitute the best practicable option. The use of a soak hole after 1 December 1996 should therefore only be authorised if a land application system that meets the standards of this regional plan cannot be installed at the property.

3 Note that under Rules 1(e) and 2(i) the discharge of primary treated effluent from a septic tank into a soak hole constructed, installed or replaced before 1 December 1996 may be permitted if:

(i) The septic tank connected to the soak hole has been installed and maintained to the standards required by this regional plan at all times;
(ii) There is no direct discharge of effluent from the soak hole into groundwater;
(iii) There is not less than 2 metres between the base of the soak hole and the highest seasonal groundwater level (highest water table) at all times;
(i) There is no discharge to surface water or overland flow from the soak hole at all times.

Explanation/Intent of Rule

To ensure that the use of a soak hole as a form of disposal of primary treated effluent is only authorised after a thorough assessment of environmental effects has proven that there will be no direct discharge from the soak hole into local surface or groundwater and that other best practice options such as a land application system cannot be installed.

The intention of Rule 7 is that existing soak holes that fail will be replaced with on-site effluent treatment systems that incorporate a land application system that meet the requirements of plan standards, so that in the longer term the use of soak holes is phased out altogether in accordance with Policy 3 of the regional plan.

Rule 8 Prohibited – Use of Explosives

The use of explosives to maintain soak hole infiltration for wastewater from and on-site effluent treatment system is a **prohibited activity.**

Explanation/Intent of Rule

To prohibit the use of explosives to maintain soak hole infiltration. This activity is known to cause or potentially cause significant adverse environmental effects on water quality (especially groundwater) and the environment that are often difficult to predict.

Rule 9 Discretionary – Discharge of Treated Domestic Wastewater into Land from a Septic Tank On-Site Effluent Treatment System located in the Tauranga City Urban Area

The discharge of treated wastewater into land from a septic tank on-site effluent treatment system within the Tauranga City Urban Area is a **discretionary activity** subject to the following requirements:

1 The application shall be limited notified to the Tauranga City Council.

2 The application shall include a Schedule 5: **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'** completed by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

3 The design, installation and discharge quality of the on-site effluent treatment system proposed shall meet or exceed the requirements of:

a. This regional plan, in particular the provisions of Schedule 2,

b. NZS 1546.1:2008 *'On-site domestic wastewater treatment units – Septic tanks'* Sections 3 and 4,

c. NZS 1547:2012 *'On-site domestic wastewater management'*.

4 A condition requiring a financial contribution may be used in accordance with Section 6 of this plan to avoid, remedy and mitigate all or part of the effects of contaminants and nutrients in the discharge.

5 If the dwelling is located in a Reticulation Zone, the application shall be limited notified to the Tauranga City Council.

6 A condition requiring that following installation of the system, the installer shall complete and provide to the Bay of Plenty Regional Council a Schedule 8 **'On-site Wastewater Completion of Works Installation Certificate'** verifying that all system components have been installed and tested, and operate in conformity with:

a. The requirements of this regional plan;

b. The relevant sections of the NZS 1547:2012 Standard;

c. The completed Schedule 5 **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'** for the site, and

d. The Schedule 7 '**Manufacturers Engineering Design Producer Statement**' for the system.

The Schedule 8 **'On-site Wastewater Completion of Works Installation Certificate'** shall also have attached any relevant Tauranga City Council planning consent and regulatory authority approval(s) or Certificate(s) of Compliance. The report(s) shall be provided to the owner of the on-site system and to the Bay of Plenty Regional Council.

7 An application for resource consent to discharge treated effluent onto or into land under this rule shall be declined if:

1. The on-site effluent treatment system and the treated effluent from it cannot meet the NZS or the schedule requirements for the rule, or

2. The Resulting discharge will cause effects that cannot be safely and effectively avoided, remedied or mitigated (including by financial contribution).

Assessment Criteria

When assessing resource consent applications under this rule, Bay of Plenty Regional Council will have particular regard to, but not be limited to, the following provisions:

Objective 1, 2, 3, 4, 9, 10

Policy 2, 4, 7, 8, 9, 12, 18, 19, 21, 24, 29, 31, 32, 33, 34

Method 7, 11

Advisory Note:

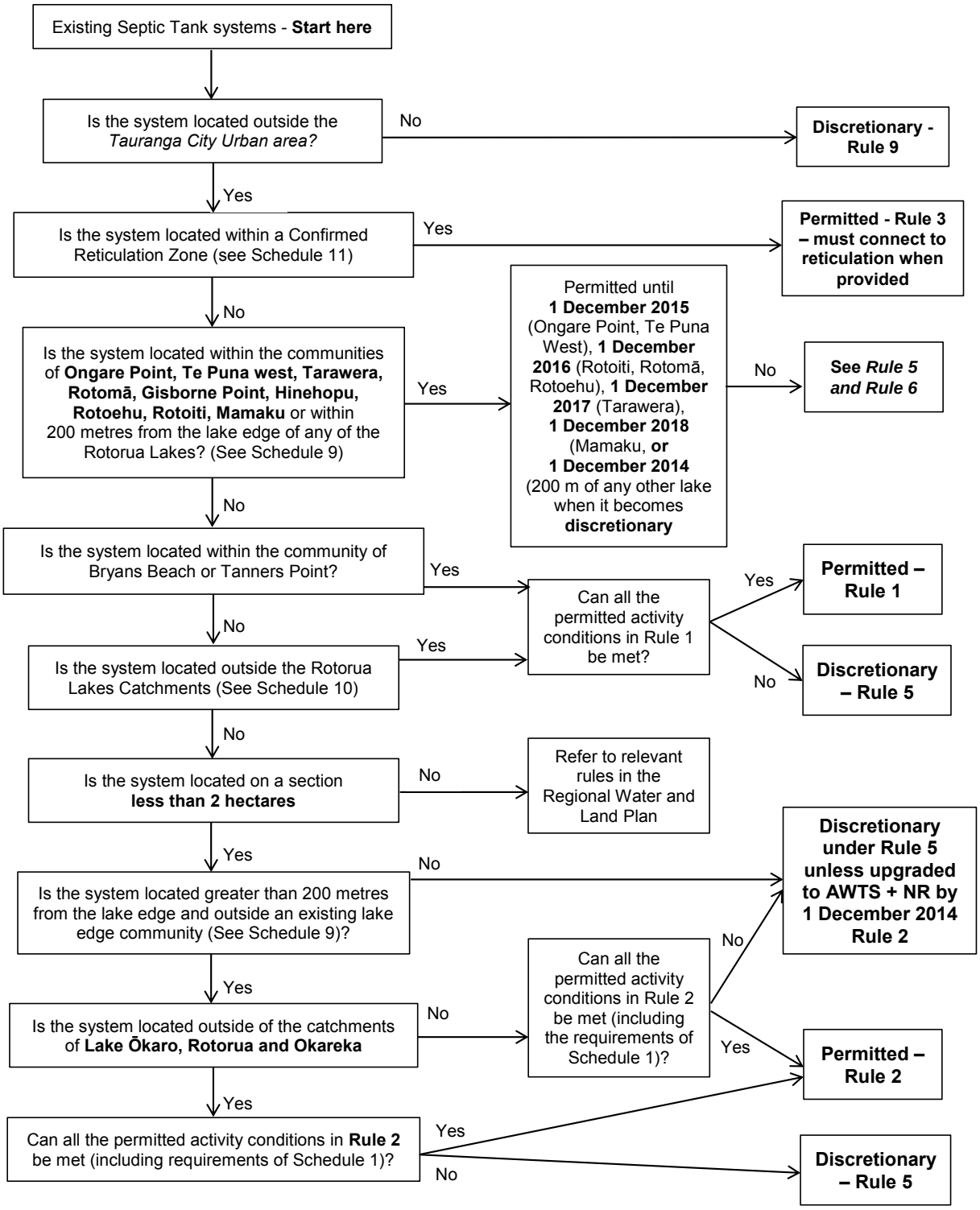
1 Details on information to be submitted with resource consent applications can be found in Section 7 of this plan.

2 Applications for resource consent involving the installation or use of a soak hole shall be considered with regard to the requirements of Rule 7.

Explanation/Intent of Rule

To allow Bay of Plenty Regional Council to assess the effects of discharging from septic tank effluent treatment systems that are located within urban zoned areas of the Tauranga City Council boundary.

Flow Diagram 1 Existing Septic Tank On-Site Effluent Treatment Systems

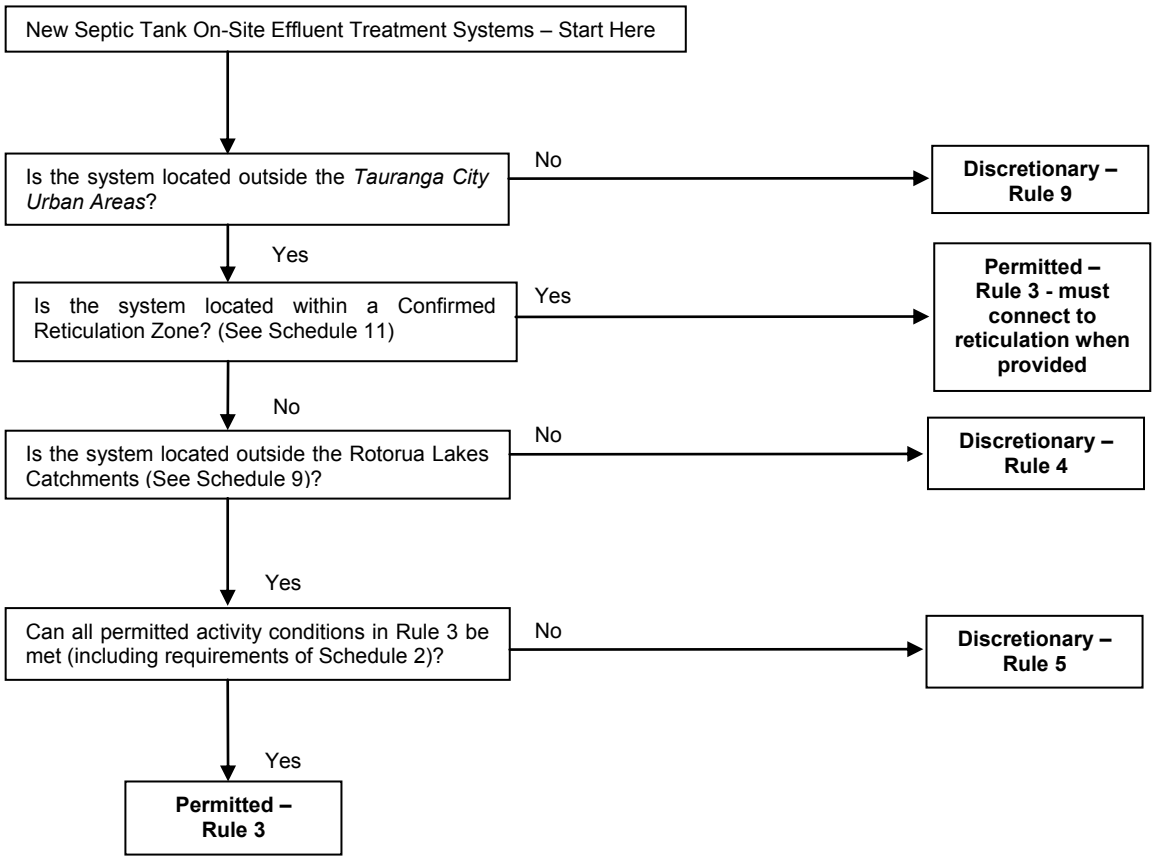


Advisory Note:

1 This flow diagram is to assist working out which rules apply but does not constitute a part of the rules. If there is any inconsistency between the flow diagram and the rules in the plan it refers to, the criteria in the rules prevail.

2 Properties identified in an Operating Reticulation Zone (Schedule 11) are required to connect to reticulation.

Flow Diagram 2 New Conventional Septic Tank On-Site Effluent Treatment Systems



Advisory Note:

1 This flow diagram is to assist working out which rules apply but does not constitute a part of the rules. If there is any inconsistency between the flow diagram and the rules in the plan it refers to, the criteria in the rules prevail.

2 Properties identified in an Operating Reticulation Zone (Schedule 11) are required to connect to reticulation.

5.3 Aerated Wastewater Treatment Systems

Rule 10 Permitted – Discharge of Treated Domestic Wastewater into Land from an Existing Aerated Wastewater Treatment System Located outside of the Rotorua Lakes Catchments, outside the urban zoned areas Tauranga City Urban Area and outside a Reticulation Zone.

The discharge of treated domestic wastewater into land from an existing Aerated Wastewater Treatment System located:

1 outside of the Rotorua Lakes Catchments, and

2 outside the Tauranga City Urban Area, and

3 outside a Reticulation Zone defined in Schedule 11 that was installed and commissioned before 1 December 2012 is a **permitted activity** subject to the following conditions:

(a) The maximum discharge does not exceed 2 cubic metres per day;

(b) The site for the system is not subject to slippage, subsidence, erosion or inundation from any source;

(c) The land application area is located not less than 20 metres from any drinking water bore and 20 metres from any surface water;

(d) The system shall comply with the requirements set out in Schedule 3.

(e) The wastewater flow receives advanced aerated treatment such to ensure that the effluent quality is a maximum of 30 grams per cubic metre of BOD5 Biological Oxygen Demand (BOD5) and 45 grams per cubic metre of suspended solids Total Suspended Solids (TSS) prior to discharge to the dispersal system land application system;

(f) Secondary treated wastewater shall be applied by sub-surface irrigation at a rate not exceeding 5 litres per square metre per day;

(g) Irrigation lines emitters used for the dispersal of treated wastewater shall be installed either:

(i) beneath the surface of the soil between 100 millimetres – 200 millimetres; or

(ii) on the surface of the soil and covered by an inert material (e.g. bark), or an appropriate alternative, to a minimum depth of 100 millimetres; or

(iii) the irrigation lines shall be installed in accordance with the manufacturer's recommendations.

(h) Subject to condition (g) above, the horizontal separation distance between irrigation lines emitters shall be set to ensure that an even distribution of treated wastewater to the ground occurs;

(i) There shall be no overland flow or surface ponding as a result of the discharge of the wastewater;

(j) There is no land application by surface irrigation or any method which may produce any aerosol discharge into air;

(k) Subject to condition (e) above, the pre-treatment and dispersal system shall be operated and maintained in accordance with the manufacturer's design specification for effluent quality including regular desludging;

(l) A written record of all servicing and maintenance carried out on the wastewater treatment system shall be kept and a copy of this record shall be forwarded to Bay of Plenty Regional Council within 90 days of a service or maintenance check required by condition (k) above;

(m) The Aerated Wastewater Treatment System shall be operated in accordance with the manufacturers' guidelines and maintained at the intervals specified by the manufacturer.

Advisory Note:

1 Refer to Flow Diagram 3 to assist reading of this rule. Please note that the flow diagram is to assist working out which rules apply but does not constitute a part of the rules. If there is any inconsistency between the flow diagram and the rules in the plan it refers to, the criteria in the rules prevail.

2 The discharge of effluent from septic tank on-site effluent treatment systems or AWTS's servicing places of assembly where many people will regularly gather is a Discretionary Activity requiring resource consent. For example, this includes rural factories, camp grounds, schools, sports clubs and Marae. For one-off events where a crowd is expected and the capacities of the septic tank on-site effluent treatment systems or AWTS's are likely to be exceeded, the use of temporary facilities such as port-a-loos should be arranged.

3 The discharge of effluent from new septic tank on-site effluent treatment systems or AWTS systems from any development which result in more than 4 dwellings on a property is a Discretionary Activity.

Explanation/Intent of Rule

This rule contains a number of conditions that aerated wastewater treatment systems must meet in order for them to be permitted. These conditions include design aspects, as well as maintenance and certification requirements. The conditions are to avoid, remedy or mitigate adverse environmental effects.

Rule 11 Permitted – Discharge of Treated Domestic Wastewater into Land from an Existing Aerated Wastewater Treatment System Located within the Rotorua Lakes Catchments and outside a Reticulation Zone.

The discharge of treated domestic wastewater into land from an existing Aerated Wastewater Treatment System located within the Rotorua Lakes Catchments and outside an Operating Reticulation Zone defined in Schedule 11, that was installed and commissioned before 1 December 2012 is a permitted activity subject to the following conditions:

(a) The maximum discharge does not exceed 2 cubic metres per day;

(b) The site for the system is not subject to slippage, subsidence, erosion or inundation from any source;

(c) The land application area is located not less than 20 metres from any drinking water bore and 20 metres from any surface water;

(d) The system shall comply with the requirements set out in Schedule 3;

(e) The wastewater flow receives treatment to ensure that the effluent quality is a maximum of 30 grams per cubic metre of (Biological Oxygen Demand BOD_5) and 45 grams per cubic metre of Total Suspended Solids (TSS) prior to discharge to the land application system;

(f) All Aerated Wastewater Treatment Systems that are located within **200 metres** from the lake edge landward (measured horizontally) (See the map in Schedule 9) that are not connected to a Rotorua District Council or approved community sewerage reticulation system, must, by **1 December** 2014, be capable, after a settling in period, of reducing the total nitrogen (TN) in the discharge, to a concentration not exceeding 15 grams per cubic metre, measured as nitrogen, prior to discharge to the land application system. The Aerated Wastewater Treatment System must be approved by Bay of Plenty Regional Council.

(g) All Aerated Wastewater Treatment Systems that are located within the catchments of **Lakes Rotoiti, Rotoehu, Okaro, Rotorua** and **Okareka** within a property title having a land area of 2 hectares or less where there is one or more systems within that property title must, by the following dates, be capable, after a settling in period, of reducing the total nitrogen (TN) in the discharge, to a concentration not exceeding 15 grams per cubic metre, measured as nitrogen, prior to discharge to the land application system. The Aerated Wastewater Treatment System must be approved by Bay of Plenty Regional Council:

a. Lakes Okaro, Rotorua (except the sewerage reticulated area of Mamaku township) and Okareka; 1 December 2014;

b. The sewerage reticulated area of Mamaku township shown on Map 18 of Schedule 10; 1 December 2018;

c. Lakes Rotoehu and Rotoiti; 1 December 2016.

(h) For the purpose of Rule 11 conditions (f) and (g), a settling in period shall not exceed six months from the date on which the system is first commissioned.

(i) Secondary treated wastewater shall be applied by sub-surface irrigation at a rate not exceeding 5 litres per square metre per day;

(i) irrigation lines emitters used for the dispersal of treated wastewater shall be installed either:

(ii) beneath the surface of the soil between 100 millimetres – 200 millimetres; or

(iii) on the surface of the soil and covered by an inert material (e.g. bark), or an appropriate alternative, to a minimum depth of 100 millimetres;

(iv) The irrigation lines shall be installed in accordance with the manufacturers recommendations.

(j) Subject to condition (i) above, the horizontal separation distance between irrigation lines emitters shall be set to ensure that an even distribution of treated wastewater to the ground occurs.

(k) There is no overland flow or surface ponding as a result of the discharge of the wastewater,

(l) There is no land application by surface irrigation or any method which may produce any aerosol discharge into air;

(m) Subject to condition (e) above, the pre-treatment and dispersal system shall be operated and maintained in accordance with the manufacturer's design specification for effluent quality including regular desludging;

(n) A written record of all servicing and maintenance carried out on the wastewater treatment system shall be kept and a copy of this record shall be forwarded to Bay of Plenty Regional Council within 90 days of a service or maintenance check required by condition (m) above.

(o) The Aerated Wastewater Treatment System shall be operated in accordance with the manufacturers' guidelines and maintained at the intervals specified by the manufacturer;

(p) The Aerated Wastewater Treatment System shall be operated in accordance with the manufacturers' guidelines and maintained at the intervals specified by the manufacturer.

Advisory Note:

1 Refer to Flow Diagram 3 to assist reading of this rule. Please note that the flow diagram is to assist working out which rules apply but does not constitute a part of the rules. If there is any inconsistency between the flow diagram and the rules in the regional plan it refers to, the criteria in the rules prevail.

2 'Property title' is defined in Definition of Terms.

3 Bay of Plenty Regional Council has information on aerated wastewater treatment systems that comply with the discharge requirements of the regional plan. Please contact Bay of Plenty Regional Council for a listing of approved systems.

4 Policy 31 applies to effluent discharge from properties in a Reticulation Zone. Within an Operating Reticulation Zone the permitted activity authorisation for a property under this rule will cease on the date that connection to the sewerage reticulation system at the property boundary and connection to the reticulation system can be completed. Operating Reticulation Zone maps are shown in Schedule 11.

5 The discharge of effluent from septic tank on-site effluent treatment systems or AWTS's servicing places of assembly where many people will regularly gather is a Discretionary Activity requiring resource consent. For example, this includes rural factories, camp grounds, schools, sports clubs and Marae. For one-off events where a crowd is expected and the capacities of the septic tank on-site effluent treatment systems or AWTS's are likely to be exceeded, the use of temporary facilities such as port-a-loos should be arranged.

6 The discharge of effluent from new septic tank on-site effluent treatment systems or AWTS systems from any development which result in more than 4 dwellings on a property is a Discretionary Activity.

Explanation/Intent of Rule

This rule contains a number of conditions that Aerated Wastewater Treatment Systems must meet in order for them to be permitted. These conditions include design aspects, as well as maintenance and certification requirements. The conditions are to avoid, remedy or mitigate adverse environmental effects.

This Rule also includes specific circumstances and locations whereby existing Aerated Wastewater Treatment Systems must have nutrient reducing capabilities by 1 December **2013 2014 for Lakes Okaro, Rotorua and Okareka,** 1 December **2016 for Lakes Rotoehu, and Rotoiti,** 1 December **2018 for the area of Mamaku Township** to be reticulated. These are:

- Systems located near the lakeshore: There is greater potential for adverse effects on a lake from wastewater discharges near the lakeshore than those further away. The rule specifies systems located within 200 metres or within existing lakeshore communities.

- The catchments of Lakes **Rotoiti, Rotoehu, Okaro, Rotorua** and **Okareka** are identified in the Regional Water and Land Plan as currently exceeding their Trophic Level Index (TLI). There is greater potential for adverse effects on a lake where there are many on-site effluent treatment systems in close proximity to each other (clustered together), than where there are isolated systems on large properties. For this reason, Rule 11 requires nutrient reducing capabilities in these catchments where there is a density of one or more systems per property title area of 2 hectares or less.

New aerated wastewater treatment systems require time to build up populations of certain bacteria needed to achieve nitrogen reduction to the standard set by the regional plan. This period will also provide time to correct any technical malfunctions. The settling in

period may vary, however it is expected that an efficient system will achieve the standard within a few months.

Rule 12 Permitted – Discharge of Treated Domestic Wastewater into Land from a new Aerated Wastewater Treatment System Located outside the Rotorua Lakes Catchments, Tauranga Urban Area and outside a Reticulation Zone

The discharge of up to 2 cubic metres per day of treated domestic wastewater from:

1 A single dwelling on a property where the site contains a land application area that meets the requirements of NZS 1547:2012 and Schedule 6 of this regional plan for potential occupancy of the dwelling or

2 Up to 4 dwellings on a single property provided each dwelling meets the requirements of NZS 1547:2012 and Schedule 6 of this regional plan for potential occupancy of the dwelling and has its own individual, associated and adjacent land application area of not less than 1200 m^2 or

3 Ablution facilities at exchanges or substations owned by a network utility operator or

4 A rural business where there is not residential activity, a maximum of four persons are employed and the premises are not an eating-house, café or food factory

into land from a new Aerated Wastewater Treatment System located:

(i) outside of the Rotorua Lakes Catchments, and

(ii) outside the Tauranga City Urban Area, and

(iii) outside a Reticulation Zone defined in Schedule 11.

is a **permitted activity** subject to the following conditions:

(a) The maximum discharge does not exceed 2 cubic metres per day;

(b) The site for the system is not subject to slippage, subsidence, erosion or inundation from any source;

(c) The land application area is located not less than 20 metres from any drinking water bore and 20 metres from any surface water;

(d) The system design, construction and performance shall comply with the requirements of NZS 1546.3:2008 On-site domestic wastewater treatment units – Aerated Wastewater Treatment Systems and NZS 1547:2012 On-site domestic wastewater management and the provisions of Schedule 4. The design shall be supported by a completed **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'**; see Schedule 5. The evaluation checklist shall be completed by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

(e) The wastewater flow receives treatment to ensure that the effluent quality is a maximum of 30 grams per cubic metre of Biological Oxygen Demand (BOD_5) and 45 grams per cubic metre of Total Suspended Solids (TSS) prior to discharge to the land application system;

(f) Secondary treated wastewater shall be applied by sub-surface irrigation at a rate not exceeding 5 litres per square metre per day except for category 7 soils which shall not exceed 3 litres per square metre per day;

(g) Irrigation lines emitters used for the dispersal of treated wastewater shall be installed either:

(i) beneath the surface of the soil between 100 millimetres – 200 millimetres; or

(ii) on the surface of the soil and covered by an inert material (e.g. bark), or an appropriate alternative, to a minimum depth of 100 millimetres;

(iii) The irrigation lines shall be installed in accordance with the manufacturers recommendations.

(h) Subject to condition (g) above, the horizontal separation distance between irrigation lines emitters shall be set to ensure that an even distribution of treated wastewater to the ground occurs;

(i) There is no overland flow or surface ponding as a result of the discharge of the wastewater;

(j) There is no land application by surface irrigation or any method which may produce any aerosol discharge into air;

(k) Subject to condition (e) above, the pre-treatment and dispersal system shall be operated and maintained in accordance with the manufacturer's design specification for effluent quality including regular desludging;

(l) A written record of all servicing and maintenance carried out on the wastewater treatment system shall be kept and a copy of this record shall be forwarded to Bay of Plenty Regional Council within 90 days of a service or maintenance check required by condition (k) above;

(m) The designer of the system shall supply Bay of Plenty Regional Council with a **Manufacturers Engineering Design Producer Statement** as set out in Schedule 7. This statement will cover all the matters set out in Section 3.4 of NZS 1547:2012.

(n) The Aerated Wastewater Treatment System shall have been tested and approved by the On-site Effluent Treatment National Testing Programme (OSET NTP) or an accredited testing facility. Only those systems which have passed the test regime shall be installed.

(o) The installer of the system shall supply Bay of Plenty Regional Council with a Schedule 8 **'On-site Wastewater Completion of Works Installation Certificate'**. This certificate will cover all the matters set out in Section 3.5 of NZS 1547:2012.

(p) The Aerated Wastewater Treatment System shall be operated in accordance with the manufacturers' requirements and maintained in accordance with the servicing schedule and clients maintenance duties specified in the Schedule 8 **'On-site Wastewater Completion of Works Installation Certificate'** for the system.

Advisory Note:

1 Refer to Flow Diagram 4 to assist reading of this rule. Please note that the flow diagram is to assist working out which rules apply but does not constitute a part of the rules. If there is any inconsistency between the flow diagram and the rules in the plan it refers to, the criteria in the rules prevail.

2 Note that to comply with condition (d), your OSET system design must be supported by a completed Schedule 5 **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'**. The evaluation checklist must be completed by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

3 Policy 31 applies to effluent discharge from properties in a Reticulation Zone. Within an Operating Reticulation Zone the permitted activity authorisation for a property under this rule will cease on the date that connection to the sewerage reticulation system at the property boundary and connection to the reticulation system can be completed. Operating Reticulation Zone maps are shown in Schedule 11.

4 The discharge of effluent from septic tank on-site effluent treatment systems or AWTS's servicing places of assembly where many people will regularly gather is a Discretionary Activity requiring resource consent. For example, this includes rural factories, camp grounds, schools, sports clubs and Marae. For one-off events

where a crowd is expected and the capacities of the septic tank on-site effluent treatment systems or AWTS's are likely to be exceeded, the use of temporary facilities such as port-a-loos should be arranged.

5 The discharge of effluent from new septic tank on-site effluent treatment systems or AWTS systems from any development which result in more than 4 dwellings on a property is a Discretionary Activity.

Explanation/Intent of Rule

This rule contains a number of conditions that Aerated Wastewater Treatment Systems must meet in order for them to be permitted. These conditions include design aspects, as well as maintenance and certification requirements. The conditions are to avoid, remedy or mitigate adverse environmental effects.

Rule 13 Permitted – Discharge of Treated Domestic Wastewater into Land from new Aerated Wastewater Treatment System Located within the Rotorua Lakes Catchments and outside a Reticulation Zone.

The discharge of up to 2 cubic metres per day of treated domestic wastewater from:

1 A single dwelling on a property where the site contains a land application area that meets the requirements of NZS 1547:2012 and Schedule 6 of this regional plan for potential occupancy of the dwelling, or

2 Up to 4 dwellings on a single property provided each dwelling meets the requirements of NZS 1547:2012 and Schedule 6 of this regional plan for potential occupancy of the dwelling and has its own individual, associated and adjacent land application area of not less than 1200 m2, or

3 Ablution facilities at exchanges or substations owned by a network utility operator, or

4 A rural business where there is not residential activity, a maximum of four persons are employed and the premises are not an eating-house, café or food factory

into land from a new Aerated Wastewater Treatment System located within the Rotorua Lakes Catchments and outside an Operating Reticulation Zone is a **permitted activity** provided that the following conditions are met:

(a) The maximum discharge does not exceed 2 cubic metres per day;

(b) The site for the system is not subject to slippage, subsidence, erosion or inundation from any source;

(c) The land application area is located not less than 20 metres from any drinking water bore and 20 metres from any surface water;

(d) The system design, construction and performance shall comply with the requirements of NZS 1546.3:2008 *'On-site domestic wastewater treatment units – Aerated Wastewater Treatment Systems*' and NZS 1547:2012 *'On-site domestic wastewater management*' and the provisions of Schedule 4. The design shall be supported by a completed Schedule 5 **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'**. The evaluation checklist shall be completed by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

(e) The Aerated Wastewater Treatment System shall be of a design that has been approved by Bay of Plenty Regional Council to ensure that after a settling in period, the effluent quality does not exceed:

- 30 grams per cubic metre of Biological Oxygen Demand (BOD_5), an

- 45 grams per cubic metre of Total Suspended Solids (TSS), and
- a Total Nitrogen (TN) level of 15 grams per cubic metre, measured as nitrogen.

prior to discharge to the land application system.

(f) Secondary treated wastewater shall be applied by sub-surface irrigation at a rate not exceeding 5 litres per square metre per day except for category 7 soils which shall not exceed 3 litres per square metre per day;

(g) Irrigation line emitters used for the dispersal of treated wastewater shall be installed either:

(i) beneath the surface of the soil between 100 millimetres – 200 millimetres; or

(ii) on the surface of the soil and covered by an inert material (e.g. bark), or an appropriate alternative, to a minimum depth of 100 millimetres;

(iii) The irrigation lines shall be installed in accordance with the manufacturers' recommendations.

(h) Subject to condition (g) above, the horizontal separation distance between irrigation lines emitters shall be set to ensure that an even distribution of treated wastewater to the ground occurs;

(i) There is no overland flow or surface ponding as a result of the discharge of the wastewater;

(j) There is no land application by surface irrigation or any method which may produce any aerosol discharge into air;

(k) Subject to condition (e) above, the pre-treatment and dispersal system shall be operated and maintained in accordance with the manufacturer's design specification for effluent quality including regular desludging;

(l) A written record of all servicing and maintenance carried out on the wastewater treatment system shall be kept and a copy of this record shall be forwarded to Bay of Plenty Regional Council within 90 days of a service or maintenance check required by condition (k) above;

(m) The designer of the system shall supply Bay of Plenty Regional Council with a Schedule 7 **Manufacturers Engineering Design Producer Statement**. This statement will cover all the matters set out in Section 3.4 of NZS 1547:2012.

(n) The Aerated Wastewater Treatment System shall have been tested and approved by the On-site Effluent Treatment National Testing Programme (OSET NTP) or an accredited testing facility. Only those systems which have passed the test regime shall be installed.

(o) The installer of the system shall supply Bay of Plenty Regional Council with a Schedule 8 'On-site Wastewater Completion of Works Installation Certificate'. This certificate will cover all the matters set out in Section 3.5 of NZS 1547:2012.

(p) The Aerated Wastewater Treatment System shall be operated in accordance with the manufacturer's requirements and maintained in accordance with the servicing schedule and clients maintenance duties specified in the Schedule 8 **'On-site Wastewater Completion of Works Installation Certificate'** for the system.

Advisory Note:

1 Refer to Flow Diagram 4 to assist reading of this rule. Please note that the flow diagram is to assist working out which rules apply but does not constitute a part of the rules. If there is any inconsistency between the flow diagram and the rules in the plan it refers to, the criteria in the rules prevail.

2 Bay of Plenty Regional Council has information on advanced on-site effluent treatment systems aerated wastewater treatment systems that comply with the discharge requirements of the plan. Please contact Bay of Plenty Regional Council for a listing of approved systems.

3 Bay of Plenty Regional Council recommends that at the time of selecting, and prior to installing an aerated wastewater treatment system, the owner secure from the manufacturer the certificate of performance required under Rule conditions 13(m) and 13(n).

4 Note that to comply with condition (d), your OSET system design must be supported by a completed Schedule 5(d) **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'**. The evaluation checklist must be completed by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

5 Policy 31 applies to effluent discharge from properties in a Reticulation Zone. Within an Operating Reticulation Zone the permitted activity authorisation for a property under this rule will cease on the date that connection to the sewerage reticulation system at the property boundary and connection to the reticulation system can be completed. Operating Reticulation Zone maps are shown in Schedule 11.

6 The discharge of effluent from septic tank on-site effluent treatment systems or AWTS's servicing places of assembly where many people will regularly gather is a Discretionary Activity requiring resource consent. For example, this includes rural factories, camp grounds, schools, sports clubs and Marae. For one-off events where a crowd is expected and the capacities of the septic tank on-site effluent treatment systems or AWTS's are likely to be exceeded, the use of temporary facilities such as port-a-loos should be arranged.

7 The discharge of effluent from new septic tank on-site effluent treatment systems or AWTS systems from any development which result in more than 4 dwellings on a property is a Discretionary Activity.

Explanation/Intent of Rule

This rule contains a number of conditions that Aerated Wastewater Treatment Systems must meet in order for them to be permitted. These conditions include design aspects, as well as maintenance and certification requirements. In addition to these basic requirements, all new systems installed within the Rotorua Lakes Catchments must also be capable of a specified total nitrogen level of 15 grams per cubic metre. These conditions are to avoid, remedy or mitigate adverse environmental effects and particularly in the Rotorua Lakes where water quality is deteriorating in a number of the lakes and nitrogen loading from wastewater discharges is thought to be having a significant effect on water quality.

New Aerated Wastewater Treatment Systems require time to build up populations of certain bacteria needed to achieve nitrogen reduction to the standard set by the plan. This period will also provide time to correct any technical malfunctions. The settling in period may vary, however it is expected that an efficient system will achieve the standard within a few months.

Rule 14 Discretionary – Discharge of Treated Domestic Wastewater to Land from an Aerated Wastewater Treatment System not otherwise permitted.

The discharge of treated domestic wastewater to land from an Aerated Waste Water Treatment System that is not permitted by a rule in this regional plan is a **discretionary activity** subject to the following requirements:

1 If the location is subject to Policy 28, and unless mitigated by a financial contribution, a condition related to the constraints of the property and location and designed specifically to avoid, remedy or mitigate the discharge of contaminants and nutrients from the site, in particular nitrogen levels exceeding the 15 grams per cubic metre permitted baseline limit.

2 The application shall include a Schedule 5: '**On-site Wastewater Disposal Site and Soil Evaluation Checklist**' completed by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

3 The design, installation and discharge quality of the on-site effluent treatment system proposed shall meet or exceed the requirements of:

a. This regional plan, in particular the provisions of Schedule 4,

b. NZS 1546.1:2008, Parts 3 and 4 *'On-site domestic wastewater treatment units – Septic tanks'*,

c. NZS 1547:2012 *'On-site domestic wastewater management'*, and

d. Section 9.4 of the Regional Water and Land Plan if the system is located in the catchment of a Rotorua lake.

4 A condition requiring a financial contribution may be used in accordance with Section 6 of this plan to avoid, remedy and mitigate all or part of the effects of contaminants and nutrients in the discharge.

5 If the dwelling is located in an Operating Reticulation Zone, the application shall be supported in writing by the territorial local authority managing the sewerage reticulation system for the location.

6 A condition requiring that following installation of the system, the installer shall complete and provide to the Bay of Plenty Regional Council a Schedule 8 '**On-site Wastewater Completion of Works Installation Certificate**' verifying that all system components have been installed and tested, and operate in conformity with:

a. The requirements of this regional plan;

b. The relevant sections of the NZS 1547:2012 Standard;

c. The completed Schedule 5 **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'** for the site and

d. The Schedule 7 **'Manufacturers Engineering Design Producer Statement'** for the system.

The Schedule 8 '**On-site Wastewater Completion of Works Installation Certificate'** shall also have attached any relevant District Council planning consent and regulatory authority approval(s) or Certificate(s) of Compliance. The report(s) shall be provided to the owner of the on-site system and to the Bay of Plenty Regional Council.

7 The Aerated Wastewater Treatment System shall be operated in accordance with the manufacturers' requirements and maintained in accordance with the servicing schedule and clients maintenance duties specified in the Schedule 8 'On-site Wastewater Completion of Works Installation Certificate' for the system.

8 An application for resource consent to discharge treated effluent onto or into land under this rule shall be declined if:

1 The on-site effluent treatment system and the treated effluent from it cannot meet the NZS or the schedule requirements for the rule, or

2 The Resulting discharge will cause effects that cannot be safely and effectively avoided, remedied or mitigated (including by financial contribution).

Assessment Criteria

When assessing resource consent applications under this rule, Bay of Plenty Regional Council will have particular regard to, but not be limited to, the following provisions:

Objective 1, 2, 3, 4, 8, 9, 10

Policy 2, 4, 7, 8, 9, 12, 18, 19, 21, 24, 27, 28, 29, 30, 31, 32, 33, 34

Method 7, 11

Advisory Notes

1 Details on information to be submitted with resource consent applications can be found in Section 7 of this plan.

2 On-Site Effluent Treatment Regional Plan On-Site Effluent Treatment Regional Plan The installation of a new Aerated Wastewater Treatment System with nitrogen reduction capability within the Rotorua Lakes Catchments may be a permitted activity under Rule 13.

Explanation/Intent of Rule

To allow Bay of Plenty Regional Council to assess the environmental effects of Aerated Waste Water Treatment Systems that are unable to meet the permitted activity conditions of a rule in this regional plan.

Rule 15 Discretionary – Discharge of Treated Domestic Wastewater to Land from Aerated Wastewater Treatment Systems located within the Tauranga City Urban Area

The discharge of treated domestic wastewater to land from an Aerated Waste Water Treatment System within the Tauranga City Urban Area which was installed after 6 December 2002 is a **discretionary activity** subject to the following requirements:

1 The application shall include a Schedule 5: **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'** completed by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

2 The design, installation and discharge quality of the on-site effluent treatment system proposed shall meet or exceed the requirements of:

a. This regional plan, in particular the provisions of Schedule 4,

b. NZS 1546.1:2008, Parts 3 and 4 'On-site domestic wastewater treatment units – Septic tanks',

c. NZS 1547:2012 'On-site domestic wastewater management'.

3 Resource consent may be granted subject to a financial contribution paid by the applicant to Bay of Plenty Regional Council to be used to avoid, remedy and mitigate all or part of the effects of contaminants and nutrients in the discharge.

4 If the dwelling is located in a Reticulation Zone, the application shall be limited notified to Tauranga City Council.

5 Following installation of the system, the installer shall complete and issue a Schedule 8 **'On-site Wastewater Completion of Works Installation Certificate'** verifying that all system components have been installed and tested, and operate in conformity with:

a. The requirements of this regional plan;

b. The relevant sections of the NZS 1547:2012 Standard;

c. The completed Schedule 5 **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'** for the site; and

d. The Schedule 7 **'Manufacturers Engineering Design Producer Statement'** for the system.

The Schedule 8 **'On-site Wastewater Completion of Works Installation Certificate'** shall also have attached any relevant Tauranga City Council planning consent and regulatory authority approval(s) or Certificate(s) of Compliance. The report(s) shall be provided to the owner of the on-site system and to the Bay of Plenty Regional Council.

6 The Aerated Wastewater Treatment System shall be operated in accordance with the manufacturers' requirements and maintained in accordance with the servicing schedule and clients maintenance duties specified in the Schedule 8 'On-site Wastewater Completion of Works Installation Certificate' for the system.

7 An application for resource consent to discharge treated effluent onto or into land under this rule shall be declined if:

8 The on-site effluent treatment system and the treated effluent from it cannot meet the NZS or the schedule requirements for the rule, or

9 The Resulting discharge will cause effects that cannot be safely and effectively avoided, remedied or mitigated (including by financial contribution).

Assessment Criteria

When assessing resource consent applications under this rule, Bay of Plenty Regional Council will have particular regard to, but not be limited to, the following provisions:

Objective 1, 2, 3, 4, 8, 9, 10

Policy 2, 4, 7, 8, 9, 12, 18, 19, 21, 24, 29, 31, 32, 33, 34

Method 7, 11

Advisory Notes:

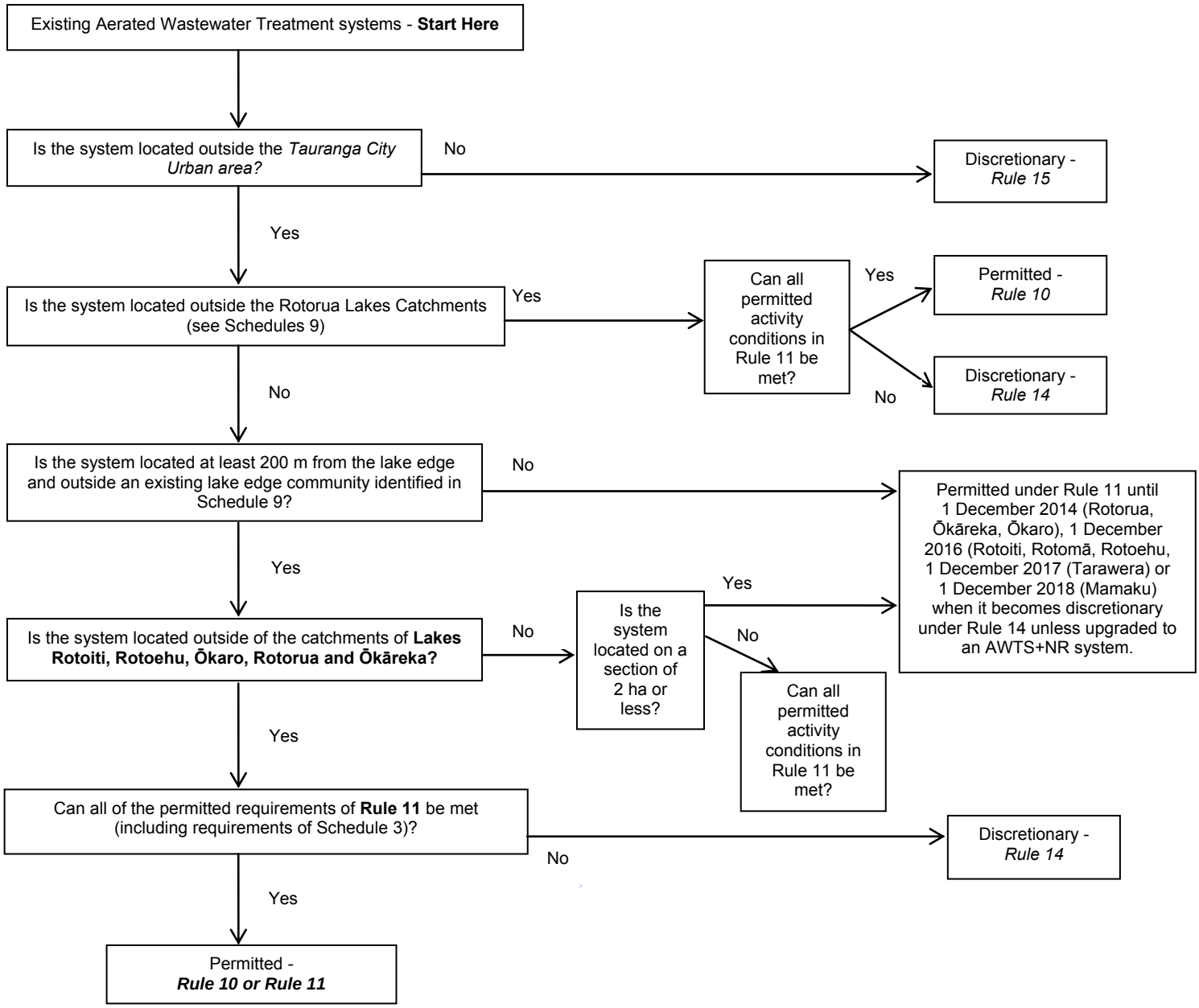
1 Any compaction to the soakage field area is to be avoided.

2 Details on information to be submitted with resource consent applications can be found in Section 7 of this plan.

Explanation/Intent of Rule

To allow Bay of Plenty Regional Council to assess the effects of discharging from Aerated Waste Water Treatment Systems that are located within the Tauranga City Urban Area.

Flow Diagram 3 Existing Aerated Wastewater Treatment Systems

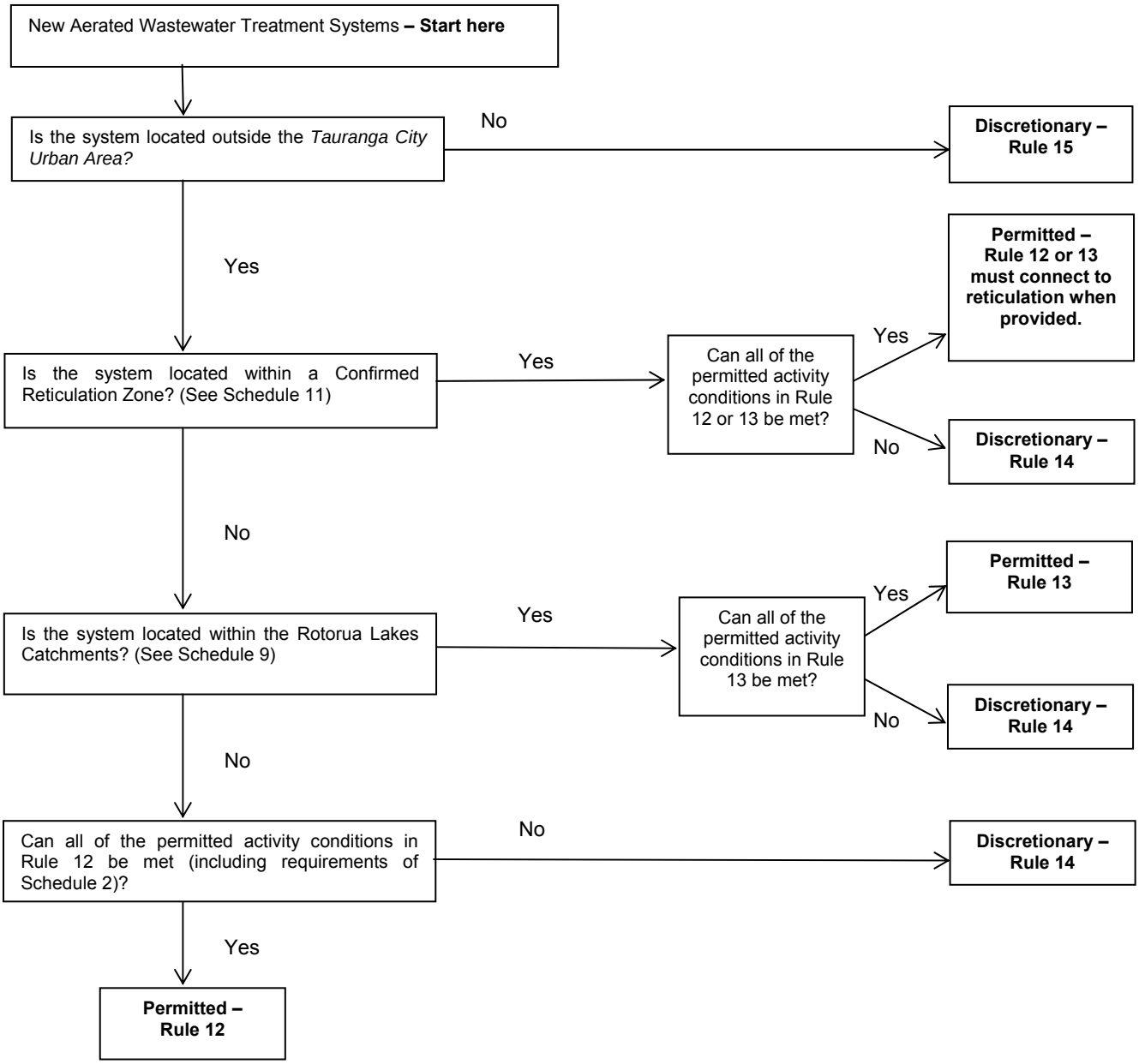


Advisory Note:

1 This flow diagram is to assist working out which rules apply but does not constitute a part of the rules. If there is any inconsistency between the flow diagram and the rules in the plan it refers to, the criteria in the rules prevail.

2 Properties identified in an Operating Reticulation Zone (Schedule 11) are required to connect to reticulation.

Flow Diagram 4 New Aerated Wastewater Treatment Systems



Advisory Note:

1 This flow diagram is to assist working out which rules apply but does not constitute a part of the rules. If there is any inconsistency between the flow diagram and the rules in the plan it refers to, the criteria in the rules prevail.

2 Properties identified in an Operating Reticulation Zone (Schedule 11) are required to connect to reticulation.

5.4 Discharge of Greywater

Rule 16 Permitted – Discharge of up to 1 cubic metre a day of greywater into land.

The discharge of up to 1 cubic metre per day of greywater into land is a **permitted activity** subject to the following conditions:

(a) The discharge of greywater into land does not subject the site to slippage, subsidence, erosion or inundation;

(b) The greywater does not include any commercial laundry wastewater flows;

(c) The discharge is more than 20 metres from any surface water or water supply bore;

(d) Greywater shall be discharged to a tank having a minimum capacity as set out in NZS 1547:2012 'On-site domestic wastewater management' Table J2.

(e) Effluent quality for surface drip and shallow subsurface drip irrigation shall meet the requirements of NZS 1547:2012 *'On-site domestic wastewater management'* clause M2.1 and in particular BOD5 30 g/m3 and TSS 45 g/m3. The irrigation line used for the dispersal of greywater shall be:

  (i) Covered with no less than 200 millimetres of mulch or bark or be at lease 100mm beneath the surface of the soil.

  (ii) Have a minimum of 600 millimetres depth to the water table below the irrigation line emitters.

  (iii) The area to be irrigated shall be determined by reference to NZs 1547:2012 'On-site domestic wastewater management' Table M1.

(f) Effluent quality for spray irrigation or discharge from a hose shall meet the requirements of NZS 1547:2012 'On-site domestic wastewater management' clause M2.2 and in particular BOD5 30 g/m3 and TSS 45 g/m3, E.coli 20 Colony Forming Units (cfu)/100 ml and treated by either ozonation or chlorination to 0.5 – 2 g/m3. Where greywater is applied to the surface of the ground by spray irrigation, the system shall be in accordance with NZS 1547:2012 'On-site domestic wastewater management' clause M8 and in particular the area to be irrigated must be protected from access by humans or animals.

(g) The discharge of greywater into land shall be at a rate that does not cause ponding on, or runoff from the area being watered;

(h) The discharge of greywater does not cause any emission of offensive or objectionable odour beyond the boundary of the subject property; and

(i) The effluent from the greywater tank shall be filtered to ensure the long term operation of the system.

Advisory Notes:

1 This rule applies to grey water only. Grey water is wastewater from the kitchen, bath, shower, basin and laundry facilities. It does not apply to any discharge that contains human waste matter originating from a toilet (water closet) or urinal or waste from a kitchen waste disposal unit (garbage grinder).

2 Each grey water system is subject to specific design requirements, including how excess grey water that is not able to be discharged during wet conditions will be dealt with.

3 Reclaimed water cycling (recycling) of grey water inside a dwelling for toilet flushing is not authorised under this regional plan. The requirements for reclaimed water cycling are covered under the Building Code administered by district and city councils.

4 The land application area for black water may be reduced when greywater is discharged separately in accordance with the requirements of NZS 1547:2012.

5 Greywater can vary from low to high health risk and must be managed accordingly. The liquid fraction of a wastewater flow into or out of a composting toilet is wastewater not greywater.

Explanation/Intent of Rule

This rule permits the discharge of greywater into land for garden and lawn watering purposes provided that the permitted activity conditions can be met. These conditions are to avoid, remedy or mitigate adverse effects on the environment.

Rule 17 Discretionary – The discharge of greywater to land.

The discharge of greywater into land that is not permitted by a rule in this regional plan is a **discretionary activity.**

Assessment Criteria

When assessing resource consent applications under this rule, Bay of Plenty Regional Council will have particular regard to, but not be limited to, the following provisions:

1 An application for resource consent to discharge greywater onto or into land under this rule shall be declined if:

2 The greywater cannot meet NZS 1457:2012 requirements or

3 The resulting discharge will cause effects that cannot be safely and effectively avoided, remedied or mitigated (included by financial contribution).

Objective 1, 2, 3, 5, 7, 10

Policy 2, 10, 18, 19, 21, 24

Method 7

Advisory Notes:

1 Details on information to be submitted with resource consent applications can be found in Section 7 of this plan.

2 Where the discharge of greywater into land requires a consent under this regional plan, the activity will be assessed in accordance with the requirements of:

a. This regional plan,

b. NZS 1547:2012 ‘On-site domestic wastewater management’ in regards the management of greywater, and

c. Section 9.4 of the Regional Water and Land Plan if the property is in the catchment of a Rotorua Lake.

Explanation/Intent of Rule

To allow Bay of Plenty Regional Council to assess the environmental effects of discharging greywater to land where the activity is unable to comply with the permitted activity conditions of Rule 16.

5.5 Pit Latrines

Rule 18 Permitted - The discharge of human waste into land through a pit latrine in remote locations.

The discharge of human waste into land through a pit latrine in remote locations is a **permitted activity** provided that the following conditions are met:

(a) The pit latrine shall not be located where other on-site effluent systems (including portable toilets) are viable alternatives or in an area where their use is restricted by a district plan.

(b) The use of pit latrines shall be restricted to remote areas where other on-site disposal systems are not possible and their level of usage is low, including but not limited to, trampers huts, hikers huts and similar.

(c) The pit latrine shall not be located within:

  (i) Twenty horizontal metres of any water supply bore or 20 metres from surface water;

  (ii) Ten metres from the property boundary;

  (iii) Five metres from any dwelling on the same site and or an area which carries stormwater surface run-off during storm events; and

  (iv) An area where the highest groundwater level is less than 2000 millimetres below the base of the pit latrine;

(d) The pit latrine shall not be located at a site where the soil type comprises gravels, coarse sands, scoria, fissured rock or other materials that allow the free migration of liquid waste matter away from the pit;

(e) The waste in the pit latrine shall not accumulate to a height closer than 1 metre below the original ground surface;

(f) The discharge shall not cause any emission of offensive or objectionable odour beyond the boundary of the subject property;

(g) The following substances and materials shall not be discharged to a pit latrine:

  (i) Hazardous substances and their containers,

  (ii) Chemicals (including agrichemicals) and their containers,

  (iii) Hydrocarbons (including oils and fuels) and their containers; and

(h) When no longer in use, the pit latrine shall be capped to ground level with a minimum of 1 metre of soil or similar substance.

Advisory Notes:

1 This rule applies to discharges from pit latrines (also known as long-drops or privies). These toilet systems are commonly used in remote locations, or as temporary facilities where connection to a sewer is not possible.

2 For the purposes of this rule remote shall mean: “located far away, distant, far from communities.”

3 Pit latrines should be constructed and maintained to exclude vermin, flies and rainwater.

Explanation/Intent of Rule

This rule permits the discharge of human waste into land through a pit latrine in remote locations provided the activity can meet the general permitted activity conditions. These conditions are to avoid, remedy or mitigate adverse effects on the environment.

Rule 19 Discretionary – The discharge of human waste into land through a pit latrine in remote locations unable to comply with Rule 18.

Where the discharge of human waste into land through a pit latrine fails to comply with Rule 18 the discharge shall be a **discretionary activity.**

Advisory Notes:

1 This rule applies to discharges from pit latrines (also known as long-drops or privies). These toilet systems are commonly used in remote locations, or as temporary facilities where connection to a sewer is not possible.

2 Details on information to be submitted with resource consent applications can be found in Chapter 7.

3 Where a pit latrine in the Rotorua Lakes Catchments requires a consent under the, On-Site Effluent Treatment Regional Plan the activity will be assessed in accordance with the On-Site Effluent Treatment Regional Plan and the requirements of section 9.4 of the Proposed Regional Water and Land Plan.

Explanation/Intent of Rule

To allow Bay of Plenty Regional Council to assess the environmental effects of discharging human waste into land through a pit latrine that is unable to meet the permitted activity conditions of Rule 17. The conditions are to avoid, remedy or mitigate adverse effects on the environment.

5.6 Dwelling Expansion/Alteration

Rule 20 Discretionary – Discharge of Treated Domestic Wastewater into Land from an On-Site Effluent Treatment System servicing a Dwelling that has been Expanded, Altered or Reconstructed.

The discharge of treated domestic wastewater into land from an on-site effluent treatment system (either septic tank or Aerated Wastewater Treatment System) servicing a single dwelling that has been expanded, altered or reconstructed in a way that increases the design occupancy of the dwelling and the discharge is not otherwise authorised by a rule in this regional plan is a **discretionary activity** subject to the following requirements:

1 If the location is subject to Policy 28, and unless mitigated by a financial contribution, a condition related to the constraints of the property and location and designed specifically to avoid, remedy or mitigate the discharge of contaminants and nutrients from the site, in particular nitrogen levels exceeding the 15 grams per cubic metre permitted baseline limit.

2 The application shall include a Schedule 5: '**On-site Wastewater Disposal Site and Soil Evaluation Checklist**' completed by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

3 The design, installation and discharge quality of the on-site effluent treatment system proposed shall meet or exceed the requirements of:

(a) This regional plan, in particular the provisions of Schedule 2 for a septic tank system and Schedule 4 for an AWTS or AWTS+NR,

(b) NZS 1546.1:2008 *'On-site domestic wastewater treatment units – Septic tanks'* Sections 3 and 4,

(c) NZS 1547:2012 *'On-site domestic wastewater management'*, and

(d) Section 9.4 of the Regional Water and Land Plan if the system is located in the catchment of a Rotorua lake.

4 A condition requiring a financial contribution may be used in accordance with Section 6 of this plan to remedy and mitigate all or part of the effects of contaminants and nutrients in the discharge.

5 If the dwelling is located in a Reticulation Zone, the application shall be limited notified to the territorial local authority managing the sewerage reticulation system for the location.

6 A condition requiring that following installation of the system, the installer shall complete and provide to the Bay of Plenty Regional Council a Schedule 8 '**On-site Wastewater Completion of Works Installation Certificate**' verifying that all system components have been installed and tested, and operate in conformity with:

a. The requirements of this regional plan;

b. The relevant sections of the NZS 1547:2012 Standard;

c. The completed Schedule 5 **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'** for the site and

d. The Schedule 7 **'Manufacturers Engineering Design Producer Statement'** for the system.

The Schedule 8 '**On-site Wastewater Completion of Works Installation Certificate**' shall also have attached any relevant District Council planning consent and regulatory authority approval(s) or Certificate(s) of Compliance. The report(s) shall be provided to the owner of the on-site system and to the Bay of Plenty Regional Council.

7 If an on-site effluent treatment system is located within a Maintenance Zone or within 200 metres from the lake edge landward (measured horizontally) of any of the Rotorua lakes then it shall have a condition requiring the same maintenance and performance inspection and OSET Approval programme required by Rule 3(g).

8 If an Aerated Wastewater Treatment System is installed, it shall be operated in accordance with the manufacturers' requirements and maintained in accordance with the servicing schedule and clients maintenance duties specified in the Schedule 8 'On-site Wastewater Completion of Works Installation Certificate' for the system.

9 An application for resource consent to discharge treated effluent onto or into land under this rule shall be declined if:

1. The on-site effluent treatment system and the treated effluent from it cannot meet the NZS or the schedule requirements for the rule, or

2. The Resulting discharge will cause effects that cannot be safely and effectively avoided, remedied or mitigated (including by financial contribution).

Assessment Criteria

When assessing resource consent applications under this rule, Bay of Plenty Regional Council will have particular regard to, but not be limited to, the following provisions:

Objective 1, 2, 3, 4, 7, 8, 9, 10

Policy 2, 4, 7, 8, 9, 11, 12, 18, 19, 21, 24, 27, 28, 29, 30, 31, 32

Method 7, 11

Advisory Notes:

1 Details on information to be submitted with resource consent applications can be found in Section 7 of this plan.

2 On-Site Effluent Treatment Regional Plan.

Explanation/Intent of Rule

The expansion, alteration or reconstruction of single dwellings becomes discretionary if the design occupancy of the dwelling has been increased such that the on-site effluent treatment systems servicing the dwelling is unable to meet the general permitted activity conditions identified in the relevant rules of this regional plan. . This is to avoid, remedy or mitigate adverse effects on the environment.

5.7 System Upgrade

Rule 21 Discretionary – Discharge of Treated Domestic Wastewater into Land from an upgraded or replaced On-Site Effluent Treatment System.

The discharge of treated domestic wastewater onto or into land from an On-Site Effluent Treatment System (either septic tank or Aerated Wastewater Treatment Systems) that has been upgraded or replaced (partially or completely) that is not otherwise authorised by a rule in this regional plan is a **discretionary activity** subject to the following requirements:

1 If the location is subject to Policy 28, and unless mitigated by a financial contribution, a condition related to the constraints of the property and location and designed specifically to avoid, remedy or mitigate the discharge of contaminants and nutrients from the site, in particular nitrogen levels exceeding the 15 grams per cubic metre permitted baseline limit.

2 The application shall include a Schedule 5: '**On-site Wastewater Disposal Site and Soil Evaluation Checklist**' completed by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

3 The design, installation and discharge quality of the on-site effluent treatment system proposed shall meet or exceed the requirements of:

a. This regional plan, in particular the provisions of Schedule 2 for a septic tank system and Schedule 4 for an AWTS or AWTS+NR,

b. NZS 1546.1:2008 *'On-site domestic wastewater treatment units – Septic tanks'* Sections 3 and 4,

c. NZS 1547:2012 *'On-site domestic wastewater management'*, and

d. Section 9.4 of the Regional Water and Land Plan if the system is located in the catchment of a Rotorua lake.

4 A condition requiring a financial contribution may be used in accordance with Section 6 of this plan to avoid, remedy and mitigate all or part of the effects of contaminants and nutrients in the discharge.

5 If the dwelling is located in a Reticulation Zone, the application shall be limited notified to the territorial local authority managing the sewerage reticulation system for the location.

6 A condition requiring that following installation of the system, the installer shall complete and provide to the Bay of Plenty Regional Council a Schedule 8 '**On-site Wastewater Completion of Works Installation Certificate**' verifying that all system components have been installed and tested, and operate in conformity with:

a. The requirements of this regional plan;

b. The relevant sections of the NZS 1547:2012 Standard;

c. The completed Schedule 5 **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'** for the site and

d. The Schedule 7 **'Manufacturers Engineering Design Producer Statement'** for the system.

The Schedule 8 **'On-site Wastewater Completion of Works Installation Certificate'** shall also have attached any relevant District Council planning consent and regulatory authority approval(s) or Certificate(s) of Compliance. The report(s) shall be provided to the owner of the on-site system and to the Bay of Plenty Regional Council.

7 If an on-site effluent treatment system is located within a Maintenance Zone or within 200 metres from the lake edge landward (measured horizontally) of any of the Rotorua lakes then it shall have a condition requiring the same maintenance and performance inspection and OSET Approval programme required by Rule 3(f).

8 If an Aerated Wastewater Treatment System is installed, it shall be operated in accordance with the manufacturers' requirements and maintained in accordance with the servicing schedule and clients maintenance duties specified in the Schedule 8 'On-site Wastewater Completion of Works Installation Certificate' for the system.

9 An application for resource consent to discharge treated effluent onto or into land under this rule shall be declined if:

1. The on-site effluent treatment system and the treated effluent from it cannot meet the NZS or the schedule requirements for the rule, or

2. The Resulting discharge will cause effects that cannot be safely and effectively avoided, remedied or mitigated (including by financial contribution).

Assessment Criteria

When assessing resource consent applications under this rule, Bay of Plenty Regional Council will have particular regard to, but not be limited to, the following provisions:

Objective 1, 2, 3, 4, 7, 8, 9, 10

Policy 2, 4, 7, 8, 9, 11, 12, 18, 19, 21, 24, 27, 28, 29, 30, 31, 32

Method 7, 11

Advisory Notes:

1 Details on information to be submitted with resource consent applications can be found in Section 7 of this plan.

Explanation/Intent of Rule

Eventually the components of on-site effluent treatment systems will fail. The cause of the failure may be overloading, the carryover of organic material into the trenches, inundation by stormwater, poor design or simply reaching the end of normal service life. Failure will be evidenced by wastewater backing up and discharging out of gully traps, ponding of effluent over the land application system or the discharge of partially renovated wastewater into open drains and street channels. This rule provides for the partial or complete upgrade or replacement of on-site effluent treatment systems, be they septic tank or Aerated Wastewater Treatment Systems, that need upgrade or replacement but cannot meet the general permitted activity conditions in the rules and Schedules of this regional plan. .

5.8 Discharge of Septage to Land

Rule 22 Discretionary – Discharge of Septage to Land

The discharge of on-site effluent treatment system septage to land is a **discretionary activity.**

Advisory Notes:

1 Details on information to be submitted with resource consent applications can be found in Chapter 7.

2 Where the discharge of on-site effluent treatment system septage in the Rotorua Lakes Catchments requires a consent under the On-Site Effluent Treatment Regional Plan, the activity will be assessed in accordance with the On-Site Effluent Treatment Regional Plan and the requirements of section 9.4 of the Regional Water and Land Plan.

Explanation/Intent of Rule

To allow Bay of Plenty Regional Council to assess the environmental effects of discharging septage to land.

5.9 Spray Irrigation of Wastewater

Rule 23 Discretionary – Spray Irrigation of Wastewater Effluent.

The discharge of wastewater effluent from an on-site effluent treatment system onto land by surface or spray irrigation is a **discretionary activity**.

Advisory Notes:

1 Details on information to be submitted with resource consent applications can be found in Chapter 7.

2 Where the discharge of wastewater from on-site effluent treatment systems located within the Rotorua Lakes Catchments requires a consent under the, On-Site Effluent Treatment Regional Plan the activity will be assessed in accordance with the On-Site Effluent Treatment Regional Plan and the requirements of section 9.4 of the Regional Water and Land Plan.

Explanation/Intent of Rule

To allow Bay of Plenty Regional Council to assess the environmental effects of discharging wastewater effluent from on-site effluent treatment systems onto land by surface or spray irrigation.

5.10 Papakāinga on Multiple-Owned Māori Land

Para 1 Papakāinga housing development to which the rules in this section apply is to be undertaken via "*Te Keteparaha Mo Ngā Papakāinga – Māori Housing Toolkit"*. Developments that use the Toolkit will proceed through a specific development pathway, with the support of Toolkit partners. The process will lessen the risks of adverse effects from multiple units reliant on on-site effluent treatment systems on the same property. The Regional Council will assist and work with applicants using the Toolkit to ensure that the necessary technical requirements and supply of information are met.

Para 2 This rule is intended to support the SmartGrowth policies and strategies regarding promoting papakāinga housing on Māori land.

Rule 24 Permitted - Discharge of Treated Domestic Wastewater into Land from New Individual Septic Tank On-Site Effluent Treatment Systems or New Individual Aerated Wastewater Treatment Systems from Papakāinga on Multiple-Owned Māori Land located within the Tauranga City and Western Bay of Plenty local authority areas (outside the Tauranga City Urban Area).

The discharge of up to two (2) cubic metres per day of treated domestic wastewater into land from a new individual septic tank on-site effluent treatment system or a new individual aerated wastewater treatment system located within the Tauranga City and Western Bay of Plenty local authority areas (outside the Tauranga City Urban Area) from:

1 Up to 10 dwellings for papakāinga housing development and associated Community Facilities on multiple-owned Māori land

is a **permitted activity** subject to the following conditions:

a. The permitted activity conditions set out in Rule 3 for a new septic tank on-site effluent treatment system and Rule 12 for a new aerated wastewater treatment system.

b. The design shall be supported by a completed Schedule 5 'On-site Wastewater Disposal Site and Soil Evaluation Checklist'.

c. Each dwelling or associated community facility has its own septic tank or aerated wastewater treatment system.

d. Each dwelling or associated community facility has its own individual, associated and adjacent land application area of not less than 1200 m2.

Advisory Notes

1 In order to clean out a septic tank, the middle lid needs to be lifted, not the end lid. Septic tanks that have outlet filters installed must have easy access for cleaning, and be easily located and identifiable. It is advisable to install a man hole for access to septic tank on-site effluent treatment systems for ease of maintenance, where the lid is not at ground level.

2 Note that to comply with condition (b), you will need to engage a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design. Contact Bay of Plenty Regional Council for a list of approved persons in your area.

3 The discharge of effluent from septic tank on-site effluent treatment systems or AWTS's servicing places of assembly, where many people will regularly gather is a Discretionary Activity requiring resource consent, unless otherwise covered by this rule. For example, this includes rural factories, camp grounds, schools, sports clubs and Marae. For one-off events where a crowd is expected and the capacities of the septic tank on-site effluent treatment systems or AWTS's are likely to be exceeded, the use of temporary facilities such as port-a-loos should be arranged.

Explanation/Intent of Rule

This rule allows the use of multiple individual septic tank on-site effluent treatment systems and/or AWTS systems for papakāinga and associated buildings, on multiple-owned Māori land located in the Tauranga City and Western Bay of Plenty areas, (outside the Tauranga City Urban Area) to better enable to the effective and efficient utilisation of "*Te Keteparaha Mo Ngā Papakāinga – Māori Housing Toolkit*" while ensuring that minimum design standards are consistent with the New Zealand Standards.

This rule contains a number of conditions that Septic Tanks and Aerated Wastewater Treatment Systems must meet in order for them to be permitted. These conditions include design aspects, as well as maintenance and certification requirements. The conditions are to avoid, remedy or mitigate adverse environmental effects.

Rule 25 Controlled – Discharge of Treated Domestic Wastewater into Land from New Shared Septic Tank On-Site Effluent Treatment Systems or New Shared Aerated Wastewater Treatment Systems from Papakāinga on Multiple-Owned Māori Land located within the Tauranga City and Western Bay of Plenty local authority areas (outside the Tauranga City Urban Area).

The discharge of treated domestic wastewater into land from a new shared septic tank on-site effluent treatment system or a new shared aerated wastewater treatment system, located within the Tauranga City and Western Bay of Plenty local authority areas (outside the Tauranga City Urban Area) from:

1 Up to 10 dwellings for papakāinga housing development and associated Community Facilities on multiple-owned Māori land

is a **controlled activity** and, subject to the following conditions:

(a) The land shall have an average of at least 2000 m^2 per dwelling or associated community facility.

(b) Each associated community facility shall discharge no more than two (2) cubic metres per day.

(c) All other requirements of the permitted activity conditions set out in Rule 3 for a new septic tank on-site effluent treatment system and Rule 12 for a new aerated wastewater treatment system are met (as applicable).

(d) The design shall be supported by an assessment prepared by a suitably qualified and experienced person, in general accordance with NZS 1547:2012 'On-site Domestic Wastewater Management' and include a completed Schedule 5 'On-site Wastewater Disposal Site and Soil Evaluation Checklist'

Bay of Plenty Regional Council reserves its control over the following matters:

1 The discharge volume and means of compliance with the limitation of discharge volume.

2 The size and location of the land application area and reserve area.

3 The location of the system in relation to property boundaries, buildings, and parking areas.

4 The risk management system to be put in place, including whether there is a single entity remaining responsible for the ongoing maintenance of the shared system.

Advisory Notes

Applications for controlled activities under this Rule do not require the written approval of affected persons, and shall not be publicly notified, except where the Regional Council considers special circumstances exist in accordance with Section 94C of the Act.

Explanation/Intent of Rule

This rule allows the use of shared septic tank on-site effluent treatment systems and AWTS systems for papakāinga and associated community facilities on multiple-owned Māori land, located in the Tauranga City and Western Bay of Plenty areas, (outside the Tauranga City Urban Area) to better enable to the effective and efficient utilisation of *"Te Keteparaha Mo Ngā Papakāinga – Māori Housing Toolkit"* while ensuring that systems are appropriately designed and consistent with the New Zealand Standards (where applicable).

This rule provides for the more efficient use of multiple-owned Māori land, whereby the area for each dwelling and disposal field can be aggregated, housing can be clustered and the land application field can be shared by up to 10 dwellings using a wastewater system design by a suitably qualified person. This is to enable papakāinga housing while retaining the economic viability of the balance of the Māori land.

The effects of the activity are able to be assessed and managed within the resource consent application process, including discharge volumes, the location of, and separation between, systems, consideration of the overall area of the site and its ability to accommodate shared systems and/or collective disposal field(s).

Any conditions of resource consent could include a statement of the number of bedrooms, occupants, and/or activities and any limitations proposed by the applicant to ensure compliance that would form a condition of consent, for example, water saving devices and water meters [Matter of control 1 above].

The applicant is required to demonstrate that the system is appropriate when making more connections to a single tank or discharge from multiple tanks to a single application field, and the need to ensure that all connectors remain aware of the ongoing need for tank and field maintenance and the health of the system.

There are compulsory ongoing maintenance requirements incorporated into these rules (via cross references to Rules 3 and 12 in (b)) and these are matters of control under Matter 4.

Rule 26 **Discretionary – Discharge of Treated Domestic Wastewater into Land from New Septic Tank On-Site Effluent Treatment Systems or New Aerated Wastewater Treatment Systems from Papakāinga on Multiple-Owned Māori Land located within the Tauranga City and Western Bay of Plenty local authority areas (outside the Tauranga City Urban Area).**

The discharge of treated domestic wastewater into land from a new septic tank on-site effluent treatment system or a new aerated wastewater treatment system from papakāinga housing and all associated buildings on multiple-owned Māori land located within the Tauranga City and Western Bay of Plenty local authority areas, (outside the Tauranga City Urban Area), where the activity is not permitted by Rule 24 or a controlled activity under Rule 25 is a **discretionary activity** subject to the following conditions:

(a) The requirements set out in Rule 5 for a new septic tank on-site effluent treatment system and Rule 14 for a new aerated wastewater treatment system.

6 Financial Contributions

Para 1 Financial contributions can be used to remedy or mitigate adverse effects, including off-site mitigation. When granting consent under the rules in this regional plan, Bay of Plenty Regional Council may impose conditions requiring a financial contribution to achieve the objectives and purposes of the plan. Territorial Local Authorities may also impose financial contributions on activities under the provisions of district plans. Financial contributions are not 'development impact fees' or 'development levies'. Financial contributions are not required for all consents, but are a tool available to remedy or mitigate adverse effects on natural and physical resources associated with the granting of a resource consent. Section 111 of the Resource Management Act 1991 requires that where a consent authority (such as Bay of Plenty Regional Council) has received a cash contribution under section 108(2)(a), the authority shall deal with that money in reasonable accordance with the purposes for which the money was received.

Para 2 The term 'financial contribution' is defined in section 108(9) of the Resource Management Act 1991.

Para 3 The Resource Management Act 1991 requires the plan to specify the circumstances when a financial contribution may be imposed, the manner in which the level of contribution that may be imposed will be determined, and the general purposes for which the contribution may be used.

6.1 Circumstances, Purpose and Amount

Table 4 Circumstances and Purposes of Financial Contributions

	Circumstance	Purpose
1	Protection of Water Quality from Discharges of Contaminants to Land - Where a point-source discharge of contaminants to land is likely to cause or contribute to adverse effects on the surface water quality of the surrounding environment.	To provide for the retirement and vegetation of riparian areas, or other suitable measures, that will mitigate the effects of the activity on water quality.
2	Protection of Lake Water Quality – where a discharge is within the affected catchment specified in a nutrient management programme, and the activity is likely to result in the export of nitrogen or phosphorus from the activity site, and on-site mitigation cannot otherwise be achieved.	To remedy or mitigate effects (including cumulative effects) on the environment caused by the discharge of nutrients, including the discharge of nitrogen or phosphorus into the affected catchment.
3	General Mitigation Works - Where the activity for which a resource consent is granted will cause or contribute to adverse effects on the environment which will not be adequately mitigated by any of the types of contribution described elsewhere in this section.	To provide works for the purpose of off-setting the adverse effects of the activity, including protecting, restoring or enhancing natural and physical resources elsewhere in the same general locality.

6.2 Matters to be Considered

Para 1 In deciding whether to impose financial contributions, the types of contribution and their value, Bay of Plenty Regional Council will have particular regard to the following matters:

(a) Financial contributions shall be for the purpose of, remedying or mitigating adverse effects on the environment.

(b) Financial contributions must be used to, remedy or mitigate adverse effects caused by the activity for which consent is sought.

(c) Financial contributions shall be used in the catchment where consent is sought as appropriate.

(d) Financial contributions will be required when:

(i) The remedy or mitigation of adverse effects cannot be practically achieved by another condition of consent, or

(ii) A financial contribution would be more efficient than another condition of consent in achieving the remedy or mitigation of adverse effects, or

(iii) A financial contribution is agreed by parties to the application to be the best outcome to avoid, remedy, or mitigate adverse effects on the environment, and

(iv) The financial contribution will be used to assist in achieving the purposes and objectives of this regional plan.

(e) An assessment as to whether a financial contribution is appropriate to the activity will be made on a case-by-case basis.

(f) Preference will generally be for a financial contribution of money, except where land may be more appropriate.

(g) The value of the contribution will be calculated using the best available method to equate to the actual and reasonable costs of mitigation measures, or a portion of them, as appropriate.

6.3 General Provisions

Para 1 In imposing a financial contribution, the following general provisions will apply:

1 All financial contributions shall be GST inclusive.

2 Where the financial contribution is, or includes, a payment of money, Bay of Plenty Regional Council may specify in the condition:

(a) The amount to be paid by the consent holder or the methods by which the amount of the payment shall be determined;

(b) How payment is to be made, including whether payment is to be made as a lump sum, by instalments or through annual Section 36 charges;

(c) When payment shall be made;

(d) Whether the amount of the payment is to bear interest and, if so, the rate of interest;

(e) If the amount of the payment is to be adjusted to take account of inflation and, if so, how the amount is to be adjusted;

(f) Whether any penalty is to be imposed for default in payment and, if so, the amount of the penalty or formula by which the penalty is to be calculated.

3 Where Bay of Plenty Regional Council agrees that land is an appropriate contribution, the value of the land shall be determined by Bay of Plenty Regional Council in conjunction with a Registered Valuer. In approving a financial

contribution of land, Bay of Plenty Regional Council shall give reasons in its decision for its assessment of the value of the land.

4 Where the financial contribution is, or includes, land, the Bay of Plenty Regional Council may specify:

(a) The location and the area of the land;

(b) When and how the land is to be transferred to, or vested in, Bay of Plenty Regional Council.

5 Where the financial contribution is paid by an applicant under Policy 30 for the purpose of , remedying or mitigating effects on the environment caused by the discharge of contaminants and nutrients, in particular nitrogen into a Rotorua Lake catchment, the amount for a consent granted for up to 10 years shall be calculated as follows:

(a) Formula: Dwelling occupancy x 15 gram per person per day x 365 days per year/1000 x dollar cost to remove 1 kilogram of nitrogen x Nutrient Treatment Factor.

(b) Where:

(i) Dwelling occupancy is calculated using Schedule 6;

(ii) 15 gram per person per day is the averaged amount of nitrogen given in NZS 1546.3:2008 Section 2.4.1(c);

(iii) 365 days per year gives an annual amount in grams;

(iv) Divided by 1000 converts to kilograms;

(v) The dollar cost to remove one kilogram of nitrogen will be will be determined annually as a section 36 charge when Bay of Plenty Regional Council sets the cost of its nitrogen remediation programmes. The amount used in calculating a financial contribution under this section will be the dollar cost to remove one kilogram of nitrogen determined for the year the consent is granted;

(vi) Multiplied by the Nutrient Treatment Factor (NTF); a decimal number from 1 to 0, to adjust the amount of financial contribution to recognise the amount of nitrogen already removed by the applicants on-site effluent treatment system:

1. Existing system of unknown design or standard, or where the septic tank (or tanks) total volume is less than 3300 litres or where the effluent discharges to a soak hole or deep trenches. NTF = 0.80, 80% cost.

2. Modern septic tank system complying with the provisions of NZS 1547:2012, an outlet filter and a land application system. NTF = 0.44, 44% cost.

3. An approved AWTS system. NTF = 0.12, 12% cost.

4. An approved AWTS+NR system that can achieve 15 gram per cubic metre of Total Nitrogen. NTF = 0.0, no cost.

No additional cost is payable where an AWTS+NR system has been installed.

7 Information to be Submitted with Resource Consent Applications

Para 1 A resource consent application must contain sufficient information to allow any person to understand what activity is proposed, and any ancillary information that the consent authority may need to process the application effectively. All resource consent applications must be prepared and lodged in accordance with the procedures and requirements of Section 88 of the Resource Management Act 1991, and Schedule 4 to the Act.

Para 2 Bay of Plenty Regional Council has specific consent application forms for a number of activities. Attached to each of these specific application forms are explanatory notes on the preparation of an assessment of effects on the environment. Applicants should use these notes as guidance to what information may be required for any application.

Para 3 Bay of Plenty Regional Council may at any reasonable time before the hearing of an application for a resource consent application, by written notice to an application, require further information in respect to the activity for which the application for a resource consent is made, pursuant to section 92 of the Resource Management Act 1991.

Para 4 Bay of Plenty Regional Council therefore recommends that consent applicants discuss information requirements with Council staff prior to lodging a consent application.

Para 5 Schedule 5 the **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'** must be completed and attached to form part of the information included in resource consent applications. The evaluation checklist shall be completed by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

8 Anticipated Environmental Results

8.1 Water Quality

	Anticipated Environmental Result	Environmental Performance Indicator	Type of Monitoring	Information Source
1	All monitored river and lake bathing sites meet the Bathing Standard guidelines.	Bacterial levels	State of the environment.	Bay of Plenty Regional Council Bathing Suitability monitoring programme.
2	All rivers, streams and lakes meet their Water Quality Classification.	Dissolved oxygen. Nutrient levels. Temperature. Clarity. Periphyton. Bacterial levels. Suspended sediment.	State of the environment, compliance and impact monitoring.	NERMN water quality module, and consents and compliance reports.
3	Lakes do not exceed their individual TLI.	Trophic level index. Frequency, location and species of toxic and non-toxic algal blooms, lake 'foams'.	State of the environment.	NERMN water quality and freshwater ecology modules.
4	Harbours, estuaries and the open coast waters meet their Water Quality targets (as established in the Bay of Plenty Regional Coastal Environment Plan).	Water quality in estuaries, harbours, open coast.	State of the environment.	NERMN water quality module, Bathing Suitability monitoring programme, consents and compliance reports.
5	Groundwater quality is improved where necessary.	Nitrate. Evidence of saltwater or geothermal intrusion. Nutrient loading to land and water.	State of the environment impact monitoring in relation to discharges of contaminants to land.	NERMN groundwater module, and consents and compliance reports.
6	Water quality is maintained or improved where necessary in the communities of Ongare Point, Te Puna West, Tanners Point, Tarawera, Gisborne Point, Rotoma, Hinehopu, Matatā and Bryans Beach, as a result of the maintenance requirements in this regional plan.	Bacterial levels (coastal). Bacterial and nutrient levels (lakes).	State of the environment impact monitoring in relation to discharges of contaminants to land.	NERMN water quality module. On-Site Effluent Treatment System Impact and Project Monitoring.
7	Water quality in the Rotorua Lakes Catchments is improved as a result	Percentage of 'passed' or new on-site effluent treatment systems in the	Compliance monitoring. State of the	Inspection forms from septic tank cleaners and inspectors and Bay of Plenty

	Anticipated Environmental Result	Environmental Performance Indicator	Type of Monitoring	Information Source
	of the requirement for an improved quality of effluent treatment systems (nutrient reducing capabilities).	maintenance areas. Bacterial and nutrient levels.	environment impact monitoring in relation to discharges of contaminants to land.	Regional Council's 'Septic Tank Database'. Project Monitoring. NERMN water quality module.

8.2 Performance of On-Site Effluent Treatment Systems

	Anticipated Environmental Result	Environmental Performance Indicator	Type of Monitoring	Information Source
1	Improved performance of on-site effluent treatment systems in Maintenance Zone communities.	Percentage of approved On-Site Effluent Treatment systems in each Maintenance Zone.	Compliance Monitoring of individual systems in Maintenance Zones.	Inspection forms from septic tank cleaners and inspectors and Bay of Plenty Regional Council's 'Septic Tank Database'.
2	Improved performance of wastewater systems and improved quality of wastewater discharged from systems authorised by resource consents.	Percentage of resource consents that have conditions that will achieve compliance with plan policies and standards relative to site and location constraints.	Monitoring of consent quality relative to site and location constraints. Monitoring of compliance with consent conditions and plan requirements.	Records in Compliance database.
3	Improved quality of wastewater discharged from permitted and consented on-site effluent treatment systems.	Improving water quality.	Water quality monitoring surveys.	Water quality monitoring reports.

8.3 Community Awareness of Environmental Issues

	Anticipated Environmental Result	Environmental Performance Indicator	Type of Monitoring	Information Source
1	Increased community awareness of environmental issues associated with poor management of on-site effluent treatment systems.	Percentage of people aware of specific issues. Percentage of people who undertake required upgrades of their systems.	Plan performance monitoring.	Environment Bay of Plenty attitudes and perceptions survey. Inspection forms from septic tank cleaners and inspectors and Bay of Plenty Regional Council's 'septic Tank database'.

9 Cross Boundary Issues

Para 1 Section 67(1)(h) of the Resource Management Act 1991 requires regional plans to state the processes that will be used to address cross-boundary issues. Such issues may:

(a) Affect areas or resources across city/district council boundaries, or

(b) Affect an area of land, waterbody or geothermal resource across regional council boundaries,

and may relate to a general issue or a specific activity.

Para 2 The processes specified below will be used to address cross-boundary issues relating to the management of discharges from on-site effluent treatment systems.

Para 3 The processes identified in this regional plan are consistent with those defined in the Bay of Plenty Regional Policy Statement, Gisborne Regional Policy Statement, Waikato Regional Plan, and the Hawkes Bay Regional Resource Management Plan. Section 5.3.8 of the Bay of Plenty Regional Policy Statement includes processes that Bay of Plenty Regional Council will follow to address cross-boundary issues.

9.1 Processes to Address Cross-Boundary Issues

1 Identify existing and potential cross-boundary issues through on-going liaison with neighbouring regional or unitary councils, constituent Territorial Local Authorities and other resource management agencies. This will be carried out at either a councillor, council executive management or specialist staff level. Mechanisms include joint working groups or committees, research projects, investigation programmes, monitoring programmes or other joint activities or approaches as required.

2 Consult with all affected parties to resolve cross-boundary issues.

3 Develop solutions to cross-boundary issues with neighbouring regional councils and other relevant parties.

4 The solutions are to be consistent between the regions, but recognise and allow for different methods of implementation, regulatory and policy provisions that may be used.

5 Promote a joint approach to the management of resource consent applications with the potential for cross-boundary effects. This may involve consultation with adjacent local authorities, joint resource consent processing, or joint hearings.

6 Use existing regional plans from other regional councils as a base for developing regional plans for Bay of Plenty to seek consistency and avoid duplication of effort whenever possible, while ensuring measures are appropriate and justified in the Bay of Plenty Region.

7 Work with neighbouring regional councils, and constituent Territorial Local Authorities to develop mechanisms to facilitate information sharing between councils.

This includes ensuring environment monitoring data and other information collected by Bay of Plenty Regional Council, is provided to relevant parties.

8 Advocate and promote a consistent approach between territorial local authorities and regional councils controlling discharges from on-site effluent treatment systems.

This includes:

(a) Making submissions on district plans and other regional plans.

(b) Commenting on relevant district resource consent application

9 Work in conjunction with constituent territorial local authorities to establish procedures for ensuring efficient resource management processes in areas where there are overlaps in the functions of regional councils and district or city councils under the Resource Management Act 1991.

10 This may involve undertaking transfers of functions, powers and duties under section 33 of the Resource Management Act 1991, where this would result in more efficient or effective resource management processes or outcomes.

11 Consider preparing joint resource management plans or strategies with neighbouring regional councils, constituent territorial local authorities, and other resource management agencies to address specific areas or issues.

10 Plan Review Process

Para 1 Bay of Plenty Regional Council must monitor the effectiveness of this regional plan as a means of achieving its objectives and policies under section 67(1)(i) and monitor the environment under section 35(2) of the Resource Management Act.

Para 2 Bay of Plenty Regional Council will initiate a review of the plan no later than ten years from the date on which the reviewed plan in accordance with the requirements of the Resource Management Act 1991. Council will aim for the continual improvement of regional plan effectiveness through monitoring and review of objectives, policies and rules.

Para 3 The following methods will be used to gather information for the plan review:

(a) Compile a register of matters that may require reconsideration.

(b) Monitor the implementation of the plan for:

  (i) Structural and operational faults.

  (ii) Effectiveness of policies and rules.

  (iii) Meeting objectives.

  (iv) Practicality of objectives, policies, rules and other methods.

(c) Link state of the environment monitoring to performance monitoring of plan objectives, policies, rules and other methods.

(d) Consultation and feedback from interested parties.

(e) Surveys of community attitudes and perspectives.

(f) Monitoring undertaken by other resource management agencies.

(g) Research results from environmental investigations.

(h) Records of investigation of environmental damage, enforcement action and pollution hotline complaints.

(i) Compliance monitoring of consent conditions.

(j) Impact monitoring of environmental effects of activities.

(k) State of the environment reporting, including aspects in the Anticipated Environmental Results.

Para 4 In reviewing this regional plan, Bay of Plenty Regional Council will:

(a) Determine the effectiveness of the policies and methods in achieving the objectives:

(b) Assess the effectiveness of the policies and methods in achieving the anticipated environmental outcomes.

(c) Assess the efficiency of the methods and rules.

(d) Assess the relevancy of the issues addressed in the plan.

(e) Determine if there are any additional issues that have arisen that require attention in the plan review.

(f) Review the effectiveness of voluntary methods for achieving objectives and discuss the use of regulatory methods in areas where environmental performance targets have not been met.

Para 5 In reviewing this regional plan, Bay of Plenty Regional Council will consult with neighbouring regional councils, constituent territorial local authorities, local tangata whenua, key user groups and the regional community in general. Consideration will be given to technological changes, changes to community environmental expectations, and natural environmental changes.

Schedule 1: Performance Conditions for Septic Tanks Existing on 1 December 2012

1 **Minimum Standards across the region**

(a) The existing Septic Tank must have a liquid capacity of at least 2700 litres and be structurally sound.

(b) The tank should be watertight to ensure that stormwater or ground water does not enter or that effluent can leak out. Stormwater shall be directed away from the land application area. Stormwater downpipes shall not be connected to the sanitary drainage or septic tank.

(c) There should be an associated land application system of a size sufficient to dispose of effluent without creating any adverse environmental or health effect.

(d) The maximum discharge of domestic wastewater from the septic tank does not exceed 2000 litres per day.

(e) Each system within a Reticulation Zone must connect to reticulation where this is available subject to the provisions of s459 of the Local Government Act 1974.

(f) There is no overland flow or ponding of effluent.

(g) Solids in a septic tank do not exceed one third of the liquid volume of the tank at any time.

(h) Any outlet filter installed must comply with NZS 1546.1:2008 Appendix D.

2 **Minimum Standards in Maintenance Zones**

In addition to the Minimum Standards across the Region above;

(i) The access points for pump out of tank and for cleaning of the outlet filter shall be raised to ground level.

Schedule 2: Performance Conditions for new Septic Tanks

The installation of a septic tank and land application system shall comply with the provisions of NZS 1547:2012 *On site domestic wastewater management*. The Septic Tank shall comply with the provisions of NZS 1546.1:2008 *On-site wastewater treatment units – Septic tanks*.

In particular;

(a) The discharge shall not exceed 2000 litres per day or 14,000 litres per week.

(b) The design shall be supported by a completed **'On-site Wastewater Disposal Site and Soil Evaluation Checklist'**; see Schedule 5. The evaluation checklist shall be completed by a Suitably Qualified and Experienced Person accredited in site and soil assessment for on-site wastewater management system design.

(c) Dwelling occupancy shall be determined by the **'Occupancy Allowances'** table in Schedule 6.

(d) A 100% reserve land application area must be provided. This area must be kept free of permanent structures.

(e) The land application system must be above the 1 in 20 year flood contour.

(f) Land application system must be at least 600 mm above ground water winter maximum level.

(g) The designer/installer shall provide the owner with a set of operational details sufficient for the owner to operate the system, understand the limitations of the system and the maintenance required to ensure the system operates satisfactorily.

(h) Septic tank effluent may not be discharged through drippers.

(i) The access points for pump out of tank and for cleaning of the outlet filter shall be raised to ground level.

(j) Any outlet filter installed must comply with NZS 1546.1:2008 Appendix D.

(k) The design of the septic tank shall comply with NZS 1546.1 Sections 3 and 4. Compliance with this requirement shall be demonstrated by a certificate from a Suitably Qualified and Experienced Person.

(l) Where the land application area is a trench or bed designed under NZS 1547:2012 Table L1 and secondary treated effluent is specified, the effluent quality must meet the requirements of Appendix M2.2.

Schedule 3: Performance Conditions for Aerated Wastewater Treatment Systems Existing on 1 December 2012

An existing Aerated Wastewater Treatment System must have been installed as a permitted activity or authorised by a Resource Consent.

(a) There should be an associated land application system of a size sufficient to dispose of effluent without creating any adverse environmental or health effect.

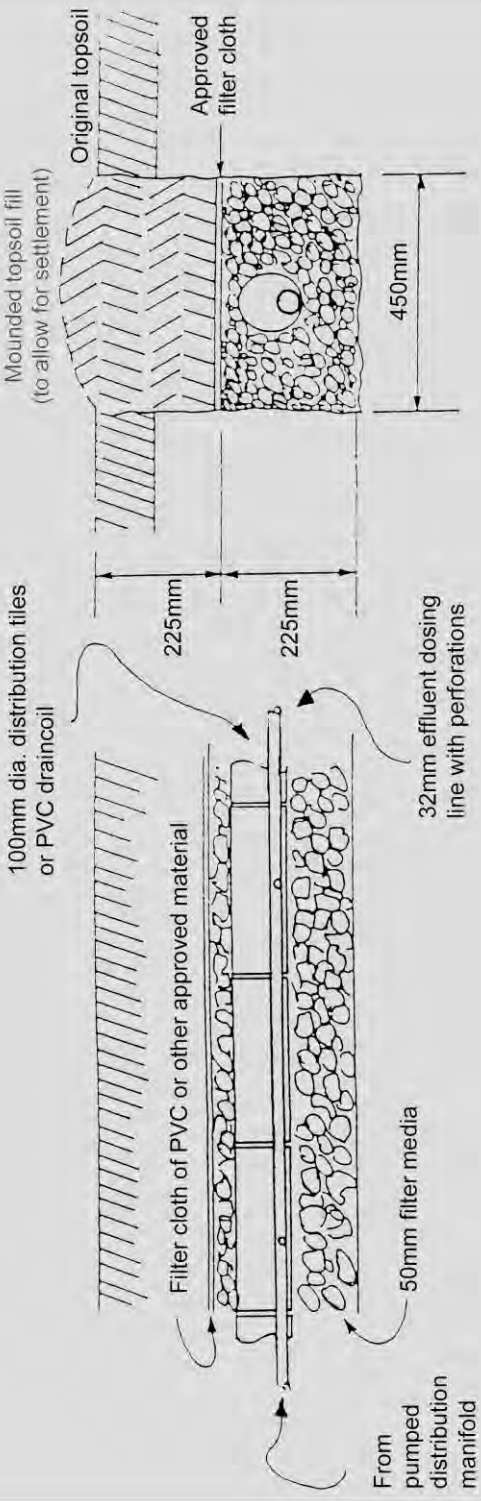
(b) The maximum discharge of domestic wastewater from the septic tank does not exceed 2000 litres per day.

(c) Each system within a Reticulation Zone must connect to reticulation where this is available subject to the provisions of s459 of the Local Government Act 1974.

(d) There is no overland flow or ponding of effluent.

(e) The Aerated Wastewater Treatment and land application systems must be serviced and maintained in accordance with the manufacturers' recommendations.

Fig. 6.1 LPED (Low-Pressure-Effluent-Distribution) for Standard Trenches, Table 6.3



NOTES:
1. 100 millimetres distribution line to be laid flat.
2. Ends of 32 millimetres low pressure line be capped with removable cap to enable maintenance flushing.

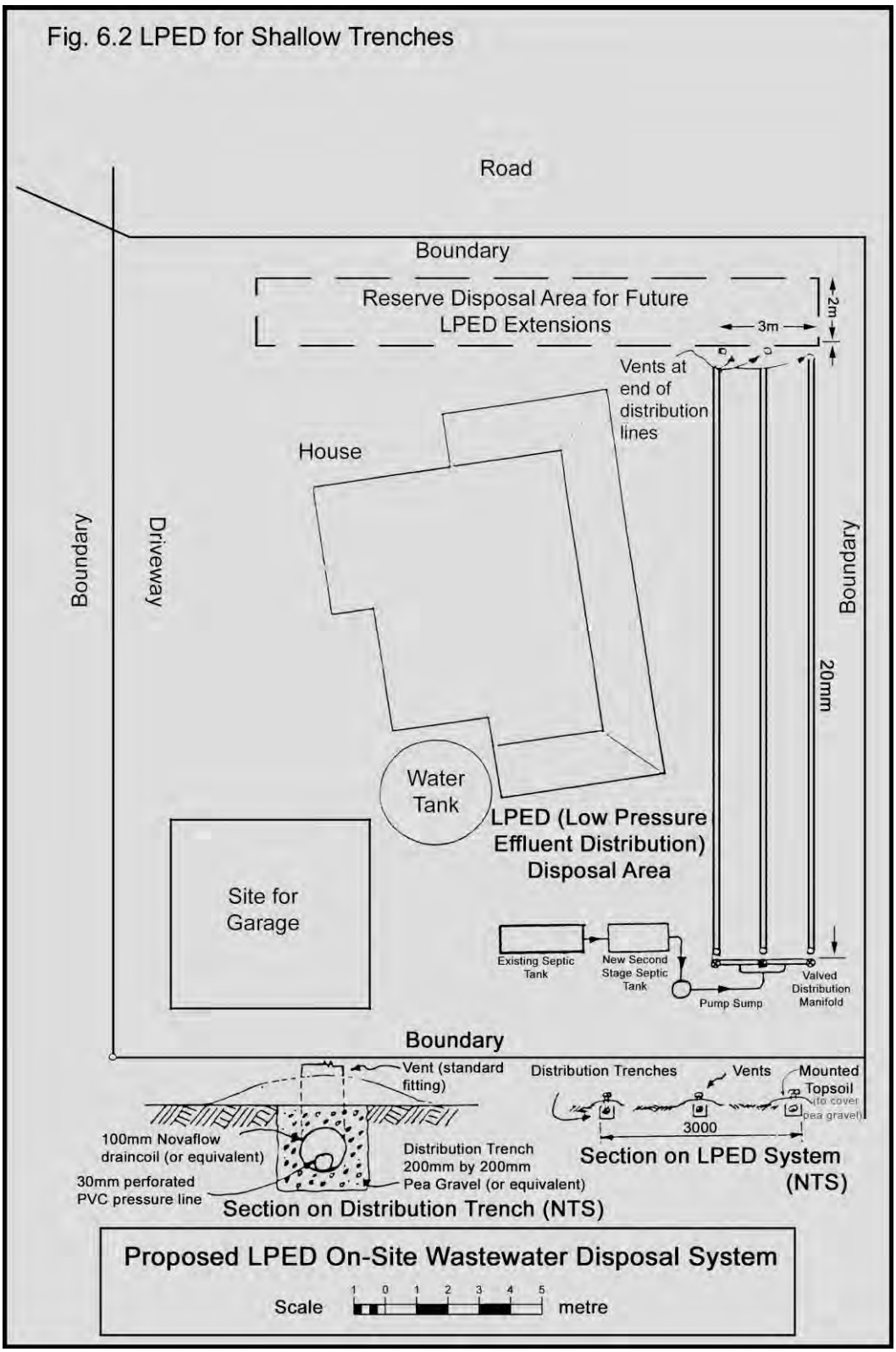


Fig. 6.2 LPED for Shallow Trenches
Road
Boundary
Reserve Disposal Area for Future LPED Extensions
2m
3m
Vents at end of distribution lines
House
Boundary
Driveway
Boundary
20mm
Water Tank
LPED (Low Pressure Effluent Distribution) Disposal Area
Site for Garage
Existing Septic Tank
New Second Stage Septic Tank
Pump Sump
Valved Distribution Manifold
Boundary
Vent (standard fitting)
100mm Novaflow draincoil (or equivalent)
30mm perforated PVC pressure line
Distribution Trench 200mm by 200mm Pea Gravel (or equivalent)
Section on Distribution Trench (NTS)
Distribution Trenches
Vents
Mounted Topsoil (to cover pea gravel)
3000
Section on LPED System (NTS)
Proposed LPED On-Site Wastewater Disposal System
Scale
1 0 1 2 3 4 5
metre

Schedule 4: Performance Conditions for new Aerated Wastewater Treatment Systems

The installation of an Aerated Wastewater Treatment System and land application system shall comply with the provisions of NZS 1547:2012 *On site domestic wastewater management*. The Aerated Wastewater Treatment System shall comply with the provision of NZS 1546.3:2008 *On-site wastewater treatment units – Aerated wastewater treatment systems.*

In particular:

(a) The discharge shall not exceed 2000 litres per day or 14,000 litres per week.

(b) The design shall be supported by a completed 'On-site Wastewater Disposal Site and Soil Evaluation Checklist'; see Schedule 5. The evaluation checklist shall be completed by a Suitably Qualified and Experienced Person.

(c) Dwelling occupancy shall be determined by the 'Occupancy Allowances' table in Schedule 6.

(d) A reserve land application area in accordance with the provisions of the standard must be provided. This area must be kept free of permanent structures.

(e) The land application system must be above the 1 in 20 year flood contour.

(f) Land application system must be at least 600 mm above ground water winter maximum level.

(g) The designer shall provide the owner with a set of operational details sufficient for the owner to operate the system, understand the limitations of the system and the maintenance required to ensure the system operates satisfactorily.

(h) The design of an AWTS shall comply with NZS 1546.3 Section 2.4. Compliance with this requirement shall be demonstrated by a certificate from a Suitably Qualified and Experienced Person.

(i) The construction of the AWTS shall comply with NZS 1546.1 Sections 3 and 4. Compliance with this requirement shall be demonstrated by a certificate from a Suitably Qualified and Experienced Person.

(j) The performance of the AWTS shall have been tested by the On-site Effluent Treatment National Treatment Program (OSET – NTP) or equivalent. The test certificate for the AWTS unit selected must be less than five years old.

(k) Where a dripper system is used, the installation must be in accordance with the manufacturers' specification.

(l) The Aerated Wastewater Treatment and land application systems must be serviced and maintained in accordance with the manufacturers' recommendations.

(m) The maintenance report shall be forwarded to the consenting authority. Where the installation of an Aerated Wastewater Treatment System is a permitted activity the report shall be forwarded to the Local Authority. Where the installation of an Aerated Wastewater Treatment System is authorised by a Resource Consent the report shall be forwarded to Bay of Plenty Regional Council.

For areas outside the Rotorua Lakes catchments

(n) As well as (a) to (m) above, the treatment process must achieve a maximum of 30 grams per cubic metre of BOD5 Biological Oxygen Demand (BOD5) and 45 grams per cubic metre of suspended solids Total Suspended Solids (TSS) prior to discharge to the land application system.

For areas inside the Rotorua Lakes Catchments

(o) As well as (a) to (n) above, the treatment process must achieve a maximum of 30 grams per cubic metre of BOD5 Biological Oxygen Demand (BOD5) and 45 grams per cubic metre of suspended solids Total Suspended Solids (TSS) and in addition a Total Nitrogen (TN) level of 15 grams per cubic metre measured as nitrogen prior to discharge to the land application system.

Schedule 5: On-site Wastewater Disposal Site and Soil Evaluation Checklist

To be completed by a person accredited in site and soil assessment for on-site wastewater management system design.

PART A: Contact Details

A1. Applicant Details:

Applicant Name	
Company Name	

	First Name(s)	Surname
Property Owner Name(s)		
Nature of Applicant*		

*(*i.e. Owner, Lessee, Prospective Purchaser, Developer)*

A2. Consultant/Site Evaluation Details:

Consultant/Agent Name				
Site Evaluator Name				
Postal Address				
Phone Number	Business		Private	
	Mobile		Fax	
Name of Contact Person				
E-mail Address				

A3. Are there any previous existing discharge consents relating to this proposal or other waste discharged on the site?

Yes		No		(Please tick)

If yes, give Reference Number(s) on Description

A4. List any other district and regional council consents in relation to this proposal site and indicate whether or not they have been applied for or granted. Specify Application Details and Consent No.): *(e.g. Land Use, Water Take, Subdivision, Earthworks and Stormwater Consents)*

PART B: Property and Site Details

B1. Property for which this application or permitted activity authorisation relates:

Physical address of property			
Territorial Local Authority			
Regional Council			
Legal Status of Activity	Permitted:	Controlled:	Discretionary:
Relevant Regional Rule(s) [Note 1]			
Map Grid Reference of Property [Note 2]			
Attach a **Location Plan** with scale and orientation, with adequate features to locate the property.			
Attach a **Site Plan** with scale and orientation of all the components of the on-site effluent treatment system, in particular any septic or AWTS tank(s), tank access points, outlet filters and access, land application area and reserve areas and associated pipe lines between components. This is the same Site Plan required in H7.			
Note 1: On-Site Effluent Treatment Regional Plan (OSET Plan) Note 2: Use NZMS 260 series, scale 1:50,000			

B2. Legal description of land (as shown on Certificate of Title):

Lot No.		DP No.		Ct No.	
Other (specify)					

Please ensure copy of Certificate of Title is attached.

PART C: Site Assessment

C1. Has a Surface Evaluation been undertaken for this property?

Yes		No		(Please tick one)

If yes, please specify the findings of the Surface Evaluation, and if not please specify why this was not considered necessary.

C2. Has a Slope Stability assessment been carried out on the property?

Yes		No		(Please tick one)

If No, why not?

If Yes, please give details of report (and if possible, please attach report):

Author:	
Company/Agency	
Date of Report	
Brief Description of Report Findings	

C3. Site Characteristics – *Provide descriptive details below:*

Performance of Adjacent Systems:
Estimated Rainfall and Seasonal Variation: (Refer to OSET Plan Map 3)
Vegetation Cover:
Slope Shape:
Slope Angle:
Surface Water Drainage Characteristics:
Flooding Potential: YES/NO
If yes, specify relevant flood levels on appended site plan, i.e. one in 5 year and/or 20 year and/or 100 year return period flood level, relative to disposal area.
Surface Water Separation:
Site Clearances (Provide general description here and specific dimensions in Part 6 below and in Site Plan):
Site Characteristics:

C4. Describe the Site Geology of the subject property:

Geological Map Reference Number	

C5. What Aspect(s) does the proposed disposal system face (please tick)?

North		West	
North-West		South-West	
North-East		South-East	
East		South	

C6. Site clearances *(These must also be shown on the site plan)*

Separation Distance from	Treatment Separation Distance (m)	Disposal Field Separation Distance (m)
Boundaries		
Surface water		
Groundwater		
Stands of Trees/Shrubs		
Wells, water bores		
Embankments/retaining walls		
Buildings		
Other (specify):		

PART D: Site Assessment – Subsoil Investigation

D1. Identify the soil profile determination method:

Test Pit		(Depth_____m)		No. of Test Pits	
Bore Hole		(Depth_____m)		No. of Bore Holes	
Other (specify)					
Soil Report Attached?	Yes		No		*(Please tick)*

D2. Was fill material intercepted during the subsoil investigation?

Yes		No		*(Please tick)*

If yes, please specify the effect of the fill on wastewater disposal.

D3. Has percolation testing been carried out?

Yes		No		*(Please tick)*

If yes, please specify the method

Test Report Attached? (Please tick)		Yes		No	

D4. Are surface water interception/diversion drains required?

Yes		No		*(Please tick)*

If yes, please show on site plan

D5. State the depth of the seasonal water table:

Winter	(m)				
Summer	(m)				
Please indicate whether measured			or estimated		*(Please tick)*

D6. Are there any potential short circuit paths?

Yes		*No*		*(Please tick)*

If the answer is yes, please explain how these have been addressed

D7. Based on results of subsoil investigation above please indicate the disposal field soil category:

Is Topsoil Present?	If so, Topsoil Depth?	(m)

NZS 1547:2012 - Table E1

Soil Category	Classification	Properties
1	Sand	Very little to no coherence; cannot be moulded; single grains stick to fingers
2	Loamy sand	Slight coherence; forms a fragile cast that just bears handling; gives a very short (5mm) ribbon that breaks easily; discolours the fingers
	Sandy loam	Forms a cast but will not roll into a coherent ball; individual sand grains can be seen and felt; gives a ribbon 15-25 mm long
3	Fine sandy loam	As for sandy loams, except that individual sand grains are not visible, although they can be heard and felt; gives a ribbon 15-25 mm long
	Loam	As for sandy loams but cast feels spongy, with no obvious sandiness or silkiness; may feel greasy if much organic matter is present; forms a thick ribbon about 25 mm long
	Silty Loam	As for loams but not spongy; very smooth and silky; will form a very thin ribbon 25mm long and dries out rapidly
4	Sandy clay loam	Can be rolled into a ball in which sand grains can be felt; forms a ribbon 25-40 mm long
	Fine sandy clay	As for sandy clay loam, except that individual sand grains are not visible although they can be heard and felt; forms a ribbon 40-50 mm long
	Clay loam	Can be rolled into a ball with a rather spongy feel; slightly plastic; smooth to manipulate; will form a ribbon 40-50 mm long
	Silty clay loam	As for clay loams but not spongy; very smooth and silky; will form a ribbon 40-50 mm long; dries out rapidly
5	Sandy clay	Forms a plastic ball in which sand grains can be seen, felt or heard; forms a ribbon 50-75 mm long
	Light clay	Smooth plastic ball that can be rolled into a rod; slight resistance to shearing between thumb and forefinger; forms a ribbon 50-75 mm long
	Silty clay	As for light clay but very smooth and silky; will form a ribbon about 50-75 mm but very fragmentary; dries out rapidly
6	Medium clay	Smooth plastic ball, handles like plasticine and can be moulded into rods without fracture; some resistance to ribboning, forms a ribbon 75 mm or more long
	Heavy clay	Smooth plastic ball that handles like stiff plasticine; can be moulded into rods without fracture; firm resistance to ribboning; forms a ribbon 75 mm or more in length

Reasons for placing in stated category

PART E: Discharge Details

E1. Water supply source for the property (please tick):

Rainwater (roof collection)	
Bore/well	
Public supply	

E2. Calculate the maximum daily volume of wastewater to be discharged, unless accurate water meter readings are available *(Refer Schedule 6 and NZS1547:2012 Table H3).*

Number of Bedrooms		
Design Occupancy		(Number of people)
Per capita Wastewater Production		(Litres per person per day)
Other – Specify		
Total Daily Wastewater Production		(Litres per day)

E3. Do you propose to install?

a) Full Water Conservation Devices?	Yes		No		*(Please tick)*
b) Water Recycling – what %?	%		No		*(Please tick)*

If you have answered Yes, please provide additional information including the estimated reduction in water usage:

E4. Is Daily Wastewater Discharge Volume more than 2,000 litres?

Yes		No		*(Please tick)*

Note if the answer to the above is yes, then a resource consent for the wastewater discharge will be required from Bay of Plenty Regional Council.

PART F: Primary Treatment *(Refer NZS 1547:2012 Appendix J)*

F1. Indicate below the number and capacity (litres) of all septic tanks including type (single/dual chamber grease traps) to be installed or currently existing:

Number of Tanks	Type of Tank	Capacity of Tank (Litres)
	Total Capacity	

F4. Is a Septic Tank Outlet Filter to be installed?

Yes		No		*(Please tick)*

If yes, please state the type, manufacturer and serial number.

Must comply with NZS 1546.1:2008 Appendix D

PART G: Secondary and Tertiary Treatment

G1. Indicate the type of additional treatment, if any, proposed to be installed in the system (please tick):

Secondary Treatment			
Home aeration plant			
Commercial aeration plant			
Intermediate sand filter			
Recirculating sand filter			
Clarification tank			
Tertiary Treatment			
Ultraviolet disinfection			
Chlorination			
Other		Specify	

PART H: Land Application Method

H1. Indicate the proposed loading method (please tick):

Gravity	
Dosing Siphon	
Pump	

H2. Is a high water level alarm being installed in pump chambers?

Yes		No		*(Please tick)*

H3. If a pump is being used, please provide the following information:

Total Design Head		(m)
Pump Chamber Volume		(Litres)
Emergency storage volume		(Litres)

H4. Identify the type(s) of land disposal method proposed for this site (please tick) *(Refer NZS 1547:2012 Appendices K to N):*

Surface Dripper Irrigation	
Sub-surface Dripper Irrigation	
Standard Trench	
Deep Trench	
Mound	
Evapo-transpiration Beds	
Other (Please Specify)	

H5. Identify the loading rate you propose for the option selected in Part H, Section 4 above stating the reasons for selecting this loading rate: *(Refer NZS 1547:2012 Tables L1 and L2)*

Design loading rate (DLR)			(mm/day)
Disposal Area	Basal		(m^2)
	Total		(m^2)

Explanation *(Refer NZS 1547:2012 Appendix L and Appendix M)*

H6. What is the available reserve land application area? *(Refer NZS 1547:2012 5.5.3.4)*

Reserve Disposal Area (m^2)	
Percentage of Primary Disposal Area (%)	

H7. Provide a detailed description of the layout, design and dimensions of the land application system and show these on the (B1) Site Plan, in particular show the land application area and layout relative to property site features. Also show the reserve land application area:

Description and Dimensions of Disposal Field:

Refer to NZS 1547:2012 Appendix R

Site Plan Attached?	Yes		No		(Please tick)

If not, explain why not.

PART I: Maintenance and Management *(Refer NZS 1547:2012 section 6.3 and Appendix U)*

I1. Has a maintenance agreement been made with the treatment and disposal system suppliers?

Yes		No		*(Please tick)*

PART J: Risk Management

J1. Is a Risk Reduction Report included with application? *(Refer NZS 1547:2012Appendix A. Ensure all issues concerning potential effects addressed)*

Yes		No		*(Please tick)*

J2. Are there any specific environmental constraints?

Yes		No		*(Please tick)*

If Yes, please explain

PART K: Is your application complete?

K1. In order to provide a complete application you have remembered to:

Fully complete this **Site and Soil Evaluation Checklist**	
Include a **Location Plan** and **Site Plan** (see B1 and H7)	
Include a **Property Title** (Certificate of Title)	
Attach a **Risk Reduction Report** – NZS1547:2012 Appendix A	

K2. Declaration

I hereby certify that, to the best of my knowledge and belief, the information given in this application is true and complete.

Name		**Signature**	
Position		**Date**	

Schedule 6: Occupancy Allowances

Facility	Occupancy For Design Purposes
Homes	
Number of Bedrooms (Notes 1, 2 and 3)	
1	2
2	4
3	5
4	6
5	8
6	9
Hotels & Motels	
Guests	Maximum Occupancy/number of beds
Staff	Maximum number of staff
Hospitals (Note 3)	
Patients	1 per bed (Note 3)
Staff	Maximum Number of Staff
Retirement Villages (Note 3)	
1 bedroom	1.3p per unit
2 bedroom	1.3p to 2.0p per unit
3 bedroom	2p – 4p per unit
Staff	Maximum Number

Notes:

1 *In situations where large modern dwellings are proposed which have additional rooms beyond those allocated as dining, lounge, bedrooms, (e.g. "family", "recreation", "games", "office", "study", "sewing", "work" rooms) which could have potential to be utilised as bedrooms with different furnishings, an additional occupancy allowance is to be made on the basis of 1 extra person times the ratio of the total floor area of the additional room(s) to that of the smallest designated bedroom and rounded up to the next whole number.*

2 *Design occupancy should allow for a seasonal peak, not just the average daily flow. Holiday homes tend to have intermittent occupancy but when occupied are likely to have a higher occupancy than a continuously occupied dwelling. An allowance in design occupancy should be made for the seasonally higher flows.*

3 *Occupancy data in this table is from the literature and observed levels. A higher water use/person should be allowed in facilities providing community care unless specific water meter data is available. Retirement village average occupancy from observed rates and the literature is 1.3 people per unit with occasional overnight guests. In the case of retirement homes occupancy should be based on the number of beds per bedroom.*

Schedule 7: Manufacturers Engineering Design Producer Statement

Issued by: (Manufacturer or supplier) _____

To: (Client) _____

To be supplied to: Bay of Plenty Regional Council and _____District Council

In respect of: (Product description)_____

At: (Location) _____

NZ Grid Reference: (WGS84) _____

Legal description: (From land title) _____

District Council: _____

Site address: _____

Product Design Details: _____

_____

_____

_____

NZ Standard: (NZS) _____

Schedule 5 On-site Wastewater Disposal Site and Soil Evaluation Checklist issued by:

_____ on_____

Other resources used for this design include: _____

This is an independent design, covered by a current policy of Professional Indemnity Insurance.

I BELIEVE ON REASONABLE GROUNDS that this design has been carried out in accordance with best practice in engineering design principles and procedures.

NOTE: This statement does not approve the installed system.

Disclaimer

The Client is to make full disclosure of relevant information on existing and/or proposed activities on the site that will influence estimation of likely daily wastewater quantity and quality (in particular any chemicals in the water supply and/or wastewater stream potentially toxic to biological wastewater processes). This design is based on the site assessment carried out by _____ and recorded in the On-site Wastewater Disposal Site and Soil Evaluation Checklist for the site. Subsequent changes to the site that might affect the topography and soil profiles are to be notified by the client. Failure, by the Client, to provide this information will invalidate this Manufacturers Engineering Design Producer Statement.

Approval is to be sought from _____, should variations to the specification and layout in this report/drawing be considered necessary by the installer prior to or at the time of installation. Failure to do so will invalidate this Manufacturers Engineering Design Producer Statement and _____ will no longer take responsibility for the design.

Dated: _____

Signed: _____

Name: _____

Address: _____

Schedule 8: On-site Wastewater Completion of Works Installation Certificate

To be completed by the installation contractor

Date: _____

Installing Company: _____

Site details

Address: _____

_____

Legal Description: _____

Client: _____

Client Address: _____

_____

Description of project

(State all details relevant to the installation including; occupancy numbers, the sizes and capacities of any equipment, such as pipes, tank(s), pump(s), siphon(s), automatic sequencing valve(s), the wastewater treatment unit, outlet filters, land application area and note any site constraints.)

_____

_____

_____

_____

_____

_____

(Attach a detailed 'as-built' plan to scale showing the location of all parts of the wastewater management system and site facilities; including pipework, septic and other treatment tanks, outlet filter, land application and/or irrigation areas, reserve areas, paths, buildings, driveways, services. Show separation distances, and property boundaries.)

Resource Consent Number: _____

Installed in accordance with:

(Quote relevant sections of the Bay of Plenty Regional Council On-Site Effluent Treatment Regional Plan, the NZ 1547:2012 Standard and Manufacturers Design Certificate.)

_____

_____

_____

_____

_____

Report

(Describe variations to installation and provide technical justification for any deviation from the NZ 1547:2012 Standard, the On-site Wastewater Disposal Site and Soil Evaluation Checklist for the site and the Manufacturers Engineering Design Producer Statement.)

_____

_____

_____

_____

Declaration

I am a suitably qualified person to undertake this installation and subject to any variations reported in this **On-site Wastewater Completion of Works Installation Certificat**e, I do hereby declare that all of the wastewater works for this installation have been completed in accordance with:

1 The requirements of the **Bay of Plenty Regional Council On-Site Effluent Treatment Regional Plan** ;
2 The relevant sections of the **NZS 1547:2012 On-site domestic wastewater management;**
3 The completed **On-site Wastewater Disposal Site and Soil Evaluation Checklist** for the site, and
4 The attached **Manufacturers Engineering Design Producer Statement**.

Installer's Signature: _____

Installer's Name: _____

Date of final site installation inspection: _____

Attachments:

1 A detailed 'as-built' plan to scale.
2 A copy of the Manufacturers Engineering Design Producer Statement for the system installed.
3 A signed copy of the results of commissioning test(s).
4 A copy of any relevant District Council planning consent and regulatory authority approval(s) or Certificate(s) of Compliance.

Send this **On-site Wastewater Completion of Works Installation Certificat**e and attachments to**:** Bay of Plenty Regional Council, PO Box 364, Whakatane 3158.

A copy of this certificate and attachments must be given to the client, who may choose to supply a copy to their District Council for filing on their property file.

Ancillary information

1 The installer, supplier and manufacturers contact details and emergency contact number for repair or maintenance: _____

_____

_____

2 Servicing schedule and clients maintenance duties:

_____

_____

_____

_____

_____

_____

_____

_____

_____

Installation contractors

Installation contractors may include licensed drainlayers and plumbers, technical or professional engineering people or any other persons with appropriate competence and experience in construction and installation. Contractors should ensure that they:

1 Have attended an appropriate accredited training programme which should include training in the theory of current and contemporary design approaches and installing on-site systems;
2 Consult with the designer on the intention of the design, and the installation/construction methods and procedures essential to achieving design integrity;
3 Liaise with the designer during installation/construction so that a certificate of compliance with design can be competed, particularly when unusual or innovative design approaches are been used that are beyond their current experience, and
4 Certify with the designer that all equipment incorporated as part of the on-site system has been installed in accordance with the manufacturers or suppliers instructions and in accordance with any other conditions established by the regulatory authority.

Schedule 9 Maps of Rotorua Lakes Catchments

Map 4 Rotorua Lakes Catchments
Map 5 Lakes Rotoehu and Rotoma
Map 6 Lakes Rotoiti and Rotokawau
Map 7 Lakes Okataina and Okareka
Map 8 Lakes Tarawera, Tikitapu and Rotokakahi
Map 9 Lakes Rotomahana, Rerewhakaaitu and Okaro
Map 10 Lake Rotorua

Schedule 10 Maintenance Zone Maps

Map 11	(Sheet 1 of 1)	Gisborne Point
Map 12	(Sheet 1 of 1)	Hinehopu
Map 13	(Sheet 1 of 2)	Lake Rotoma
Map 13	(Sheet 2 of 2)	Lake Rotoma
Map 14	(Sheet 1 of 3)	Lake Tarawera
Map 14	(Sheet 2 of 3)	Lake Tarawera
Map 14	(Sheet 3 of 3)	Lake Tarawera
Map 15	(Sheet 1 of 1)	Tanners Point
Map 16	(Sheet 1 of 1)	Ongare Point
Map 17	(Sheet 1 of 1)	Te Puna West
Map 18	(Sheet 1 of 1)	Mamaku
Map 19	(Sheet 1 of 1)	Bryans Beach

Schedule 11 Reticulation Zone Maps

For the purposes of this plan any underlined area identified on the following maps is identified as a Reticulation Zone.

Operating Reticulation Zones

Map 20	Lake Rotorua Rotokawa
Map 21	Lake Rotorua Hinemoa Point
Map 22	Lake Rotorua Brunswick
Map 23	Lake Rotorua Brunswick stage 4 and 6
Map 24	Lake Rotorua Hamurana
Map 25	Mourea
Map 26	Okawa Bay
Map 27	Lake Rotoiti Ōkere Falls/Otaramarae
Map 28	Lake Ōkāreka/Blue Lake
Map 29	Paradise Valley

Confirmed Reticulation Zones

Map 30	Matatā

Future Reticulation Zones

Map 31	Tumoana
Map 32	Lake Rotoiti Gisborne Point
Map 33	Lake Rotomā
Map 34	Rotoehu
Map 35	Lake Tarawera
Map 36	Clayton Road/Mountain Road
Map 37	Ngongotahā Road
Map 38	Mamaku

Definition of Terms

Aerated Wastewater Treatment System (AWTS) - A system of treatment of wastewater in tanks; following anaerobic treatment, a process of aeration followed by clarification is used to achieve the biological treatment of wastewater. The resulting secondary treated effluent is then discharged to a land application system for further treatment in the soil. A list of approved AWTS systems can be viewed on the Bay of Plenty Regional Council website.

Aerated Wastewater Treatment System with Nutrient Reduction (AWTS+NR) - A system similar to the AWTS described above but uses additional processes to achieve a reduction of nutrients (mainly nitrogen) in the wastewater. The resulting low nutrient secondary treated effluent is then discharged to a land application system for further treatment in the soil. A list of approved AWTS+NR systems can be viewed on the Bay of Plenty Regional Council website.

Aerobic – Aerobic conditions are when ample free oxygen is available to maintain bacterial (aerobic bacteria) activity and produce non-odorous by products.

Bed of a lake or river[3]– *means –*

(a) In relation to any river—
- *(i) For the purposes of esplanade reserves, esplanade strips, and subdivision, the space of land which the waters of the river cover at its annual fullest flow without overtopping its banks:*
- *(ii) In all other cases, the space of land which the waters of the river cover at its fullest flow without overtopping its banks; and*

(b) In relation to any lake, except a lake controlled by artificial means,—
- *(i) For the purposes of esplanade reserves, esplanade strips, and subdivision, the space of land which the waters of the lake cover at its annual highest level without exceeding its margin:*
- *(ii) In all other cases, the space of land which the waters of the lake cover at its highest level without exceeding its margin; and*

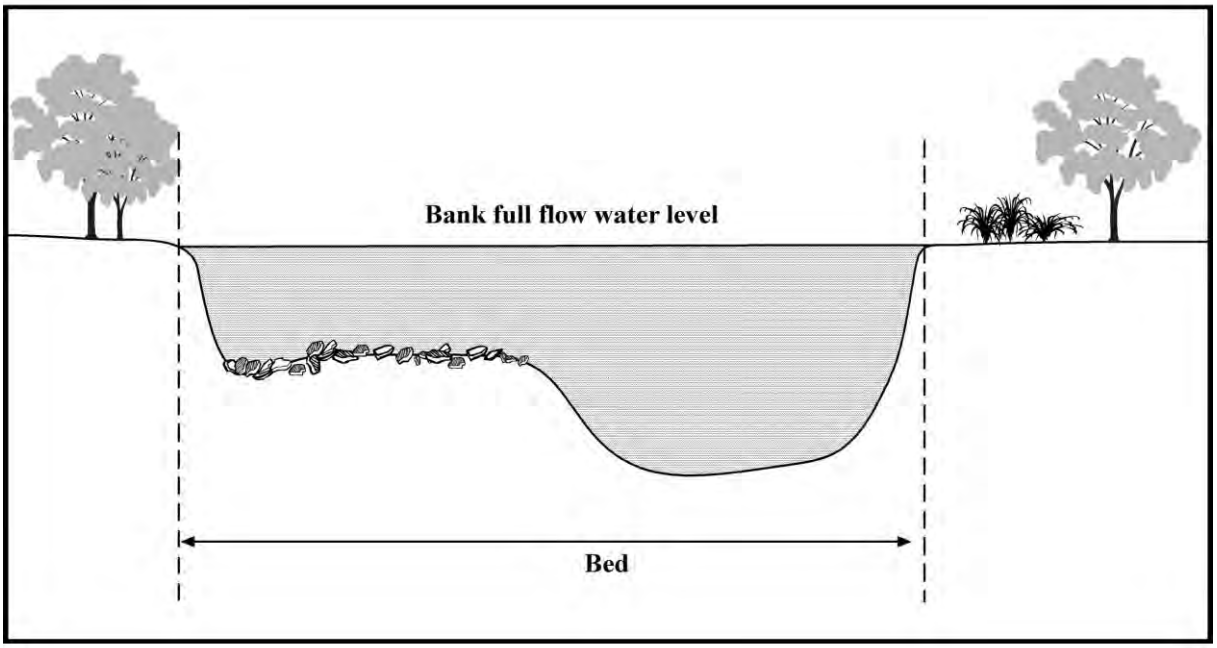
(c) In relation to any lake controlled by artificial means, the space of land which the waters of the lake cover at its maximum permitted operating level; and

(d) In relation to the sea, the submarine areas covered by the internal waters and the territorial sea:

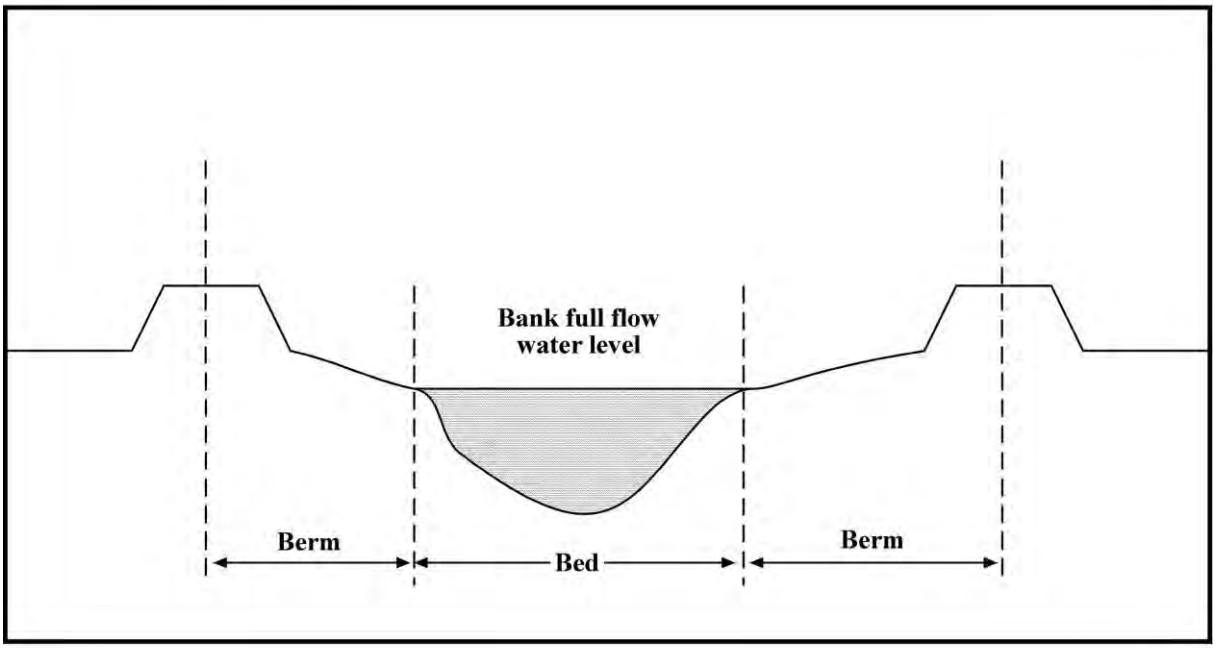
Refer Figure 6 for guidance.

[3] Terms in *italic* text are defined by the Resource Management Act 1991 (the Act). The Act definitions are included in this Plan for information only, and are correct at the date of public notification of this Plan.

A River or Stream



B River with Stopbanks



Note: These diagrams are indicative only, and are intended to provide general guidance.

Figure 6 Bed of a River

Bedroom – A bedroom is a room used for sleeping. It includes those rooms which are designated as an office, study, sewing or work rooms which have the potential with different furnishings to be used as bedrooms. Any space with an opening to an adjoining room wider than 1.2 metres shall not be considered as a bedroom. For design occupancy allowances see Schedule 6.

Biochemical Oxygen Demand (**BOD_5**) – The amount of dissolved oxygen consumed by microbiological action where a sample is incubated over five days at 20 degrees Celsius.

Blackwater – Wastewater discharge from water closets (flush toilets) systems and urinals.

Blowout – Where water in a channel gains enough energy and volume to burst out of the channel.

Biochemical Oxygen Demand (BOD_5) - The amount of dissolved oxygen consumed by microbiological action where a sample is incubated over 5 days at 20 degrees Celsius.

Community Facilities (on Māori Land) – Means buildings used directly in association with papakāinga housing on multiple Māori or ancestral land for occasional educational and health related activities, administration facilities and activities directly associated with each of these foregoing uses, but not being for the purposes of Marae.

Conductivity – A measure of the quantity of dissolved ions in solution.

Domestic Wastewater – Wastewater (influent) originating from household or personal activities including toilets (water closets), urinals, kitchens, bathrooms (including shower, washbasins, bath, spa bath but not spa pools or hot tubs) and laundries. Includes wastewater flows from facilities serving staff/employees/residents in institutional, commercial and industrial establishments. It is important to note that when other waste streams are mixed with domestic wastewater the resultant contaminant is to be administered under the operative Regional Water and Land Plan not this regional plan.

Dripper – A small bore flexible pipe incorporating devices which emit small volumes of secondary or tertiary treated effluent.

Effluent – In the context of this regional plan, is the wastewater liquid being discharged from an on-site effluent treatment system into the environment.

Ephemeral flowpath – An ephemeral flowpath is where any one of the following criteria are met:

(a) The flow path is an entrenched dry gully greater than 1 metre deep.
(b) There is clear evidence of a channel within the valley system where overland flow occurs from time to time.
(c) There is clear evidence of erosion (such as gullying or headward gully erosion) associated with short term water flow from time to time within the valley system.

An ephemeral flowpath excludes the following:

(a) A valley that does not show any evidence of overland flow channels, or erosion as a result of overland flow.

Refer to the following photographs to assist in the interpretation of Ephemeral Flowpath.

Example 1

The flow path is an entrenched dry gully greater than 1 metre deep. This site would qualify as an ephemeral flowpath.

Example 2

There is clear evidence of a channel within the valley system where overland flow occurs from time to time.

This site would qualify as an ephemeral flowpath.

Example 3

There is clear evidence of erosion (such as gullying or headward gully erosion) associated with short term water flow from time to time within the valley system.
This site would qualify as an ephemeral flowpath.

Example 4

The presence of the actively eroding gully head associated with stormwater flow indicates that this valley would be classified as an ephemeral watercourse. Without the presence of the eroding gully system, the valley would not be considered an ephemeral flowpath.

Example 5

The valley does not show any evidence of overland flow channels, or erosion as a result of overland flow.

This site would not qualify as an ephemeral flowpath.

Enterococci – Bacteria originating in the gut of warm blooded animals. Enterococcal numbers have been found to correlate well with the incidence of gastroenteritis in bathers.

Eutrophication – an enrichment of water with nutrients with resultant high primary productivity.

F-specific bacteriophage – See indicator bacteria.

Faecal Coliforms – Coliform bacteria which are usually associated with faecal matter.

Greywater – Domestic wastewater from kitchen, bath , shower, basin and laundry, but excluding toilet (water closet) or urinal wastes and waste from a kitchen waste disposal unit (garbage grinder). Greywater can vary from low to high health risk and must be managed accordingly. The liquid fraction of a wastewater flow into or out of a composting toilet is wastewater not greywater.

Grouped data – Where bacterial or chemical analysis results from similar sites are combined for statistical analysis.

Highest Groundwater Table – The highest level that the water table reaches, for a period longer than one week per year.

Indicator Bacteria – Bacteria, for example faecal coliforms, enterococci F specific bacteriophage, which are used to indicate the presence of pathogens or other micro organisms of interest.

Infiltration – The rate at which water is transferred into the soil at a soil/water interface.

Irrigation - The distribution of effluent into the topsoil by a shallow subsurface or covered surface drip irrigation system, a shallow subsurface LPED irrigation system or an above ground irrigation system.

Land Application System – The system used to apply effluent from a wastewater treatment unit into or onto the soil for further in-soil treatment and absorption or evaporation.

LPED Irrigation System – Shallow subsurface irrigation of effluent into topsoil using a dosing system into low pressure effluent (LPED) distribution lines.

LPED Line – A pressure line perforated with drilled squirt holes and nestled in a distribution line.

Maintenance Zone – A zone established to define an area and properties within which the cumulative contamination from on-site effluent treatment systems is contributing to the degradation of waterways, waterbodies or the marine environment or causing a risk to public health. Every on-site effluent treatment system within a Maintenance Zone is subject to a maintenance and performance inspection and OSET Approval programme. Maintenance Zone maps are shown in Schedule 10.

On-site Effluent Treatment National Testing Programme (OSET NTP) – A programme that undertakes performance testing of ex-factory on-site wastewater treatment units. The programme is operated by the Small Wastewater And Natural Systems Special Interest Group (SWANS-SIG) on behalf of Water NZ at the Rotorua National OSET Test Facility located within the Rotorua City Wastewater Treatment Plant. The National Test Programme involves benchmark testing, field testing of specific treatment unit models installed around NZ, and product testing and certification to ensure structural and component operational integrity.

On-site Effluent Treatment System - An on-site domestic wastewater management system that receives, treats and applies wastewater to a land application system or a holding tank.

Operating Reticulation Zone – A zone established to define an area and properties within which domestic wastewater is to be discharged into a district council sewerage reticulation system. Operating Reticulation Zone Maps are shown on Schedule 11.

OSET Approval – a written approval issued by Bay of Plenty Regional Council to a landowner to verify that the on-site effluent treatment system servicing their single domestic dwelling meets those rules, conditions, standards and requirements of this regional plan that apply to the treatment system, effluent quality and property location.

Outlet Filter - A device fitted to, in place of, or immediately downstream of the outlet tee on a septic tank so that it retains total suspended solids greater than 3 mm size in the tank, so preventing their carry-over into the land application system.

Papakāinga Housing - Means multiple housing development on multiple-owned Māori land or ancestral land or General land owned by Māori under Te Ture Whenua Maori Act 1993, developed using the *"Te Keteparaha Mo Ngā Papakāinga – Māori Housing Toolkit"* in the Western Bay of Plenty District or Tauranga City local authority areas.

Pathogens – Also pathogenic bacteria. Pathogens are disease causing bacteria, and viruses.

Percolation – The process by which water moves through soil after it has infiltrated.

Permeability – The soil characteristic that expresses how rapid percolation is.

Property Title – In relation to any land means the fee simple title; or, where the land is Maori freehold land, the Maori freehold title; and, in the cases of a unit title under the Unit Titles Act 1972 or a title for an undivided share in a fee simple or leasehold with or without any other interest in land means the parent fee simple title from which or from the lease of all or part of which that unit title or that undivided share title issued.

Reticulation and or Wastes – The system of pipes that conveys liquid. This can be water reticulation for water supply or sewerage reticulation for wastewater.

Secondary Treatment – Aerobic biological processing and settling or filtering of effluent received from a primary treatment unit. Effluent quality following secondary treatment is expected to be equal to or better than 20 grams per cubic metre 5-day biochemical oxygen demand and 30 grams per cubic metre suspended solids.

Septage – Liquid or solid material removed from a septic tank, cesspool, portable toilet, or similar system that receives only domestic (non-commercial) waste.

Septic Tank – A single or multiple chambered tank through which wastewater is allowed to flow slowly to permit suspended matter to settle and be retained, so that any organic matter in it can be decomposed (digested) by anaerobic bacteria.

Septic Tank System – Refer to on-site effluent treatment system.

Sewage – Liquid waste matter which is carried off by sewers.

Sewerage – A network of sewers (or drainage pipes) used to convey wastewater by gravity and/or pumping stations and pressure lines.

Shear Plane – A zone of differential permeability in soil or rock which water preferentially travels along and which the rock or soil will preferentially fracture along. This can be a problem if hill soils become unstable as a result of saturation due to on-site effluent treatment.

Soak hole – Is an effluent treatment hole with the following characteristics:

- A hole of some depth, backfilled with media which allows the movement of effluent to depth. It may be lined with porous concrete soak ring(s),
- Compared with a land application system, a soak hole provides substantially less effluent treatment in the soil.
- A soak hole usually relies on hydraulic pressure to push effluent into the underlying substrata.

Note that Policy 3 of this regional plan is to phase out the use of soak holes as a form of disposal of primary treated effluent in those areas where such systems do not constitute the best practicable option.

Splash Zone – The land/water interface for lakes, estuaries and the open coast. The part of the water body where children splash about and play.

Suitably Qualified and Experienced Person – A person who is independent, applies good professional practice, is familiar with wastewater disposal and competent to make reports in accordance with the relevant New Zealand Standards and this regional plan. The person will have attended a training course approved by Bay of Plenty Regional Council and be accredited in site and soil assessment for on-site wastewater management system design. The person may be a member of a professional body.

Surface Waterbody – means freshwater in a river, lake, stream, pond, or wetland, that is not located within the coastal marine area.

Tauranga City Urban Area – All land within the Tauranga City Council local authority area excluding the land within the Rural, Rural Marae Community, Greenbelt, Future Urban, Rural Residential, Education Centre 2 and Education Centre 3 Zones, as identified in the Tauranga City Plan.

Treatment Area – The treatment area is the area within which the on-site effluent treatment system is located on a Lot (section). It includes the pre-treatment unit (septic tank or AWTS), the associated land application system and the reserve area set aside for future extension or duplication of the land application system. The treatment area incorporates the surface area within which the land application system is installed, together with the volume of soil below the base of the system to a minimum depth of 600 millimetres.

Trophic Level Index (TLI) – A numeric system for the monitoring of lake quality adopted by the Ministry for the Environment. TLI is determined using measurements of chlorophyll (Chla mg m-3), Seechi depth, Total Phosphorous (TP) and Total Nitrogen (TN). The TLI value integrates measures of key nutrients and algal production over a year, giving an indication of the overall quality of the lake. The TLI number increases as water quality decreases.

Urban Development – Development in urban areas including but not limited to residential, commercial, recreational or industrial zones.

Vibrio sp. – A genus of bacteria, most species of which are aquatic. Marine vibrios can cause gastroenteritis if infected seafood is eaten raw or poorly cooked.

Wastewater – The used water or influent arising from domestic activities in dwellings, institutions or commercial facilities and includes domestic wastewater, greywater, or blackwater. Wastewater is defined as foul water in the New Zealand Building Code.

Water[4] –

(a) Means water in all its physical forms whether flowing or not and whether over or under the ground:

(b) Includes fresh water, coastal water, and geothermal water:

(c) Does not include water in any form while in any pipe, tank, or cistern.

Water Table – The level below which fissures and pores in the soil or strata are saturated with water. Surface of the groundwater in an unconfined aquifer.

[4] Terms in *italic* text are defined by the Resource Management Act 1991 (the Act). The Act definitions are included in this Plan for information only, and are correct at the date of public notification of this Plan.

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Appendix A Extracts from "Ngaa Tikanga Tiaki I Te Taiao" which relate to On-Site Effluent Treatment

Reference: *Ngaa Tikanga Tiaki I Te Taiao — Maori Environmental Management in the Bay of Plenty Regional Policy Statement.* Consultants Report on Maori Environmental Management and issues of significance to Maori for inclusion in the Regional Policy Statement, 7 May 1993.

1 Issues

- Effects on both physical and spiritual resources of Maori regarding:
  - taiapure
  - kaimoana
  - waahi tapu etc.
- Impacts on mahinga kai (access and use).
- Pollution potential and nutrification associated with run-off into rivers and lakes.
- Degradation in water quality due to discharge of human wastes.
- The discharge of sewage into underground water supplies.
- Land-based treatment systems as an alternative to discharge into tribal waters. Promote the use and development of land based treatment systems as an alternative contaminant carrier.
- Costs to initiate alternative forms of treatment.
- What level of treatment is to be undertaken to remove negative environmental impacts and how is it to be enforced?

2 Explanation

Water provides Maori with food and spiritual resources. These resources are directly impacted on when subject to various degrees of pollution especially with regard to the mauri of those resources. These may give economic benefits to the wider public community, but a significant cost to Maori. Any impact on these resources seriously restricts iwi/hapu ability to utilise food resources appropriate to their needs, e.g. food (polluted) cannot be used for hui with respect to manaaki ki nga manuhiri, forcing tangata whenua to buy food for the marae, thus placing an economic burden on tangata whenua to purchase food. Specific examples of this were given in the Rotorua hui with respect to koura and kaimoana of their lakes.

Any spiritual impact on the mauri of the water has an impact on waahi tapu, areas for healing and cleansing, tohi and purification rites. Those consulted want the degradation of tribal waters to be stopped.

Iwi/hapu are the first people to experience the hands-on impacts of pollutants. They have a desire to be involved in the consent process applicable to their rohe (where appropriate to their strategy). The issue of iwi/hapu involvement must be considered in decision making.

Lake Rotorua has a high level of nutrients promoting algae and weed growth. The nutrification process blocks up waterways for recreation and food access; problems of smell and visual impacts increase. Weed problems incur cost - not just to Maori but to the

general public in terms of having to remove weed to improve water quality. This also has an impact on tourism and fisheries.

In both traditional and contemporary Maori society all wastes were returned to Papatuanuku, who was the agent of purification. Maori in the Bay of Plenty do not accept that their waterways should continue to be used to transport or treat contaminant waste. Where appropriate, waste should undergo a form of land based treatment, which would remove the need to discharge into natural waters.

2.a Explanation - Septic Tanks

The type of tanks used, land structure and permeability create problems for Maori. (The nature of human effluent has both cultural and spiritual abhorrence to Maori).

A number of tank designs are not suited to the land's capability to accommodate adequate treatment of waste. The sewage from tanks could mix with groundwater or discharge directly, if in steep, sloping or undulating country, into lakes or rivers. This raises problems for Te Arawa in terms of their lakes, and Ngati Awa regarding Ohope and Otarawairere. The problem is a public problem not just a Maori problem.

There are general issues of developing policies to regulate/monitor a more effective form of waste treatment and disposal. Alternatives provided by new technology are available, but the issue of costs could be a major deterrent to change. People's attitudes towards dealing with new options also need to change, possibly requiring re-education on current concepts.

3 Objectives

(a) Take into account the principles of the Treaty of Waitangi in the decision making process.

(b) Iwi/hapu to be actively involved in the sustainable management of such sites, i.e. input into decision-making processes where appropriate to tangata whenua needs.

(c) Develop a Maori water classification strategy.

(d) Ensure that the level of treatment is sufficient to retain Maori classification of water quality (as well as meeting standards set in the Resource Management Act).

(e) Develop policies to remove or reduce the discharge of waste from tribal waters.

(f) Develop alternative options for waste treatment and disposal, i.e. water as a carrier, systems.

(g) Promote the use and development of land-based systems.

(h) Promote the investigation and development of land audit/inventory into the suitability of specific land areas to be a receiver of treated waste.

(i) Review/audit current consents to discharge into water to determine if land-based options can be appropriate to use as an alternative (issues of costs).

(j) Set aside sufficient funding resources for the above objectives to be implemented.

4 Policies

(a) Ensure that the management of water resources meets the needs of Maori.

(b) Develop greater levels of awareness of tangata whenua resource management strategies.

(c) Assist iwi in the development of a Maori water classification strategy and incorporate this classification in plans and policies on water management. A major problem is determining a Maori Environmental Resource Strategy which could be

linked to Maori classifications of resource protection. These are applicable under the provisions of the Resource Management Act.

(d) Formalise a process for tangata whenua to become involved in decision making processes.

(e) Assist tangata whenua participation in resource management issues in areas of significance to them.

(f) Ensure that developers adhere to water classification standards and meet the needs of Maori classification and thus recognise the principles of the Treaty of Waitangi.

(g) Set aside sufficient funding for rehabilitation programmes (e.g. as a bond) in case the developer leaves the business. A bond requirement may not necessarily have influence on the developer to clean up the site, but may act as some incentive.

5 Methods

(a) Determine a Maori water classification strategy that is consistent with the Resource Management Act, which can be used as a base for monitoring purposes.

(b) Resource iwi/hapu to participate in resource management issues appropriate to them by providing both financial and training support and adequate information and databases on resource issues relevant to tangata whenua.

(c) Establish training programmes for iwi/hapu resource people to become skilled in water resource management issues.

(d) Establish a tribal resource inventory (information may be contained in iwi management plans or held by iwi) of areas of significance that may be impacted on by contaminants.

6 Results Anticipated

(a) Maori classification of waters may be much stronger than current water standards, thereby reducing the level of contaminants.

(b) Maori participation in implementation and decision-making processes will make developers aware of the need to improve their disposal and treatment methods, i.e. improve standards of water quality.

(c) Tangata whenua water classification policies will be promoted and developed in resource decisions. Taonga will be protected, thus ensuring the integrity of Maori spiritual beliefs.

7 Monitoring Procedures

(a) Tangata whenua to become actively involved in the monitoring process who have undergone training through Bay of Plenty Regional Council.

Protection of Physical Elements: Ancestral Lands, Water, Sites, Waahi Tapu and other Taonga

Water resources, ancestral lands, sites, waahi tapu and other taonga are of central importance to a Maori Environmental Resource Management System. Waahi tapu and their care and protection are vital to the identity of iwi/hapu.

1 Issues

(a) Recognition of the relationship of Maori and their culture and traditions, and provision for the protection of ancestral lands, water, sites, waahi tapu and other taonga.

(b) Recognition that in protecting the mauri of water resources, the quantity of the water resource and its quality are of equal importance.

(c) Recognition that the discharge of untreated sewage or other industrial, chemical or human waste into waterways destroys the mauri of the resource and thus is unsustainable management.

2 Explanation

The establishment of provisions for iwi/hapu to monitor the effects of policies, plans and resource consents as a primary policy will require a set of methods to be agreed between Tangata whenua and Bay of Plenty Regional Council.

3 Objectives

(a) Provision of resources and inclusion in the decision making procedure together with scope for iwi/hapu to establish a monitoring process of applications for resource consents which may impact on Maori.

(b) Provision of resources and access to information for iwi/hapu to establish a monitoring process of the implementation of regional policies and plans.

(c) Provision of resources and access to information for iwi/hapu to establish a process to monitor the impacts of resource consents.

4 Policy

Consultation is a key process for the proper recognition of tino rangatiratanga. There are three levels of consultation as envisaged in the Resource Management Act:

(a) With tangata whenua, meaning the iwi/hapu with mana whenua in the area being considered. (Tangata whenua can also include all Maori of the region.)

(b) With iwi/hapu authorities as identified and listed in the process set out in the Regional Policy Statement.

(c) With kaitiaki. This process will depend on an iwi/hapu based identification process. The kaitiaki can be multi-tribal for resources such as geothermal, which cross tribal/sub-tribal boundaries.

Establishment of consultation and information transfer processes with iwi/hapu, in the first instance through the listed iwi/hapu authorities.

Iwi/hapu authorities are recognised by the iwi/hapu as their authority both through legal representation and through popular support from within the iwi/hapu.

Create and resource a process to identify and communicate with kaitiaki in conjunction with iwi/hapu.

While the transfer of powers provisions of the Resource Management Act are a step towards recognition of te tino rangatiratanga of the iwi/hapu, they need to be accompanied by an equivalent transfer of resources.

Investigate and negotiate the transfer of powers and management resources in relation to "taonga" resources which iwi/hapu seek to control and manage.

Appendix B Sludge and Scum Accumulation Rates Formulae

Equations for calculating the per capita sludge and scum accumulation in septic tanks are provided by the US Environmental Protection Agency, based on studies by the Public Health Service. Provided by Alan Graham of Waste Technology, Invermay, Dunedin.

Formula 1

Equations for calculating the per capita sludge and scum accumulation in septic tanks are provided by the US Environmental Protection Agency, based on studies by the Public Health Service:

Sludge accumulation	=	(26.9 TC + 128.1 C)
where T	=	time in years
and C	=	no. of people
Scum accumulation	=	(17.3 TC + 39.7 C)

These equations have a 95% confidence level; i.e., accumulation rates will be greater no more than 5% of the time.

Practically, these equations may be combined to give:

Sludge+scum accumulation = (44.2 TC + 167.8 C)

To use this equation, accumulation would be calculated yearly from the time of cleaning or installation of a septic tank. To accommodate varying occupancy levels in a dwelling, the equation can be modified to:

Sludge+scum accumulation = (44.2 $\sum$[tC] + 167.8 $\sum$[tC]/T)

Where C = every person who has occupied the dwelling

t = time (in years) every person has occupied the dwelling

T = time (in years) since installation or last pumping

Formula 2

Another approach to calculating scum+sludge quantities in a septic tank is to calculate on the basis of

80 litres per year per person-year of occupancy,
plus 60 litres per person for current occupancy level.

This formula is theoretically more sound and is based on consideration of the biochemical degradation of biological wastes and the volumes occupied by digesting and digested sludge. This formula acknowledges that although digested sludge continuously accumulates, the volume occupied by digesting sludge varies with occupancy level over a time frame of a few weeks.

The shaded areas in Tables 13 and 14 indicate the number nearest to 1200, which is the recommended maximum sludge volume before cleaning is required.

Table 13 Sludge Accumulation (ℓ) Formula 1

NUMBER OF PEOPLE								
NUMBER OF YEARS		1	2	3	4	5	6	7
	1	212				1060		1484
	2		512		1024	1281	1537	
	3			901	1201	1502		
	4		689	1033	1378			
	5	338		1166		1944		
	6							
	7							
	8		1042					
	9		1131					
	10	609.8	1219					

Table 14 Sludge Accumulation (ℓ) Formula 2

NUMBER OF PEOPLE								
NUMBER OF YEARS		1	2	3	4	5	6	7
	1	140					840	980
	2		440			1100	1320	1540
	3			900	1200	1500		
	4			1140	1520			
	5			1380				
	6		1080					
	7	560	1240					
	14	1180						