



STAFF REPORT

TO: Environment & Planning Subcommittee

FROM: Michael Durand - Co-ordinator Natural Resources Consents

REFERENCES: RM070049

SUBJECT: **B R REILLY, J M REILLY, D A EARLE and G R MILNES - REPORT EP07/11/15 - Report prepared for 26 and 27 November hearing**

1. INTRODUCTION

The applicant proposes to establish a tourist venture in the Pupu Valley, Golden Bay, which involves a visitor centre with a large freshwater aquarium, accommodation units and dining facilities. A suite of resource consent applications have been made and these have been assessed in a number of individual staff reports.

This report discusses the proposed discharge to land of domestic wastewater at the site. An evaluation of the proposed wastewater system and discharge is made, and the report then discusses the potential adverse effect on environment and makes a recommendation with regard to the granting of resource consent for the proposed activity.

2. PROPOSED TASMAN RESOURCE MANAGEMENT PLAN (PTRMP) ZONING, AREAS AND RULES AFFECTED

The application site does not lie within the Wastewater Management Area or any of the Special Domestic Wastewater Disposal Areas listed in the TRMP, and therefore the relevant Permitted Activity rule at the subject site is 36.1.4. The proposed discharge does not meet rule 36.1.4(b) because the peak flow volume is expected to be up to 9000 litres per day. A resource consent is required for this activity, and the status of that consent application is discretionary.

3. SUBMISSIONS

3.2 Summary of submissions commenting on wastewater matters:

Table 1: Summary of submissions with respect to wastewater discharges

Submitter	Reasons	Comment
Burgess	Suggests there should be "no discharge".	This would involve trucking effluent off the site to a treatment plant which is impractical and expensive. The adverse environmental effect of the wastewater discharge should be no more than minor.
Turley	Requests that discharge meets TRMP standards.	The proposed systems meet the current Australian/New Zealand Standards document AS/NZS1547:2000 and the policies and principles of the TRMP. The discharge is proposed to be of

Submitter	Reasons	Comment
		secondary standards, which is better than that required by rule 36.1.4 of the TRMP.
Fleming	Is concerned about flooding of the wastewater land application area.	Contingency plans to avoid adverse effects during and following flooding have been included in the application; consent conditions proposed in this document attempt to further avoid such adverse effects.
Piekarski #1	Concerned that the treatment chambers "have not been tested" and that they need to be certified to meet standards in the TRMP.	The proposed systems have been extensively tested by their manufacturers and both (a) more than meet the requirements of the TRMP and (b) are among the most advanced on-site wastewater treatment and disposal systems available internationally.
Tilling	Wastewater system is inadequate and the area is subject to frequent flooding.	Addressed above.
Piekarski and NgAng	Repeat of Piekarski #1.	Addressed above.
Piekarski #2	Repeat of Piekarski #1.	Addressed above.
NgAng	Is concerned about discharges.	Addressed above.
Shearer	Wastewater system is inadequate considering the flooding potential.	Addressed above.
Pentecost	Requests that there is "no waste of any kind going into waterways".	The wastewater system does not discharge directly to a waterway, and there should be no more than minor adverse effect of the discharge in any neighbouring waterway.
Fletcher	Points out that the wastewater discharge volume is above the permitted activity rule 36.1.4(b) of 2000 litres per day.	The submitter correctly identifies the need for the resource consent application.
Mrazek	Suggests that Mr Walker's evidence on the quality of the wastewater systems and the nature of the receiving environment is based on "hearsay".	No evidence for this is presented. The submitter's own evidence of flooding of the wastewater land application area is based on anecdotal evidence.
Cerny	Wastewater discharge is the equivalent of 12-18 houses.	The land application area is adequately sized for the volume of wastewater proposed to be discharged, so the adverse effect per unit area of land is no greater than that from a domestic wastewater system. It should be noted that most domestic wastewater systems for dwellings produce wastewater of a relatively poor quality compared to the system proposed on the subject development.
NMBHD	Requests a management plan for the wastewater system be developed.	This is acknowledged by a suggested consent condition.

4. PRINCIPAL ISSUES

One of the principal issues associated with proposed development the applications is:

- a) Can the development be adequately serviced in terms of domestic wastewater disposal such that the effects on groundwater and surface water quality will be no more than minor?

5. STATUTORY PROVISIONS

The status of the discharge proposed in the application is discretionary. The Council must consider the application pursuant to Section 104 of the Resource Management Act 1991.

The matters for the Council to consider in Section 104 are:

- Part II matters;
- the actual and potential effects on the environment of allowing the activity (Section 104 (1)(a));
- the relevant objectives and policies in the Tasman Regional Policy Statement, and the Proposed Tasman Resource Management Plan (Section 104 (1) (b));
- any other matter the Council considers relevant and reasonably necessary to determine the application (Section 104 (1)(c)).

5.1 Resource Management Act Part II Matters

In considering an application for resource consent, the Council must ensure that if granted, the proposal is consistent with the purpose and principles set out in Part II of the Act.

Section 5 sets out the **purpose** of the Act which is to promote the sustainable management of natural and physical resources. "Sustainable management" means:

"Managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while -

- *sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- *safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
- *avoiding, remedying, or mitigating any adverse effects of activities on the environment*

Sections 6, 7 and 8 set out the **principles** of the Act:

Section 6 of the Act refers to matters of national importance that the Council shall recognise and provide for in achieving the purpose of the Act. The matters relevant to this application are:

- The preservation rivers and their margins, and the protection of them from inappropriate use and development.
- The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna.

Section 7 of the Act identifies other matters that the Council shall have particular regard to in achieving the purpose of the Act. Relevant matters to this application are:

- 7(d) intrinsic values of ecosystems
- 7(f) maintenance and enhancement of the quality of the environment, and
- 7(g) any finite characteristics of natural and physical resources

If consent is granted, the proposed activity must be deemed to represent the sustainable use and development of a physical resource and any adverse effects of the activity on the environment should be avoided, remedied or mitigated. *The critical issue of this consent is whether the proposal represents sustainable use of the rural land resource, whereby servicing and cumulative adverse effects are no more than minor.*

These principles underpin all relevant Plans and Policy Statements, which provide more specific guidance for assessing this application.

5.2 Tasman Regional Policy Statement

The Regional Policy Statement seeks to achieve the sustainable management of land, water and coastal environment resources. Objectives and policies of the Regional Policy Statement clearly articulate the importance of protecting land resources from inappropriate land use and development.

Because the Proposed Tasman Resource Management Plan was developed to be consistent with the Regional Policy Statement, it is considered that an assessment under the Proposed Plan will satisfy an assessment against Policy Statement principles.

5.3 Tasman Resource Management Plan

The most relevant Objectives and Policies to this application are contained in:

- Chapter 33

This chapter articulates Council's key objectives:

Details of the assessment of the proposed activity in terms of these matters are addressed through the assessment of actual and potential effects in paragraphs 6.1–6.4 below, and analysis and discussion on the relevant policies and objectives in paragraph 6.5 of this report.

6. ASSESSMENT

6.1 Background to the Proposed Activity

Overview

A detailed description of the proposed activity and associated wastewater discharge has been provided by the applicants and their wastewater engineer, Mr Richard Walker. Details of the proposed wastewater treatment and discharge are summarised below (with additional comments in parts):

- The proposed development, including the café/restaurant will cater for: up to 250 visitors per day; six persons using three accommodation studios (for two people each); a dwelling for the manager and family (accommodation for up to four people); and non-resident staff at the facility (eight people).
- During the peak summer period up to 9,000 litres per day is proposed to be treated and discharged. This is based on flow allowances accepted by the wastewater industry and by local authorities including TDC.
- The wastewater design is based on an extensive site and soil assessment that Mr Walker carried out in accordance with methods described in the two primary on-site wastewater system design manuals, AS/NZS1547:2000 and Auckland Regional Council publication TP58.
- The land application area is subject to flooding every two-five years. This is based on anecdotal evidence.
- The soil category in the land application area is Category 3 AS/NZS1547:2000 and is moderately drained (on a scale of one [well drained] to six [poorly drained]). Such soils are ideal for on-site wastewater disposal.
- The design irrigation rate of 25 mm per week (25 litres per square metre per week, or 3.6 litres per square metre per day) is conservative for the soil category.
- A key constraint is that there is a limited area of land available for land application of wastewater that is also above the 1983 flood level.
- The proposed land application system is a conventional dripper irrigation field, consisting of pressure-compensating dripper lines that are laid at 1 m intervals and have drippers at 1 m–0.6 m spacings along the lines. These emit wastewater at between 1.6–2.3 litres per hour, but to a maximum of 3.6 litres per square metre per day.

- The size of the land application area (2,600 m²) is consistent with the volume of effluent to be discharged and the soil type.
- There is 5,400 m² of land application area available in total, so there is more than double the primary land application area available (i.e. a reserve area equivalent to 100% of the primary land application area, plus an extra 200 m²).
- The applicant recommends that an emergency storage tank of 10,000 litres be provided at the outlet of the pre-treatment system (i.e the treatment tanks). This provides for at least 24 hrs storage at peak flow if the land application area is unavailable because of flooding. During winter (low occupancy) this would provide 72 hrs of storage.
- The recommended treatment system is an “advanced secondary treatment system” consisting of an improved septic tank and a textile filter system (or similar) arranged in series.
- Such systems are able to treat fluctuating flows to relatively high standards (<20 milligrams per litre of five-day biochemical oxygen demand (BOD₅)), <30 milligrams per litre suspended solids and <100 faecal coliforms per 100 millilitres.
- The applicant’s engineer has recommended either the Innoflow Advantex or the Oasis Clearwater TEXASS systems be used to treat the wastewater. Both these systems have been independently tested in trials run by the New Zealand Water and Wastes Association, Bay of Plenty Regional Council and Waikato Regional Council. Both systems performed well in the trials. Either of these systems would be suitable for the site and the intended use, and are—in terms of the potential adverse effect in the environment—the best practicable option available to the applicant.
- A grease trap at the outlet of the restaurant wastewater stream is an additional filter that will improve the performance of the chosen system by reducing the potentially detrimental effect of excess food matter (especially grease) entering the wastewater treatment system.
- Conventional septic tanks provide wastewater treatment to a relatively poor quality. Aerated wastewater systems perform poorly when treating fluctuating flows, as are to be expected at a seasonally-affected tourism facility such as that proposed.
- The treatment system is to be situated above the 1983 flood level.

6.2 Consideration of Effects in the Application

The Auckland Regional Council’s publication TP58 suggests that the matters listed in Table 2 be given particular regard to when designing on-site wastewater systems. Table 2 indicates the extent to which these matters have been covered in the applications for resource consent, and whether or not the possible environmental effect is considered by Council to be more than minor.

Table 2: Matters considered in the assessment of potential adverse effects on the environment.

Matters considered in application?		Adverse environmental effect more than minor?
Conservative approach at design stage	Y	N
Robust treatment system	Y	N
High level of treatment	Y	N
Mitigation measures to protect against failure	Y	N
Conservative hydraulic loading rates	Y	N
Measures to ensure even distribution of wastewater disposal	Y	N
Protection of land disposal area with stormwater cut off drains*	Y	N
Description of the soil types and categories on the property	Y	N
Description of the land application area	Y	N
Separation from surface water	Y	N
Separation from groundwater	Y	N
Separation from surface water bores	Y	N
Determination of potential flood risk	Y	N
Provision for reserve allocation	Y	N
Provisions to discourage access*	N/A	N
Odour effects	Y	N
System management plan	Y/C	N
System maintenance contract	Y	N
Education of system users	Y	N

Notes:

Y – Yes ; N – No

C – Not addressed in the application, but to be addressed by consent conditions, which should ensure that effects are no more than minor;

* These matters are not always discussed explicitly at resource consent application stage. They are dependent to a large degree on the particular make and model of wastewater system to be installed; many manufacturers' systems comprise alarms, power back-up and other systems to prevent failure and associated environmental effects.

In the application considerable regard has been given to all of the matters listed in Table 2.

Therefore, there are no outstanding matters that would mean a proper assessment of the activity's adverse effects cannot be made.

6.3 Assessment: Discussion of Key Potential Environmental Effects

Before providing an explicit assessment of the key potential environmental effects associated with the proposed domestic wastewater discharges, some general comments on the application are made as follows:

Key Potential Environmental Effects

The key potential environmental effects associated with domestic wastewater discharges on the proposed allotments are as follows:

- Impact on surface water quality
- Impact on groundwater quality
- Impact on soils

- Impact on amenity values

Adverse impacts on surface water, groundwater and soils themselves can be avoided through appropriate design and site assessment. Aside from the exact make and model of the wastewater system itself, one of the most important aspects of wastewater design to be considered in detail is the soil into which wastewater is to be discharged. Wastewater receives 'treatment' by bacteria in the soil following its discharge from the wastewater system. The discharge should occur at a rate within the hydraulic capacity of the soil (i.e. at a rate at which the soil can physically absorb and transmit the water). If the discharge is maintained below this rate then typically the soils remain aerobic (air spaces are present within the soil), and so the water is treated by aerobic bacteria. If the rate of discharge is too high then these air spaces may be lost (the soil becomes saturated). Under these conditions the anaerobic bacteria multiply in the soil and these typically emit an offensive odour. Furthermore, some of the discharged wastewater may reach the surface. Neither of these outcomes are intended or desirable.

The applicant's report has demonstrated that there is typically enough unsaturated soil depth available between the land application system and groundwater for the renovation of wastewater (i.e. treatment by bacteria in the soil) to be achieved.

This situation is best avoided by the installation of a wastewater system that is suitable for the site, and in particular, discharges the treated wastewater at an appropriate rate for the soil type. These key design parameters have been met in the applicant's wastewater design report.

Adverse impacts on surface water quality should be avoided because the wastewater system has been properly designed and maintenance schedules should be enforced, should consent be granted. The land application area is not proposed to be located closer than 20 metres from any waterbody, and it is deemed to be appropriately sized for the soil type and the proposed discharge.

As has been discussed above, the writer's view is that the proposed wastewater system is appropriate for the site, the design flow volume is suitable for the system's intended use, and the design irrigation rate is suitable for the proposed volume of water and the soil types present. Therefore, it is not expected that there be any adverse effect on the soils, surface water nor groundwater that could be considered more than minor.

Flooding issues

As discussed by a number of submitters, the proposed land application area is subject to flooding. The return periods for flooding events are discussed in the staff report by Mr Eric Verstappen.

Although the quality of the wastewater will be relatively high, it is still undesirable to discharge wastewater directly (or via land) into a watercourse. Notwithstanding this, during floods that submerge the land application area, the effect of dilution in a large volume of water will significantly negate the adverse effect of contamination by wastewater. During floods, material washed from surrounding land will also pollute the river to a degree.

The applicant has proposed that a holding tank, capable of storing wastewater at full flow (i.e. during peak season) for one day, is installed. This will allow the discharge to the land application area to be switched off during a flood event.

It is recommended here that, rather, no less than two days storage (and therefore up to six days storage at low flow) is provided by a tank or tanks of 20,000 litres total capacity. In the writer's view the extra cost and inconvenience of installing such a tank (or tanks) is insignificant. The extra capacity would, however, allow for storage during a flood significantly longer than originally catered for, and therefore this adds extra conservatism into the wastewater system design. It should be noted that the Inflow system has 24 hours emergency storage incorporated within the system; therefore, using that wastewater plant, up to three days of storage would be available during a flood. This is considered to be a good solution to the potential for flooding that is known to affect the property.

6.4 Permitted Baseline

Under Section 104 (2) of the Resource Management Act the Council may use the "permitted baseline" test to assess the proposal. Under this principle the proposal is compared with what could be done as permitted activities under the relevant Plan.

As indicated by one of the submitters, the proposed discharge is equivalent in volume to that from a number of dwellings. In most the Tasman District zoned Rural 1 (as is the subject site), discharges of domestic wastewater to land are typically permitted activities under rule 36.1.4. In contrast to the proposed wastewater system servicing this development, discharges from dwellings in the Rural 1 zone would likely be from conventional septic tanks. In such cases the Council has little control over the ongoing management of these discharges and their effects. Maintenance contracts etc. are not normally kept by homeowners with septic tanks. In this regard, the proposed discharge has a lesser environmental effect per litre of water discharged than that which might occur in other environmentally sensitive rural locations where dwellings are constructed. It is also worth noting that many of the dwellings in Pupu Valley are serviced by conventional septic tanks, the discharge from which is undoubtedly of a relatively poor quality compared to that proposed in this case.

6.5 Relevant Objectives and Policies of the PTRMP

The following Policies and Objectives have been considered relevant for this proposal:

Objectives and Policies	
33.4.0	Objective
On-site disposal of domestic waste-water, which avoids, remedies or mitigates adverse effects on groundwater or surface water quality, habitats, human health and amenity values.	
Policies	
33.4.1	To ensure householders are aware of the potential adverse effects that may be created by discharges from on-site wastewater disposal systems, and of methods of avoiding, remedying or mitigating them.
33.4.2	To ensure that the adverse effects, particularly the cumulative adverse effects, of on-site disposal of domestic wastewater on water quality and aquatic habitats, including coastal water, and on human health or amenity in the Wastewater Management Area are avoided, remedied or mitigated by:
(a)	controlling the use of on-site systems in areas where there are significant limitations to sustainable on-site disposal of domestic wastewater including:

Objectives and Policies	
(i)	low or very low permeability clay soils;
(ii)	rapidly draining coastal soils;
(iii)	areas of high groundwater tables;
(v)	steeply sloping sites, especially on south facing slopes;
(v)	unstable terrain;
(vii)	proximity to surface water bodies;
(vi)	high density of existing and new on-site systems and the cumulative impact of such discharges in terrain that has significant limitations to on-site disposal;
(b)	requiring comprehensive site and soil assessments to identify any site limitations;
(c)	requiring a high level of performance for design, construction, installation, operation and maintenance for new on-site disposal systems;
(d)	ensuring adequate buffers between disposal fields, water bodies, and the coast, especially Waimea and Mapua Inlets;
(e)	reducing the risk to human health arising from pathogens in the wastewater entering into water;
(f)	ensuring the net Nitrogen losses from land in the Wastewater Management Area to be subdivided do not result in adverse effects on aquatic habitats as a result of discharges of domestic wastewater;
(g)	ensuring stormwater management accounts for potential effects on on-site disposal fields;
(h)	ensuring that the potential adverse effects, especially cumulative effects of further residential development, are taken into account in considering any application to subdivide land in the Wastewater Management Area.
33.4.2A To require regular programmed maintenance of on-site wastewater treatment and disposal systems to minimise risk of system failure and reduce risk of adverse environmental effects.	
33.4.2B To encourage consideration of wastewater treatment systems that service a cluster of households (subject to any site limitations) to:	
(a)	take advantage of opportunities for high technology advanced wastewater treatment solutions at cluster scales;
(b)	reduce risks of system failure and cumulative adverse effects of single on-site systems;
(c)	enable Council to develop effective and cost efficient systems for monitoring on-site wastewater systems.
33.4.2C To ensure that legal, practical, financial and enforceable responsibility is established for the operation and maintenance of any on-site wastewater treatment and disposal system, especially where such systems service a cluster of dwellings, taking into account both day-to-day operation and maintenance of such systems as well as provision for depreciation and replacement of equipment and of systems.	
33.4.4 To avoid, remedy or mitigate the adverse effects of discharges of domestic wastewater, including cumulative effects, particularly those in the Special Domestic Wastewater Disposal Areas.	

It is the writer's view that the proposed discharge is broadly consistent with the Policies and Objectives of the Tasman Resource Management Plan.

7. SUMMARY

7.1 Principal Issues

The principal issue is whether the proposed development can be adequately serviced in terms of domestic wastewater disposal so the effects on the environment will be no more than minor.

7.2 Overall Conclusion

Overall the writer's assessment is that the actual adverse effects on the environment are minor and the proposal is generally consistent with the objectives and policies, and matters of discretion in the Tasman Resource Management Plan.

8. RECOMMENDATION

The recommendation to grant or decline this application for a discharge permit is dependent upon the Committee's decision whether or not to grant consent for the proposed landuse activity.

Having considered the application in detail, and drawing on experience of current wastewater discharges in Tasman District, it is the writer's view that the adverse environmental effects of the proposed activity will be no more than minor, and that there is no reason why resource consent for the discharge of wastewater to land should not be granted subject to the following recommended conditions.

It should be noted that the discharge of wastewater to land is a consequential activity, and therefore, this recommendation is subject to the granting of other resource consents for the proposed landuse activities.

9. RECOMMENDED CONDITIONS

Discharge Restrictions

1. The maximum rate of discharge shall not exceed 9,000 litres per day (9 cubic metres per day), except when any part of the land application area is subject to flooding or surface water ponding, in which case there shall be no discharge until the flooding and or surface water ponding in the land application area has been absent for at least 24 hours. During such events, there shall be no discharge of wastewater and the storage tanks referred to in Condition 15 shall be utilised.
2. The discharge shall contain only treated wastewater which is of a domestic nature. For the purposes of this condition, wastewater which is of a "domestic nature" includes wastewater from toilets, urinals, kitchens, showers, washbasins, baths, and laundries but does not include water from spa pools and large-scale laundry activities. No industrial or tradewaste shall be included.

Advice Note:

Wastewater generated from food preparation areas is considered to be of a "domestic nature".

3. The treated wastewater entering the land application areas, based on the results of any single sample collected from the sampling point required to be installed in accordance with Condition 25, shall comply at all times with the following limits:

Determinand	Maximum allowable concentration
5 day carbonaceous biochemical oxygen demand (cBOD5)	30 grams per cubic metre
Total suspended solids	45 grams per cubic metre

Land application system

4. The maximum loading rate at which the wastewater is applied to land shall not exceed 3.57 millimetres per day (3.57 litres per square metre per day).

5. All wastewater shall be discharged to land by way of pressure compensating dripper line(s) laid generally parallel to the contours of the land. The Consent Holder shall, at all times, ensure that the dripper lines used for the disposal of wastewater are located within a planted area and have no less than a 50 millimetre cover of soil, bark, or an appropriate alternative.
6. The pressure compensating drippers used to discharge the treated wastewater to land shall be spaced at intervals not exceeding 600 millimetres along the irrigation line and the maximum spacing between adjacent irrigation lines shall be 1 metre. The instantaneous flow rate for each dripper shall not exceed 1.6 litres per hour.
7. The primary land application area shall total at least 2,600 square metres and shall be located within the area marked "Subsurface dripper land application area" on the plan entitled "Site plan of onsite wastewater system for Pupu Springs café" (ref DRG No. ESS 1081 / 01) prepared by Richard Walker and attached to this consent.
8. A suitable reserve land application area equivalent to not less than 2,600 square metres shall be kept available for future use for wastewater disposal. This reserve area shall remain undeveloped and shall be located within the areas marked "land application reserve area" on the plan referred to in Condition 7 of this consent. For the purposes of this condition "undeveloped" means that no permanent buildings or structures shall be constructed on the areas set aside as reserve land application areas, however the reserve areas may be planted with trees and other vegetation.
9. Notwithstanding Conditions 7 and 8, in the event that the total area required to adequately dispose of the wastewater is shown to be greater than 5,200 square metres, the Consent Holder shall make additional land available for such disposal.

Advice Note:

The Consent Holder has undertaken an assessment of the soils on the property and determined that a design irrigation rate (DIR) of 3.57 millimetres per day is appropriate for the soils present and has therefore put aside 5200 square metres of land for primary and reserve land application areas. However, there is a possibility that the DIR may need to be reduced should soil conditions be different to those found during the initial investigations. This condition requires that additional land be set aside for land disposal in the event that the DIR in the design is found to be too high. The subject property is large and utilising additional land for land disposal of wastewater will not impose significantly on the Consent Holder's management of the property.

10. The land application area (including reserve area) shall not be located on slopes averaging greater than 15 degrees over a 10 metre length and shall not be located within:
 - (a) 20 metres of any surface water body;
 - (b) 20 metres of any bore for domestic water supply;
 - (c) 5 metres of any adjoining property or road; or
 - (d) 600 millimetres, measured vertically, separation from dripper line to average winter groundwater table.

11. The land application areas shall not be used for:
 - (a) roading, whether sealed or unsealed;
 - (b) hardstand areas;
 - (c) erection of buildings or any non-wastewater systems structures; or
 - (d) stock grazing.
12. Any trees planted within the land application area shall remain in place for the duration of this consent except for the purposes of removal and replacement of trees that have reached maturity or require removal for some other reason. In that situation the Consent Holder shall replace the removed trees with trees that are equally suitable, or trees that are of the same species, and will not remove and replace more than 20% of the trees in any one year.
13. The Consent Holder shall mark each land application area by any means that ensures the extent of them is identifiable on the ground surface.
14. There shall be no surface ponding or surface run-off of any contaminants from any of the land application areas as a result of the exercise of this consent.

Collection, treatment and disposal systems

15. Except where inconsistent with the conditions of this consent, the construction and installation of the wastewater collection system, treatment plant and land application system shall be carried out in accordance with information submitted with the application for resource consent RM070048 and under the supervision of a person who is suitably qualified and experienced in wastewater treatment and disposal systems. The system shall include no less than 20,000 litres of emergency storage, in addition to emergency storage in the treatment system itself, for the temporary storage of treated wastewater in the event of flooding of the land application area. This chamber(s) shall be connected to the system and positioned following the final pump out chamber but before the land application area, as well as being above the 1982 flood level. The chamber(s) shall be kept empty or otherwise be available at all times for the diversion and storage of treated wastewater.
16. The person supervising the construction and installation of the wastewater collection system, treatment plant and land application system shall provide a written certificate or producer statement to the Council's Co-ordinator Compliance Monitoring prior to the exercise of this resource consent. This certificate or statement shall include sufficient information to enable the Council to determine compliance with Conditions 4–8 (inclusive), 10, 13, and 25. In addition, the certificate or statement shall also confirm the following:
 - (a) that the wastewater system, including the collection system, treatment plant and the land application areas, is capable of treating the design flows and that it has been designed generally in accordance with standard engineering practice;
 - (b) that all components of the wastewater system, including the collection system, treatment plant and the land application areas, have been inspected and installed in accordance with the manufacturer's specifications and standard engineering practice;

- (c) that the components used in the wastewater system, including the collection system, treatment plant and the land application areas, are in sound condition for continued use for the term of this resource consent, or are listed in the Operations and Management Plan (required by Condition 18) for periodic replacement;
 - (d) that there is no less than 20,000 litres of emergency storage available for treated wastewater in the event of flooding of the land application area.
17. Prior to the exercise of this consent, the Consent Holder shall submit a set of final “as-built” plans to the Council’s Co-ordinator Compliance Monitoring that shows the location of all components of the wastewater collection, treatment, and land application system. For the purpose of this condition, the Consent Holder shall ensure that the “as-built” plans are drawn to scale and provide sufficient detail for a Council officer to locate all structures identified on the plans.

Wastewater System Operation and Maintenance

18. A chartered professional engineer or suitably qualified person experienced in wastewater engineering shall prepare an “Operations and Management Plan” for the wastewater treatment and disposal system. This plan shall be prepared in accordance with the conditions of this resource consent and shall contain, but not be limited to, the following:
- (a) an inspection programme to verify the correct functioning of the wastewater treatment and land application systems including not less than monthly inspections of the wastewater treatment plant and disposal areas;
 - (b) a schedule for the daily, weekly, monthly and annual operational requirements including requirements of compliance monitoring of consent conditions;
 - (c) a schedule of maintenance requirements for the pumps, tanks, recirculation tanks, treated wastewater holding tank, flow meters and drains;
 - (d) a schedule of maintenance requirements for the management of vegetation on the land application area(s);
 - (e) a contingency plan specifying the actions to be taken in the event of failure of any component of the system, in the event of flooding of the land application area and subsequent use of the emergency storage tanks, and any non-compliance with the conditions of this resource consent;
 - (f) details of how the wastewater disposal system will be managed;
 - (g) emergency contact details (24 hour availability) for the Service Provider and Consent Holder; and
 - (h) monitoring of the land application areas shall include visual ground inspections to identify above ground and surface flows of wastewater and methods to remedy such flows should any be identified.

19. A copy of the "Operations and Management plan" required by Condition 18 shall be submitted to the Council's Co-ordinator Compliance Monitoring for approval prior to exercising this consent. Any changes to this plan shall be in accordance with the conditions of this consent and submitted to the Council's Co-ordinator Compliance Monitoring prior to them taking effect.
20. The Consent Holder shall enter into, and maintain in force, a written maintenance contract with an suitably qualified and experienced wastewater treatment plant operator suitably trained in wastewater treatment plant operation by the system designer, and approved by the Council's Co-ordinator Compliance Monitoring for the ongoing maintenance of the pumps and tanks, and the treatment and land application systems. The maintenance contract shall require the operator to perform maintenance functions and duties specified in the "Operations and Management Plan" required to be prepared by Condition 18. A signed copy of this contract, including full contact details for the Service Provider, shall be forwarded to the Council's Co-ordinator Compliance Monitoring, prior to exercising this consent. Any changes to this maintenance contract must be in accordance with the conditions of this consent and submitted in writing to Council's Co-ordinator Compliance Monitoring prior to them taking effect.

In addition, the Consent Holder shall, every six months from the date of first exercising this consent, provide the Council's Co-ordinator Compliance Monitoring with a copy of a written report that details the maintenance that has been undertaken on the wastewater treatment and disposal system during the previous six month period in accordance with the requirements of the Operations and Management Plan.

Advice Note:

For compliance purposes, a suitably qualified and experienced person would be either a person employed and trained by the manufacturer of the treatment and disposal system, or someone who can provide evidence of satisfactory qualifications and experience in maintaining such wastewater treatment and disposal systems.

21. The collection and treatment tanks that form part of the wastewater treatment plant shall be inspected at least every three months. Where appropriate, all tanks shall as a minimum be cleaned out once the combined depth of the sludge and scum in any tank occupies half of the tank's volume. Material collected from the desludging of tanks shall be removed from site for disposal at a facility authorised to receive such material.

Contingency Measures

22. An audible and visual alarm system shall be installed and operated that is capable of warning of any failure within the treatment or disposal systems (ie, pump failure, mechanical blockage, and/or high wastewater levels).

This warning system shall be configured to activate an audible and visual alarm system located adjacent to the treatment plant or other prominent place on the site for the treatment plant. The details of the alarm shall be included in the "Operations and Management Plan" required by Condition 18 and shall achieve as a minimum the following:

- (a) effective notification of the operators of any alarm;
- (b) in the event of any alarm activating, the alarm shall continue to operate and until the condition has been remedied and cleared by the operator. The audible and visual alarm system shall be installed and operated on all grinder pumps and tanks and, as a minimum, this alarm shall be activated by a high level switch.

The Consent Holder shall maintain clearly visible signage adjacent to all external alarm panels at the plant to provide a 24 hour contact number in the event of an alarm being activated.

- 23. The Consent Holder shall ensure that the treatment plant (excluding the emergency storage tanks) is designed and maintained so that wastewater can be retained within the treatment system above the alarm level without overflow for a period of at least 12 hours, based on average dry weather flows and in accordance with the provisions in the "Operations and Management Plan". All pumps in the treatment and land application system that are essential for the continuous processing, treatment, and disposal of the wastewater shall include duty and standby units.
- 24. Should power disruption result in the emergency storage capacity required to be provided at the treatment plant by Condition 23 being utilised to 80% capacity, the Consent Holder shall ensure that the wastewater is removed from the storage tank at that time for the purpose of maintaining capacity. Wastewater shall be disposed of to a facility that is authorised to accept such wastes. The relevant details of how this will be achieved shall be incorporated in the "Operations and Management Plan" required to be prepared in accordance with Condition 18.

Monitoring and Reporting

- 25. A sampling point to allow collection of a sample of the treated wastewater shall be provided at a point located directly after the final pump-out chamber and before the point where the wastewater discharges to the land application area. Details of the location of this sampling point shall be forwarded to the Council's Co-ordinator Compliance Monitoring prior to the exercise of this consent.
- 26. A sample of the treated wastewater shall be collected from the sampling point required to be installed in accordance with Condition 25. Samples shall be analysed for five day carbonaceous biochemical oxygen demand (cBOD5), total suspended solids, total faecal coliforms, pH, and temperature. The frequency of sampling shall be as follows:
 - (a) for the first 12 months following treatment plant start up, two samples shall be collected at approximately six monthly intervals when the plant is discharging to the land application area;
 - (b) samples shall be collected at least weekly over the period 20 December to 10 January during the period described in (a) above;

- (c) following the first 12 months, samples shall be collected at least annually, with the samples being collected between 20 December and 10 January provided the contaminant limits specified in Condition 3 are always met. Should any of these limits not be met, the sampling frequency shall be increased to monthly sampling, including the frequency specified in (b) above, until full compliance with the contaminant limits of Condition 3 has been achieved over a four month period.
27. All sampling referred to in this consent shall be carried out by a suitably qualified person approved by the Council's Co-ordinator Compliance Monitoring, using standard sampling methodologies and equipment and shall be transported to the laboratory under chain of custody. Where temperature and pH are required, these shall be measured in the field using standard methods and calibrated meters. The detection limits specified in Appendix 1 (Applicable Detection Limits, attached) shall apply to analyses that are undertaken by the laboratory. The samples shall be analysed using standard methodology by an IANZ accredited laboratory. The analytical results shall be forwarded to the Council's Co-ordinator Compliance Monitoring within 10 working days of the results being received from the laboratory.
28. The Consent Holder shall install and maintain at all times a calibrated flow meter, with an accuracy of $\pm 5\%$, on the outlet of the wastewater treatment system to measure the quantities of wastewater discharged to the land application areas.
29. The flow meter required to be installed in accordance with Condition 28 shall be read manually or electronically at the same time daily. Copies of these records shall be forwarded to the Council's Co-ordinator Compliance Monitoring quarterly and also upon written request.
30. Any exceedance of the authorised discharge volume (refer Condition 1) shall be reported to the Council's Co-ordinator Compliance Monitoring in writing within three days of the reading. This report must include any explanation for the non-compliance and an assessment of the likely effects of the functioning of the system and the receiving environment.
31. The Consent Holder or its authorised agent shall notify Council's Co-ordinator Compliance Monitoring of any wastewater discharge to land or water from the treatment plant that is not authorised by this consent in writing as soon as practicable (but no more than 24 hours) after the discharge commenced.

General Conditions

32. The wastewater treatment system shall be located, and the surrounding area maintained, so that vehicular access for maintenance is readily available at all times.
33. The Council may, in the period 1 November to 1 March each year, review any or all of the conditions of the consent pursuant to Section 128 of the Resource Management Act 1991 for all or any of the following purposes:
- (a) to deal with any adverse effect on the environment which may arise from the exercise of the consent that was not foreseen at the time of granting of the consent, and which is therefore more appropriate to deal with at a later stage; and/or

- (b) to require the Consent Holder to adopt the best practical option to remove or reduce any adverse effects on the environment resulting from the discharge; and/or
- (c) reviewing the contaminant limits, loading rates and/or discharge volumes and flow rates of this consent if it is appropriate to do so; and/or
- (d) reviewing the frequency of sampling, flow monitoring and/or number of determinands analysed if the results indicate that this is required and/or appropriate.

Duration of consent (RMA Section 123)

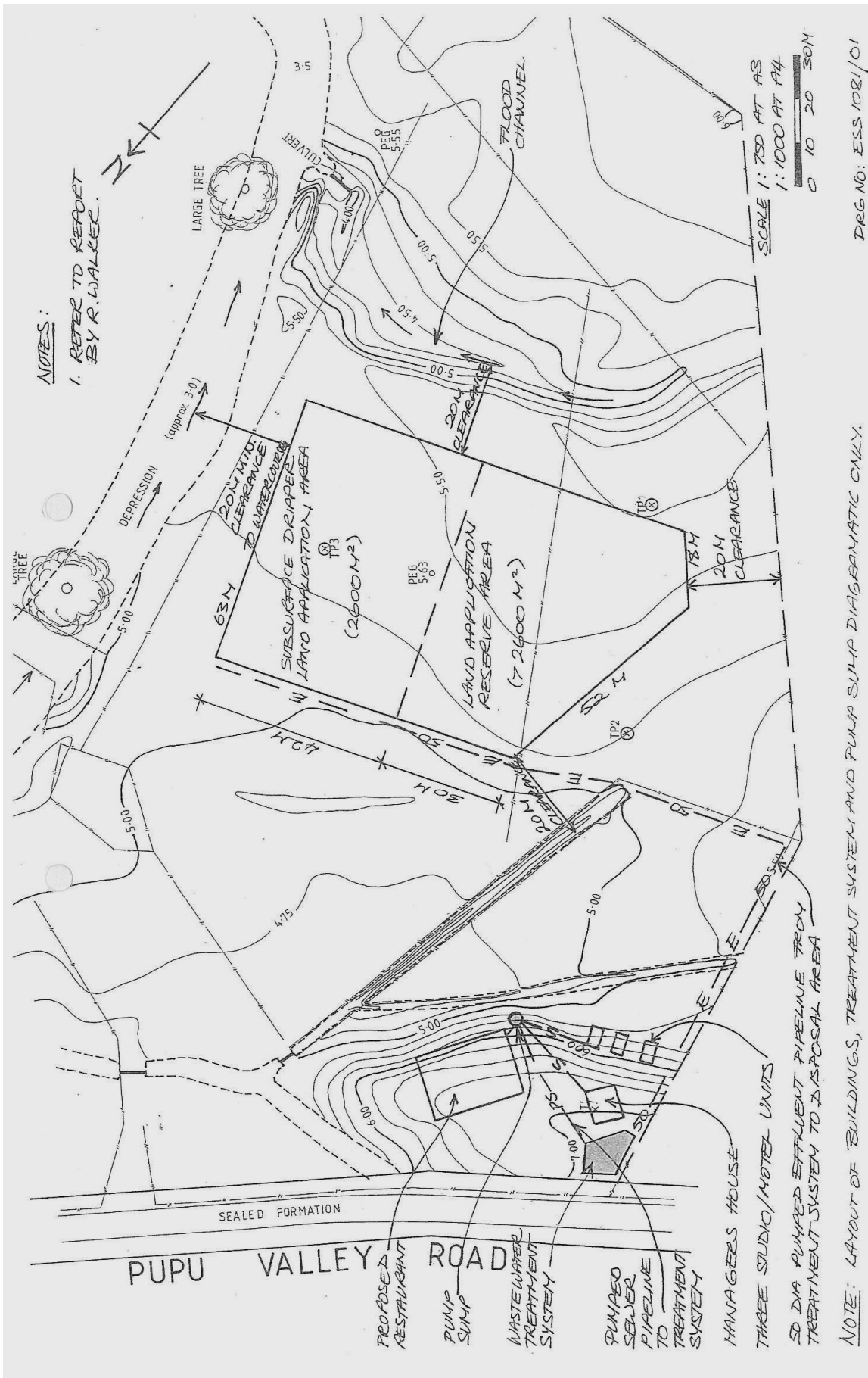
34. This consent expires on 1 December 2017.

ADVICE NOTES

1. This resource consent only authorises the activity described above. Any matters or activities not referred to in this consent or covered by the conditions must either: 1) comply with all the criteria of a relevant permitted activity rule in the Proposed Tasman Resource Management Plan (PTRMP); 2) be allowed by the Resource Management Act; or 3) be authorised by a separate resource consent.
2. The Consent Holder shall meet the requirements of Council with regard to all Building and Health Bylaws, Regulations and Acts.
3. All reporting required by Council shall be made in the first instance to the Council's Co-ordinator Compliance Monitoring.
4. The Consent Holder is advised that compliance with operating guidelines provided by the wastewater system manufacturer and system designer is recommended to reduce the likelihood of malfunction of the treatment or disposal system and a possible breach of consent conditions.
5. If the site becomes part of an urban drainage area identified by Council when future reticulation is available, the Consent Holder will be required to provide connection from the treatment system to the sewer line.
6. Council draws your attention to the provisions of the Historic Places Act 1993 that require you in the event of discovering an archaeological find (eg, shell, midden, hangi or ovens, garden soils, pit, depressions, occupation evidence, burials, taonga) to cease works immediately, and tangata whenua, the Tasman District Council and the New Zealand Historic Places Trust shall be notified within 24 hours. Works may recommence with the written approval of the Council's Environment & Planning Manager, and the New Zealand Historic Places Trust.

7. It is strongly recommended that water reduction fixtures be included in the design of the buildings of the development in order to ensure that the discharge volume limit is met. The measures and fixtures should be in accordance with AS/NZS 1547:2000 and Auckland Regional Council's Technical Publication 58.

Michael Durand
Co-ordinator Natural Resources Consents



**APPENDIX 1
APPLICABLE DETECTION LIMITS**

Parameter	Detection Limits ¹	Units
Carbonaceous biochemical oxygen demand	2	g/m ³
Total Suspended Solids	3	g/m ³
Total faecal coliforms	10	MPN or cfu/100 mL

Notes:

1. These detection limits apply unless other limits are approved in writing by the Coordinator Compliance Monitoring.