

Otago Regional Council

Section 42A Staff Recommending Report

RM20.164: To Discharge Treated Wastewater to Land For the Purpose of Disposing of Wastewater from Kingston Township.
Queenstown Lakes District Council

The recommendation in the staff report represents the opinion of the writers and it is not binding on the Hearing Commissioners. The report is evidence and will be considered along with any other evidence that the Hearing Commissioners will hear.

Sarah Davidson
Consultant- Consents

14 December 2021

Executive Summary of Recommendation

Queenstown Lakes District Council has applied for resource consent to discharge treated wastewater to land from the Kingston Township. The applicant seeks consent to discharge up to 1,800 cubic metres (m³) of treated wastewater to land for the purpose of disposing of treated wastewater from the Kingston Township at Kingston Station. The application seeks a 35 year consent term.

The key issues for this application are:

- The consent term sought;
- The quality of treatment proposed;
- Effects on water quality, particularly from nitrogen in the wastewater;
- Cultural effects; and
- Cumulative effects

After assessing the actual and potential effects of the applications, considering submissions, and considering all of the matters in section 104 of the Resource Management Act 1991, the recommendation of the consultant processing officer is to grant for a duration of 15 years subject to the recommended conditions of consent.

2. Report Author

Please note that this report contains the recommendations of the Consultant Processing Officer and represents the opinion of the author. It is not a decision on the application.

Sarah Davidson

My name is Sarah Davidson. I am a Senior Environmental Planner with RDA Consulting. I have 7 years' experience working as a consents planner in a range of consent roles, including previously as Senior Planning Officer at Central Otago District Council and Senior Consents Officer at Otago Regional Council.

I hold qualifications of Bachelor of Environmental Management from the Southern Institute of Technology. I am an associate member of the New Zealand Planning Institute (NZPI).

I am a certified Commissioner under the Ministry for Environment 'Making Good Decisions' programme.

I have been involved with the Kingston Wastewater application since it was lodged and received in 2019 by Otago Regional Council (ORC), during that time I was employed as Senior Consents Officer at ORC.



Sarah Davidson
Consultant- Consents

OTAGO REGIONAL COUNCIL SECTION 42A REPORT

ID Ref: A1449561
Application No(s): RM20.164.01
Prepared For: Independent Commissioner
Prepared By: Sarah Davidson
Date: 14 December 2021
Subject: Section 42A Recommending Report – Kingston Wastewater Discharge

1. Purpose

This report has been prepared under Section 42A of the Resource Management Act 1991 (RMA) to assist in the hearing of the application/s for resource consent made by Queenstown Lakes District Council. Section 42A enables local authorities to require the preparation of a report on an application for resource consent and allows the consent authority to consider the report at any hearing. The purpose of the report is to assist the Hearing Panel in making a decision on the applications.

The report assesses the application in accordance with Sections 104 and 104B of the Resource Management Act 1991 and makes a recommendation as to whether the application should be granted, and a recommendation on the duration of the consent and appropriate conditions.

This report contains the recommendations of the Processing Officer and is not a decision on the applications. The recommendations of the report are not binding on the Hearing Commissioner. The report is evidence and will be considered along with any other evidence that the Hearing Commissioner will hear.

2. Summary of the Application

2.1 Overview

Applicant: Queenstown lakes District Council

Applicant's agent: Lowe Environmental Impact and Boffa Miskell

Site address or location: 87 Kingston-Garston Highway (State Highway 6), Kingston

Legal description: Part Run 323A Kingston Survey District (lease under s83 Land Act 1948)

Record of title number and owner: SL201/158 Leasehold under Craig Kenneth Tayler, Patricia Mary Tayler and Timothy George Tayler

**Map reference(s): NZTM 126409E 4969804N- Centre Point Land Treatment Area 1
NZTM 126329E 4970155N- Centre Point Land Treatment Area 2**

Consent(s) sought: Discharge permit to discharge treated wastewater to land

Purpose: Disposal of treated wastewater from Kingston Township

Information requested: Further information requested 29 July 2020

Notification decision: Application publicly notified on 4 September 2021

Submissions: Total submissions received by due date: 2

- **In support: 1**
- **In opposition: 1**
- **Wishing to be heard: 0**

**Written Approvals: Otago Fish and Game
Land Information New Zealand
Te Ao Marama Incorporated (received post notification)
Aukaha (received post notification)**

Key Issues: It is considered that the key issues with this application are:

- **Consent duration;**
- **Nitrogen leaching effects;**
- **Effects on groundwater;**
- **Effects on surface water quality and ecology;**
- **Effects on soils;**
- **Cultural effects; and**
- **Cumulative effects**

2.2 Description of Application

The application is for a new consent to discharge treated wastewater to land from the Kingston Township. The applicant seeks consent to discharge up to 1,800m³ of treated wastewater to land for the disposing of wastewater from the Kingston Township at Kingston.

The Kingston Township does not have a reticulated wastewater supply and relies on individual on site wastewater treatment and disposal systems. The Queenstown Lakes District Council (QLDC) are proposing to develop a community wastewater treatment scheme to service the Kingston Township and are therefore applying for resource consent for the discharge of treated wastewater to land.

A new subdivision is proposed within the Kingston Township that requires new infrastructure, including wastewater treatment. The proposed treatment facilities and discharge are part of the

Housing Infrastructure Fund request. It is intended that the new treatment facilities and associated discharge will have the capacity to treat wastewater from the new subdivision and the existing township, plus allow for some future growth.

2.3 Quantity of Discharge

The applicant has applied for a peak wet weather flow rate of 1,800m³/day (1,800,000L/day) and an average dry weather flow of 900m³/day (900,000L/day). Flow rates have been estimated on the basis of 1,200 dwellings using the figures below:

- Average Day Dry Weather Flow= 250L/person/day;
- Average Occupancy= 3 people/dwelling;
- Dry Weather diurnal peaking factor= 2.5; and
- Dilution/infiltration factor for wet weather= 2.0

The applicant advises that the estimated flow rate also takes into account a small number of new restaurants, cafes and tourist facilities. The additional sources are not likely to change the character of the wastewater from the strength of typical domestic wastewater. The flow rate has also been estimated utilising the existing District Plan zoning and provisions, which limits the number of housing and commercial activities within the Kingston Township.

It is estimated that 225 of the 270-existing individual onsite wastewater systems could be decommissioned and replaced by the community treatment plant. The subdivision would provide additional housing up to a total estimate of 1200 people for the Kingston Township. The subdivision is proposed to be staged into Stage 1 and Stage 2. Stage 1 will have 450 lots. Figure 1 below illustrates the development pattern and subdivision, and identifies the areas of potential additional housing.

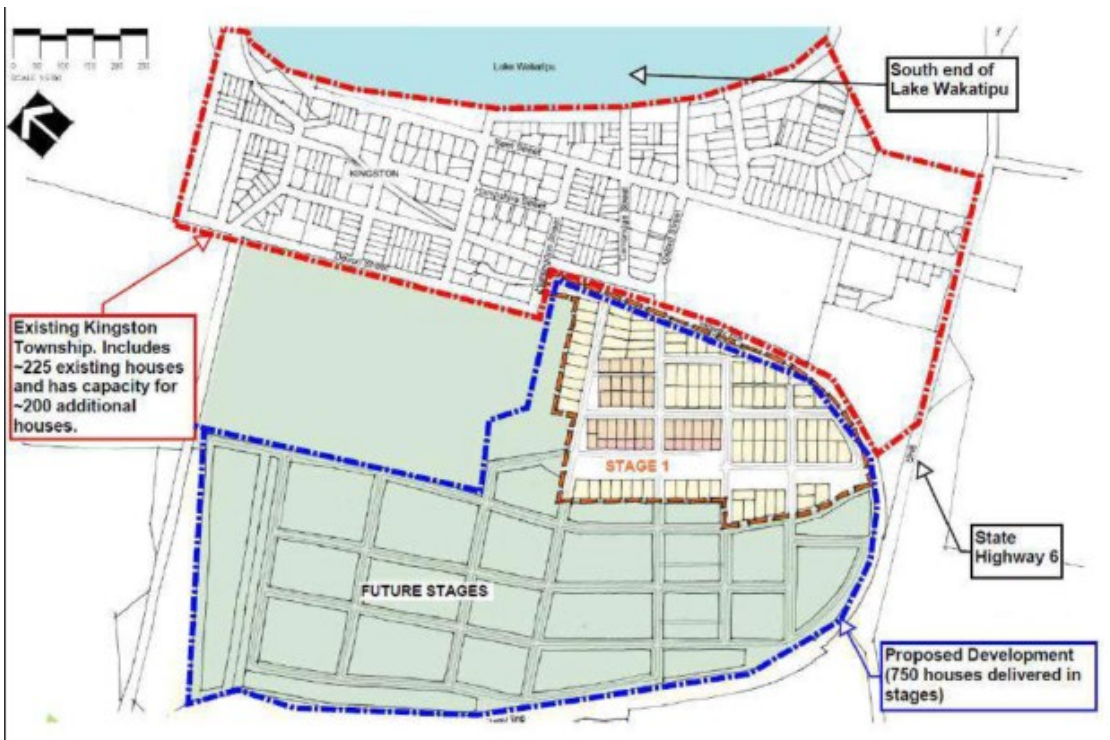


Figure 1. Kingston Township Future Proposed Development (Source:Application)

2.4 Quality of Discharge

The applicant has provided a preliminary design of the wastewater treatment system. The preliminary design is discussed below and is separated into two stages. The applicant has applied for both stages.

The applicant proposes to locate the wastewater treatment plant south of Kingston near QLDC's old landfill site near State Highway 6. This location was chosen due to its separation from the residential areas, reticulation alignments and access for construction, operation and supply of power.

The treatment plant will provide primary, secondary and tertiary treatment in a staged manner to align with the number of properties connected to the scheme. Wastewater influent will comprise of some blackwater from restaurants, cafes and tourist facilities, however the majority of the wastewater flows will be ordinary strength domestic wastewater from individual households. Consent has been sought for a staged approach. Stage 1 of the treatment process will provide treatment of wastewater for up to 450 lots. Figure 1 below demonstrates Stage 1 treatment:

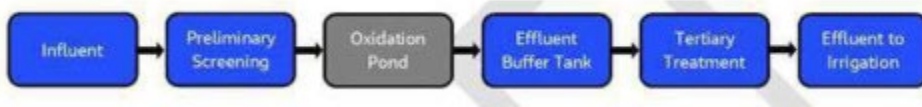


Figure 2. Process Flow Diagram of Stage 1 Treatment (Source: Application).

Once the 450-lot threshold has been reached, Stage 2 of the treatment plant will be implemented. The oxidation pond in Stage 1 will be utilised as a calamity pond and emergency overflow storage to accommodate short periods of treatment system outages. The Stage 2 treatment process is demonstrated in Figure 2 below.

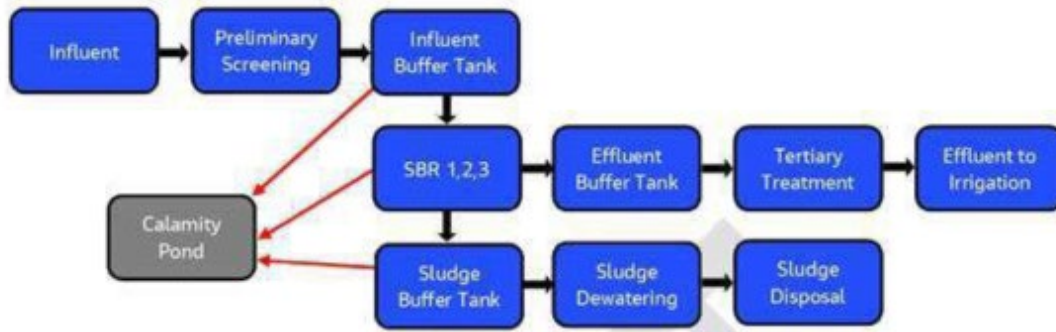


Figure 3. Process Flow Diagram for Stage 2 of the Treatment Plant (Source: Application)

At this stage sequencing batch reactor (SBR) technology is proposed to be used to treat influent that will further be treated by tertiary treatment options. The applicant has proposed the following parameter limits for Stage 1 and Stage 2:

Table 1. Proposed Parameter Limits of Treated Wastewater

Parameter	Stage 1 Limit	Stage 2 Limit
Biological Oxygen Demand (BOD ₅)	50mg/L	20mg/L
Total Suspended Solids (TSS)	30mg/L	30mg/L
Total Phosphorus (TP)	10mg/L	10mg/L
Total Nitrogen (TN)	50mg/L	30mg/L
Escherichia coli (E.coli)	10,000cfu/100mL (12 month rolling mean)	10,000cfu/100mL (12 month rolling mean)

A higher BOD₅ limit and Total Nitrogen limit is proposed for Stage 1. The reasoning for this is to accommodate the lighter loading of the plant and the difficulty in operating a large activated sludge treatment system at less than 50% design capacity.

The applicant proposes a total nitrogen loading limit of 450 kg N/ha/year for both Stage 1 and Stage 2 treatment.

2.5 Method of Discharge and Loading Rates

Effluent from the treatment plant will be discharged to a land treatment area (LTA) via subsurface pressure compensating drip irrigation buried at a depth of approximately 200mm and a spacing of 1 m between lines. The applicant advises a dripper depth of 20cm is sufficient to prevent the lines from freezing in winter at this location. The total command area available for the land treatment area is 25 hectares (Ha), as shown in Figure 4. The amount of land application area required at full development (1200 dwellings) is 15 Ha. The applicant has allowed for 25 Ha for future development and contingency. No less than 5 Ha will be utilised during the initial stage of development.



Figure 4. Proposed Land Treatment Area (Source: Application)

The land treatment area is proposed to be managed by a cut and carry regime and a maximum wet weather application rate of 12mm/day has been proposed based on the hydraulic conductivity of the soils in the proposed LTA area. The expected average loading rate at full development (1200 houses) is approximately 6mm/day. A discussion on soils has been provided further below.

Effluent passing through the soil matrix will be subject to plant and microbial uptake, filtration, adsorption and biological and chemical processes. A pasture and Lucerne cut and carry system is proposed. Cut refers to mowing grass or crops to stimulate growth. Carry refers to removing produced dry matter of site. The applicant advises the nitrogen uptake for pasture is 500-600 kg/ha/year, therefore the minimum sized LTA required for a cut and carry pasture system is 13 Ha to keep the nitrogen loading rate at or below 500 kg/ha/year (plant uptake rate). The applicant

proposes a nitrogen loading rate of 450Kg/ha/year based on full development of 1200 houses and a LTA area of 15 Ha for Stage 2.

As discussed above, a higher nitrogen limit is proposed under Stage 1 due to the treatment plant's ability to remove nitrogen. The higher nitrogen concentration in the treated effluent is proposed to be managed by applying wastewater to the LTA over a larger area and meeting the capped nitrogen load of 450 Kg N/ha/year.

Based on a phosphorus (P) concentration of 10 mg/L in the treated effluent and an LTA area of 15 Ha, a P loading of 222 kg P/ha/year is estimated. The plant uptake estimated using Overseer© is 36 kg P/ha/year. P loading has therefore been estimated as 186 kg P/ha/year across the LTA.

2.6 Application Documents

The applicant has provided the following documentation with the application:

- Resource Consent Application Form dated May 2020;
- Application Form 6
- Assessment of Environmental Effects dated May 2020 prepared by Lowe Environmental Impact;
- Further information response cover letter prepared by Queenstown Lakes District Council dated 16 March 2021;
- Further information memorandum prepared by Lowe Environmental Impact dated 15 March 2021;
- Aquatic Ecology Assessment prepared by Ryder Environmental Ltd dated November 2020;
- Piezo Completion Report by Washington Exploration Limited NZ dated September 2020;
- Further Information Memorandum dated 15 April 2021; and
- Email correspondence dated 23 June 2021 in relation to amendments to proposed parameter limits;

3. Notification and Submissions

3.1 Notification Decision

Council made the decision to process the application on a *publicly notified* basis under Section 95B of the RMA on 20 August 2021 (ORC Notification Recommendation Report). The date notice was served on was 4 September 2021 and submissions closed on 11 October 2021.

Written approvals at the time of notification decision had been received from Otago Fish and Game and Land Information New Zealand and therefore any effects on them were disregarded.

Written approval from Te Ao Marama Incorporation has been received post notification on the 4 October 2021 and written approval from Aukaha has been received on 7 October 2021.

3.2 Submissions Received

Submissions has been received from the following persons:

Table 2. Summary of Submissions

Submitter	Submission Points	Wishes to be heard
Public Health South (PHS)	Supports the application with conditions that concern: -The provision of further information on the remaining unreticulated sections in Kingston that are not part of the plan, and -monitoring conditions that include lake monitoring at Kingston.	As of 3 rd December 2021, PHS no longer wish to be heard. See letter attached.
Kingston Community Association Incorporated (KCA)	Opposes the application due to: -lack of data being gathered on the receiving environment; -The software used to model the impacts of the discharge; -Uncertainty of timing for connecting the existing township; and -5 years of sampling should be undertaken before the consent be considered.	As of 9 th December 2021, KCA no longer wish to be heard. See letter attached.

4. Description of the Environment

4.1 Description of the Site and Surrounding Environment

A detailed description of the site and receiving environment has been provided in Section 3.4 of the notification report. This description has been adopted for the purposes of this report. In summary:

- The discharge site is located to the south of Kingston Township on Kingston Station;
- Geology beneath the discharge location comprises of glacial till deposits;
- Soils at the discharge location are characterised as pallic orthic brown soils;
- Water level readings show groundwater is likely to flow towards Lake Wakatipu and ranges in depth beneath the discharge area ranging between 15 metres (m) to 40(m) below ground level. Groundwater quality also changes dependent on location; and
- Lake Wakatipu is located approximately 1.5km from the discharge location. An unnamed tributary is located approximately to the north of the discharge site and Kingston Creek is located 500m north of the discharge site. A one-off sampling event shows water quality varies between these sites and macroinvertebrates have been observed at the sampling sites.

4.2 Schedule 1 of the Regional Plan: Water

Section 3.4.7 of the Notification Report identifies Schedule 1 values associated with Lake Wakatipu and Kingston Creek. This section has been adopted for the purposes of this report.

5. Status of the Application

Rule 12.A.2.1 of the Regional Plan: Water ("RPW") states:

*Except as provided for by Rules 12.A.1.1 to 12.A.1.4, the discharge of human sewage to water, or onto or into land in circumstances where it may enter water, is a **discretionary** activity.*

The provisions of Rules 12.A.1.1 to 12.A.1.4 that are not met are:

- The discharge exceeds 2,000 litre per day

Under Rule 12.A.1.4 the system's disposal field is required to be sited more than 50 metres from any surface water body. There are two ponds located within the vicinity of the LTA that are located within 50m of the discharge. Therefore, the 50m setback provision is also not met.

The discharge of water or any contaminant from an industrial or trade premise to water or to land is a discretionary activity under Rule 12.B.4.1. As the discharge will also include a trade premise component, consent is also required under this rule.

Overall, the application is a **discretionary** activity.

All other relevant permitted activity rules are complied with, including compliance with the National Environmental Standard for Freshwater 2020 (NES-FW) and Rule 16.3.7.1 of the Regional Plan: Air for Otago (RPA).

6. Section 104 Evaluation

Section 104 of the Act sets out the matters to be considered when assessing an application for a resource consent. These matters are subject to Part 2, the purpose and principles, which are set out in Sections 5 to 8 of the Act.

The remaining matters of Section 104 to be considered when assessing an application for a resource consent are:

- (a) the actual and potential effects on the environment of allowing the activity;*
- (ab) any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity;*

- (b) *any relevant provisions of a national environmental standard, other regulations, a national policy statement, the Regional Policy Statement (RPS), the Regional Plan: Water (RPW); and*
- (c) *any other matter the Council considers relevant and reasonably necessary to determine the application.*

6.1 S104(1)(a) – Actual and potential effects on the environment of allowing the activity

Section 104(1)(a) of the RMA requires the council to have regard to any actual and potential effects on the environment of allowing the activity. This includes both the positive and the adverse effects.

The following actual and potential effects of the proposed discharge have been considered on the environment:

- Effects on soil and plants;
- Effects on human health;
- Effects on groundwater, including nitrogen leaching
- Effects on surface water
- Effects on air quality;
- Effects on neighbouring properties;
- Effects on cultural values;
- Effects on amenity values;
- Effects of hazards and contaminated land;
- Cumulative effects; and
- Positive effects such as local economic effects.

Permitted baseline

The permitted baseline refers to the effects of permitted activities on the subject site and does not include activities authorised by a resource consent. The permitted baseline may be taken into account and the council has the discretion to disregard those effects where an activity is not fanciful.

The assessment and conclusion of the “permitted baseline” reached for the s95A adverse effects assessment are considered applicable to s104(2), and are not applicable as the activity includes trade waste that is not permitted by a rule under any regional plan.

Receiving Environment Assessment

When processing a resource consent regard must be had to what constitutes the “environment” to inform the assessment of the effects of a proposal. Section 95A(8) and section 104(1)(a) each require an assessment of the adverse effects or actual and potential effects on the environment respectively in order to make a decision on notification as well as make the substantial decision whether to grant or to refuse a consent.

The receiving environment beyond the subject site includes permitted activities under the relevant plans, lawfully established activities (via existing use rights or resource consent), and any unimplemented resource consents that are likely to be implemented. For resource consents issued by regional councils that are of limited duration, case law has confirmed that for activities that are seeking to be re-consented, the activities subject to those consents should not form part of the receiving environment as it cannot be assumed that existing consents with finite terms will in fact be replaced or replaced on the same conditions. Similarly, the consent term of resource consents for lawfully established activities needs to be considered when considering the effects of the proposed activity on them.

A description of the receiving environment has been undertaken in Section 3.4 of the Section 95 notification report and has been adopted for the purposes of this report.

Positive effects

The proposal will have the following positive effects:

- The proposal will provide reticulated wastewater for a majority of the Kingston Township that is reliant on individual on-site wastewater systems and has the potential to improve water quality at Kingston Township if existing households connect to the reticulated wastewater system;
- The proposed discharge will enable suitable infrastructure to support housing development that will benefit the local economy.

Adverse effects

In considering the adverse effects, the Consent Authority:

- may disregard those effects where the plan permits an activity with that effect; and
- must disregard those effects on a person who has provided written approval.

Any adverse effects on persons who have provided written approvals are disregarded.

The assessment of adverse effects undertaken for notification identified and evaluated adverse effects, and these are adopted for the purposes of s104(1)(a). Where submissions have raised issues or where further information is required to be addressed as identified in the s95 report, these are further discussed.

Effects on soil

The effects on soil have been discussed in Section 5.1 of the s95 report and are adopted. The maximum hydraulic loading rate of 12mm/day is considered appropriate for the available water holding capacity of the soil. The applicant has volunteered a condition requiring soil monitoring following commencement of the discharge. I consider this condition appropriate to monitor the effects of the discharge on soils over time and to deal with any potential adverse effects on soils that may arise unexpectedly.

The Kingston Community Association Incorporated (KCA) have identified that soil temperatures in the application have been used from Cromwell and have identified that historical climate data has been used in the application. The application specifies the reasoning behind using the Cromwell EWs soil monitoring site as there are no soil temperature sites within 30km of Kingston. The application further advises that soil temperature from the Cromwell EWs station has been used to give an approximation of the likely soil temperatures at Kingston. The application has not clarified how the temperatures have been calculated, however soil temperatures provided in the application are comparative to GrowOtago Maps. It is considered GrowOtago maps are an appropriate tool to assess the receiving environment, including soil temperatures. GrowOtago Maps have been developed by Otago Regional Council using scientific expertise of NIWA, AgResearch, Landcare Research and Otago University and Auckland University.

KCA considers the most up to date data set should be used with a climate change factor applied. Their submission confirms historical climate data from 1981-2010 has been used and the revised data set between 1991-2020 should be use that was released in May 2021. It is noted that the application was lodged before May 2021 and I consider the use of the dataset between 1981-2020 is considered appropriate to describe the climate of the receiving environment.

KCA have also raised that climate change should be factored into the climate dataset to determine the effectiveness of the LTA. I note that the Courts have previously confirmed that it is the role of local authorities to consider and plan for the effects of climate change when exercising their functions under the RMA. It is central government's role under other legislation to address the causative effects of activities on climate change. This was upheld on appeal to the High Court in *Royal Forest and Bird Protection Soc of NZ Inc v Buller Coal Ltd* [2012] NZHC 2156, [2012] NZRMA 552. In *West Coast ENT Inc v Buller Coal Ltd* [2013] NZSC 87, [2014] 1 NZLR 32, the Supreme Court, in a majority decision, upheld the High Court's decision. The effects of climate change in terms of the effectiveness of land treatment area over the proposed term of the consent has not been discussed in the application and it is anticipated that this matter will be clarified in evidence circulated by the Applicant prior to the hearing.

KCA have also raised that there is an assumption that the use of the land treatment area will be less in Winter and advises Kingston now has a majority permanent resident population. I note that modelling by the applicant has been based on the treatment plant at full capacity with all dwellings occupied at 3 persons per household for 365 days of the year. A discussion on nitrogen leaching is undertaken further below.

Effects on water quality and ecology

Sections 3.4.4 and 3.4.5 of the s95 report provide a description of the receiving groundwater and surface water environment.

Section 5.3 of the s95 confirms Lake Wakatipu, Kingston Creek and the unnamed tributary to the north of the land treatment are showing degraded water quality, however only one sampling set has been undertaken and presented in the application. E3 Scientific on behalf of Council's Resource Science Unit (RSU) have audited the application in respect of surface water and ecology matters. A copy of these audits has been attached to this report. E3 Scientific have advised that additional monitoring is required to ensure the proposed discharge does not exacerbate degraded habitat. I consider that additional monitoring is required prior to giving effect to this consent due to uncertainty with the water quality and ecology of the receiving groundwater and surface water environments.

It is noted that the over-arching objective of the NPS-FM requires natural and physical resources are managed in a way that prioritises first, the health and well-being of water bodies and freshwater ecosystems. In order to understand the health and wellbeing of the receiving water bodies and freshwater ecosystems, I consider it appropriate that monitoring of water quality is undertaken prior to commencing the discharge. E3 Scientific have recommended conditions in respect of baseline monitoring prior to giving effect to the consent¹. Monthly water quality sampling has been recommended for at least 12 months prior to giving effect to the consent. Further information submitted by the Applicant dated 11 June 2021 have partly adopted these conditions that have been recommended, however only quarterly sampling has been proposed. To provide more baseline data, I consider it appropriate monthly sampling is undertaking for 12 months prior to giving effect to the consent, if granted.

In addition to the above, the Applicant has proposed water quality monitoring quarterly following commencement of the discharge. E3 Scientific advises quarterly monitoring is appropriate or more frequently if baseline sampling results require more frequent sampling. Conditions have been proposed reflecting this. I consider it appropriate that groundwater samples are also taken at the same frequency to align with yearly reporting requirements as proposed. Condition 16 of the Further Information dated 11 June 2021 proposes only a portion of the groundwater monitoring wells be installed during each land treatment area commencement. The Application has not specified the reasoning behind this. Further information dated 15 March 2021 shows the monitoring wells have been drilled and to provide more representative samples and reflect comparisons to baseline sampling, I consider that groundwater monitoring of all monitoring wells should be undertaken during each stage of the treatment plant and land treatment areas.

Southern District Health Board (SDHB) in their submission have commented that monitoring conditions should include further detail and in particular a need to include lakeside water quality. Proposed water quality monitoring conditions include monitoring sites on Lake Wakatipu. Attached are recommended conditions should consent be granted. In a letter dated 4th December 2021 (attached to this report), SDHB advises this is no longer a concern.

It is noted that KCA have raised in their submission that 12 months of monitoring is not sufficient to fully understand the condition of the receiving environment. The 12 months of baseline monitoring has been recommended by suitably qualified and experienced persons in water quality and ecology and considered appropriate to establish a baseline of the receiving environment. KCA in their submission have recommended 5 years of monitoring should be completed prior to giving effects to the consent and compare this against Schedule 15 limits. Part of the principle of

¹ E3 Scientific Aquatic Ecological and Surface Water Technical Review, 14 April 2021

conditions are that they must be fair, reasonable and practical. I consider that 5 years of monitoring is not reasonable and will result in unreasonable delays for the applicant to commence the discharge.

I consider the proposed conditions attached address uncertainty of water quality of the receiving environment and will provide sufficient baseline data to compare to when the wastewater treatment and disposal system are in operation. I consider it is important that future monitoring results are compared to accurate baseline data to ensure the discharge is not resulting in adverse effects when in operation. Further conditions are recommended to deal with any unexpected adverse effects that may arise as a result of the discharge such as review conditions, auditing and reporting. I consider the recommended monitoring conditions will adequately deal with any potential adverse effects the discharge may have on water quality and the ecology of receiving water bodies and groundwater quality.

Nutrient Effects

Nitrogen leaching effects have been addressed in Section 5.2.1.1 of the Section 95 report and are adopted for the purposes of this report. Concerns have been raised regarding a potential increase in nitrogen leaching for the Kingston Catchment as outlined in Section 5.2.1.1 of the Section 95 report. This has also been raised in KCA's submission.

Pattle Delamore Partners (PDP) have audited the application on behalf of RSU on technical matters relating to groundwater and wastewater treatment and engineering. The audits are attached, along with a memo prepared on the 8 December 2021. PDP's memo dated April 2021 considers the proposed nutrient loading rates are not consistent with best practise. Based on their experience with sequencing batch reactors, nitrogen concentrations below 10mg/L are achievable in cooler climates (the proposed technology to be used to treat the wastewater)². An average nitrogen concentration of 30mg/L is proposed for the treated wastewater in Stage 2. PDP considers improving treatment is the best option to further reduce the mass of nitrogen leached during winter.

In response to this the applicant submitted further information dated 11 June 2021 that advises higher quality effluent prior to land application from the WWTP would present more significant operating costs for heating, aeration, and potential carbon dosing during the denitrification phase of the treatment cycle. Email correspondence dated 23 June 2021 confirms the proposed limits outlined by the Applicant is consistent with other QLDC Discharge Permits including Hawea Wastewater Treatment Plant and Mt Cardrona Valley that has an activated sludge SBR discharging to land. The applicant has volunteered conditions that they advise can maintain the current baseline of nitrogen being leached into Lake Wakatipu at Kingston while accommodating an increase in population density.

I consider it appropriate to apply a 30mg/L for both stages of the wastewater treatment plant, I consider this to be a reasonable limit that can be complied with and monitoring conditions recommended will address any adverse effects that may arise. I consider 50mg/L is not appropriate and in line with PDP recommendations could result in adverse effects.

² Pattle Delamore Partners Limited Technical Review, 14 April 2021

PDP in their memo dated 8 December 2021 advises that the applicant needs to provide specific information about the concentration of ammonia in the discharge and the expected rate of ammonia volatilisation based on soil conditions and the pH of the wastewater/soil to confirm the condition will address nitrogen effects. They further advise some volatilisation could potentially occur during Stage 1, however, this could be limited after the sequence batch reactor technology is established. It is anticipated that the Applicant will clarify these issues raised in this memo in evidence circulated prior to the hearing.

The s95 report raises concerns with the use of Overseer© to estimate nitrogen losses in light of a recent review undertaken by the Ministry for the Environment. KCA in their submission advise that Overseer© cannot be used with confidence to estimate loss of nitrogen as a standalone measure. I consider the monitoring conditions proposed will adequately deal with any uncertainties of nitrogen losses, in particular during winter, where plant uptake of nitrogen is low. Conditions have been recommended requiring upgrades or remedial actions within the scope of the consent following any exceedances. An audit condition has also been proposed specifying upgrades to be undertaken should the wastewater treatment plant require this to address potential adverse effects.

It is noted that PDP have raised issues with potential phosphorus effects that have not previously been raised in their memo dated 8 December 2021. To address this, conditions of consent have been recommended requiring monitoring of phosphorus, in addition to an Olsen P limit. Should the Olsen P limit be exceeded, a further condition is recommended that the Applicant undertake remedial actions.

Taking the above into consideration and the volunteered conditions of consent to address nitrogen leaching, I consider the adverse effects of nitrogen and phosphorus can be mitigated through conditions of consent. Monitoring conditions are proposed that requires the applicant to undertake monitoring of the receiving environment to ensure the environment does not degrade further. Audit and review conditions are also proposed that requires the applicant to audit the treatment plant and undertake upgrades within the scope of the consent should unexpected adverse effects occur.

Cultural Effects

A discussion on cultural effects has been undertaken in Section 5.6 of the s95 report. Since the application was lodged, the National Policy Statement for Freshwater Management 2020 (NPS-FM) has come into effect. The NPS-FM requires freshwater to be managed in a way that gives effect to Te Mana o Te Wai through involving tangata whenua and prioritising the health and wellbeing of water bodies, then the essential needs of people, followed by other uses. In this case Te Ao Marama have provided affected persons approval to the application, therefore the effects upon this party must be disregarded.

Aukaha and Te Rūnanga o Ngāi Tahu (TRoNT) are deemed to be affected by the application and were notified. No submissions have been received from Aukaha or TRoNT, however post notification affected party approval has been received from both of these parties that are attached as appendices to this report. The effects on these parties can therefore not be considered.

Tangata whenua have been involved with the application through the opportunity to submit on the application and have provided affected party approval. Conditions are recommended that will mitigate potential adverse effects on cultural values.

With regard to Ki Uta Ki Tai, it is considered that the application recognises the interconnectedness of the whole environment, and the interactions between freshwater, land, water bodies, ecosystems, and receiving environments; and that freshwater, and land use and development, in catchments be managed in an integrated and sustainable way to ensure the health and well-being of water bodies, freshwater ecosystems, and receiving environments. The recommended conditions of consent will ensure the health and well-being of the catchment and receiving environment is not further degraded.

Cumulative Effects

A discussion on cumulative effects has been undertaken in Section 5.9 of the s95 report and outlines that cumulative effects may arise as a result of the discharge and existing septic tank discharges in the catchment. PDP advises that the proposed discharge under a predevelopment scenario and the subdivision is likely to represent the largest point source of nutrients in the Kingston Catchment once the WWTP and land treatment area are commissioned³ and has the potential to have a significant impact on cumulative effects in the catchment. To address this the applicant has adopted a nitrogen mass balance calculation condition whereby the applicant can maintain the current baseline of nitrogen being leached into the catchment and consequently Lake Wakatipu.

Both the KCA and SDHB submission questions the fate of the remaining unreticulated sections in Kingston. KCA have also raised the willingness of existing houses connecting to the scheme and the costs associated with this. I note that many of the existing septic tanks in Kingston Township are permitted activities and are outside of the control of this discharge consent as they are permitted. I consider this is a matter that is best dealt with by the Territorial Authority and the costs of connecting to the scheme also go beyond the scope of this discharge permit. It is also noted that SDHB since their submission provided a letter to ORC confirming they no longer have concerns regarding the remaining unreticulated sections. This is attached as Appendix 5 to this report.

I consider the applicant has adequately addressed the potential cumulative effects of both the proposed discharge and existing permitted activity discharges through an adopted nutrient balance calculation, and with further clarification I consider this condition will address cumulative effects. A letter from KCA dated the 9th December 2021 has also requested that the nitrogen mass balance condition promoted by the Applicant be reviewed. This letter is attached in Appendix 6. Monitoring conditions have also been adopted and amended where appropriate to address potential adverse effects.

It is noted the alternative approach could be to establish individual on site wastewater systems for any new lots that meet Regional Plan requirements. The permitted activity Rule does not specify any treatment limits and Council do not have control on the quality of treatment from a permitted activity wastewater discharge. This alternative approach could lead to potential adverse

³ Pattle Delamore Partners Limited Technical Review, 14 April 2021

cumulative effects over a single point discharge, where Council have control over the level of treatment through recommended treatment limits and where monitoring has been recommended.

Summary – Actual and Potential Effects

- The applicant has adopted conditions of consent that adequately deal with potential uncertainty of the existing environment, these have been modified where appropriate to better mitigate potential adverse effects;
- Baseline monitoring is proposed that is expected to provide certainty of the receiving environment;
- The limits proposed by the Applicant, although not considered best practice are considered to be appropriate and achievable. Conditions proposed requires monitoring of these limits and their effects on the environment along with conditions requiring upgrades should unexpected adverse effects arise;
- The proposed discharge will have a positive effect by enabling a community reticulation scheme that has the potential to improve water quality of the receiving environment and enable the receiving environment to be closely monitored compared to permitted activity discharges where monitoring is not undertaken; and
- The proposed discharge will not result in adverse effects on cultural values subject to adherence with proposed conditions of consent that have been recommended.

Taking into consideration the positive environmental effects identified above and the assessment of adverse effects, actual and potential effects on the environment are considered to be minor and can be appropriately managed by recommended conditions of consent.

6.2 S104(1)(ab)

The applicant has not proposed or agreed to any measures for the purpose of ensuring positive effects on the environment to offset or compensate for any residual adverse effects that will or may result from allowing the activity.

6.3 S104(1)(b) Relevant Planning Documents

The relevant planning documents in respect of this application are:

- The National Environmental Standard for Sources of Human Drinking Water
- Resource Management (National Environmental Standards for Freshwater) Regulation 2020
- The National Policy Statement for Freshwater Management 2020
- The Operative Regional Policy Statement, Proposed Regional Policy Statement and Partially Operative Regional Policy Statement
- The Regional Plan: Water for Otago

- Proposed Plan Change 8 to the Water Plan

6.3.1 National Environmental Standard for Sources of Human Drinking Water

Regulations 7 and 8 of the National Environmental Standard for Sources of Human Drinking Water (NES) need to be considered when assessing water permits that have the potential to affect registered drinking water supplies that provide 501 or more people with drinking water for 60 or more calendar days each year.

It is noted that the new proposed community water supply for Kingston is not located in any aquifer downgradient of the land treatment area. No other registered drinking water supplies are located within the vicinity of the discharge.

6.3.2 Resource Management (National Environmental Standards for Freshwater) Regulation 2020 (NESFW)

The NESFW 2020 regulations came into force on 3 September 2020. They impose standards on a range of farming activities and other activities relating to freshwater. They also set out a framework for consenting certain activities if the standards are not met. The wetlands within the vicinity of the discharge are not considered a natural wetland under the NESFW and consent is not required for the discharge under the NESFW.

6.3.3 National Policy Statement Freshwater Management 2020 (NPS-FM)

The National Policy Statement for Fresh Water Management 2020 (“NPS-FM”) provides direction to local authorities and resource users regarding activities that affect the health of freshwater and sets out objectives and policies for freshwater management under the RMA.

The NPS-FM came into force on 3 September 2020, replacing the previous 2014 NPS-FM. Although it retains some of the same principals as the NPS-FM 2014, including a strengthened focus on Te Mana o te Wai, the NPS-FM 2020, amongst other things:

- Sets out a framework of objectives and policies to manage activities affecting freshwater in a way that prioritises first, the health and well-being of water bodies and freshwater ecosystems, second, the health needs of people, and third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.
- Requires regional councils to develop long-term visions for freshwater in their region and include those long-term visions as objectives in their regional policy statement.
- Requires every local authority to actively involve tangata whenua in freshwater management.
- Sets out a more expansive National Objectives Framework, and Freshwater Management Unit, environmental flows and levels setting, and take limit setting processes. This includes 13 new attribute states for ecosystem health, including national bottom lines and national targets.

- Specific requirements to protect streams and wetlands and to provide for fish passage – including new policies which must be included in all regional plans.

Part 2 of the NPS-FM sets out the national objective for future freshwater management and 15 separate policies that support this objective.

Relevant objectives and policies from the NPS-FM are considered below:

Objective

- (1) The objective of this National Policy Statement is to ensure that natural and physical resources are managed in a way that prioritises:
- (a) first, the health and well-being of water bodies and freshwater ecosystems
 - (b) second, the health needs of people (such as drinking water)
 - (c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

This application involves an activity that supports the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future. To this extent, it sits third on the NPS-FW priority list. Nevertheless, since the proposal is not likely to result in any unacceptable effects on the health and well-being of the resource, nor on the health needs of people, it is considered consistent with this overall objective.

- Policy 1: Freshwater is managed in a way that gives effect to Te Mana o te Wai.
- Policy 2: Tangata whenua are actively involved in freshwater management (including decision-making processes), and Māori freshwater values are identified and provided for.
- Policy 3: Freshwater is managed in an integrated way that considers the effects of the use and development of land on a whole-of-catchment basis, including the effects on receiving environments.
- Policy 6: There is no further loss of extent of natural inland wetlands, their values are protected, and their restoration is promoted.
- Policy 8: The significant values of outstanding water bodies are protected.
- Policy 9: The habitats of indigenous freshwater species are protected.
- Policy 10: The habitat of trout and salmon is protected, insofar as this is consistent with Policy 9.
- Policy 12: The national target (as set out in Appendix 3) for water quality improvement is achieved.
- Policy 13: The condition of water bodies and freshwater ecosystems is systematically monitored over time, and action is taken where freshwater is degraded, and to reverse deteriorating trends.
- Policy 14: Information (including monitoring data) about the state of water bodies and freshwater ecosystems, and the challenges to their health and well-being, is regularly reported on and published.
- Policy 15: Communities are enabled to provide for their social, economic, and cultural well-being in a way that is consistent with this National Policy Statement.

The Council has proposed a progressive implementation plan for meeting the NPS-FM 2020 and this includes developing a new land and water plan that will be notified by 2023 that includes objective and targets for FMUs in accordance with the requirements of the NPS-FM. A review condition has been recommended to allow conditions to be imposed on the discharge permit, if required, once the new land and water plan is fully operative.

As stated above, the proposal is considered to provide economic benefit and support for local communities whilst managing any potential adverse environmental effects and is therefore consistent with Policy 15 above.

It is noted in KCA's submission that raises Policy 13 and requests a minimum of 5 years of monitoring under this Policy. A year of baseline monitoring is recommended and considered sufficient to provide baseline data. On-going monitoring conditions have been recommended that requires monitoring of the receiving environment overtime and conditions recommended where actions are taken to reverse deteriorating trends. The consent with the recommended conditions is consistent with this Policy.

Lake Wakatipu is regarded as an outstanding water body and monitoring conditions recommended will ensure the values of this waterbody are maintained. The activity is consistent with Policy 8.

6.3.4 Proposed Regional Policy Statement and Partially Operative Regional Policy Statement

The partially operative RPS was made partially operative on the 14th of January 2019 ("PO-RPS") and through various court orders. Since then there have has been number of appeals resolved through the Environment Court. On 15 March 2021, the Council approved and provided notice for these further provisions to be added to the PO-RPS. The provisions that are the subject of court proceedings and are not made operative is now limited to Policy 4.3.7 (significant infrastructure) and specific methods of Chapter 3. None of the remaining proposed provisions are applicable to the application, therefore full weight and consideration can be provided to the PO-RPS.

On 26 June 2021 Council notified the proposed Otago Regional Policy Statement. This RPS gives effect to the NPS-FW 2020 and includes freshwater visions, FMU's and rohe. As this RPS has been notified, it has been included and assessed below.

Partially Operative RPS

Policy 1.1.1 Provide for the economic wellbeing of Otago's people and communities by enabling the resilient and sustainable use and development of natural and physical resources.

Policy 1.1.2 Provide for social and cultural wellbeing and health and safety by all of the following:

- recognising and providing for Kāi Tahu values;
- taking into account the values of other cultures;
- taking into account the diverse needs of Otago's people and communities;
- avoiding significant adverse effects of activities on human health;

- promoting community resilience and the need to secure resources for the reasonable needs for human wellbeing;
- promoting good quality and accessible infrastructure and public services

Policy 1.2.1 Achieve integrated management of Otago's natural and physical resources.

Policy 2.1.2 Taking the principles of Te Tiriti o Waitangi into account including by involving Kāi Tahu in resource management processes implementation, having particular regard to the exercise of kaitiakitaka and taking into account iwi management plans.

Policy 2.2.1 Managing the natural environment to support Kāi Tahu wellbeing.

Policy 2.2.2 Recognise and provide for the protection of sites of cultural significance to Kāi Tahu including the values that contribute to the site being significant.

Policy 3.1.1 Managing for freshwater values including

- Maintain or enhance ecosystem health in all Otago aquifers, and rivers, lakes, wetlands, and their margins
- Maintain good water quality, including in the coastal marine area, or enhance it where it has been degraded
- Maintain or enhance the natural functioning of rivers, lakes, and wetlands, their riparian margins, and aquifers
- Maintain or enhance the quality and reliability of existing drinking and stock water supplies
- Recognise and provide for important recreation values
- Maintain or enhance the amenity and landscape values of rivers, lakes, and wetlands
- Avoid, remedy or mitigate the adverse effects of natural hazards, including flooding and erosion
- Avoid, remedy, or mitigate adverse effects on existing infrastructure that is reliant on fresh water.

Policy 5.4.1 Manage discharges that are objectionable or offensive to Kāi Tahu and/or the wider community.

The proposed discharge is consistent with Policy 1.1.1 as the discharge will enable economic wellbeing.

Kāi Tahu values have been taken into account and no direct discharge to water will occur. The proposal is consistent with Policies 5.4.1 , 2.1.2, 2.2.1 and 2.2.2.

The proposed discharge is not expected to degrade water quality. Monitoring conditions are proposed to assess and manage the on-going effects of the discharge. The discharge is consistent with Policy 3.1.1.

Proposed Otago Regional Policy Statement (P-ORPS 2021)

MW–O1 – Principles of Te Tiriti o Waitangi

MW–P2 – Treaty principles

MW–P3 – Supporting Kāi Tahu well-being

IM–O2 – Ki uta ki tai

IM–P2 – Decision priorities Unless expressly stated otherwise, all decision making under this RPS shall:

1. first, secure the long-term life-supporting capacity and mauri of the natural environment,
2. secondly, promote the health needs of people, and
3. thirdly, safeguard the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

IM–P6 – Acting on best available information. Avoid unreasonable delays in decision-making processes by using the best information available at the time, including but not limited to mātauraka Māori, local knowledge, and reliable partial data.

IM–P13 – Managing cumulative effects Otago’s environmental integrity, form, function, and resilience, and opportunities for future generations, are protected by recognising and specifically managing the cumulative effects of activities on natural and physical resources in plans and explicitly accounting for these effects in other resource management decisions.

The life supporting capacity and mauri of the natural environment has been at the forefront of considering the effects of this activity. The discharges will support the mauri of the natural environment while promoting the health needs of people by providing a safe on-site wastewater treatment and disposal system to manage human wastewater. Cumulative effects will be managed by ongoing monitoring and maintenance of the wastewater system. By enabling a single on site wastewater treatment system, cumulative effects will also be more manageable than multiple on site wastewater systems. The proposal is consistent with the above policies.

LF–WAI–O1 – Te Mana o te Wai The mauri of Otago’s water bodies and their health and well-being is protected, and restored where it is degraded, and the management of land and water recognises and reflects that:

1. water is the foundation and source of all life – na te wai ko te hauora o ngā mea katoa,
2. there is an integral kinship relationship between water and Kāi Tahu whānui, and this relationship endures through time, connecting past, present and future,
3. each water body has a unique whakapapa and characteristics,
4. water and land have a connectedness that supports and perpetuates life, and

5. Kāi Tahu exercise rakatirataka, manaakitaka and their kaitiakitaka duty of care and attention over wai and all the life it supports.

LF–WAI–P3 – Integrated management/ki uta ki tai Manage the use of freshwater and land in accordance with tikanga and kawa, using an integrated approach that:

1. recognises and sustains the connections and interactions between water bodies (large and small, surface and ground, fresh and coastal, permanently flowing, intermittent and ephemeral),
2. sustains and, wherever possible, restores the connections and interactions between land and water, from the mountains to the sea,
3. sustains and, wherever possible, restores the habitats of mahika kai and indigenous species, including taoka species associated with the water body,
4. manages the effects of the use and development of land to maintain or enhance the health and well-being of freshwater and coastal water,
5. encourages the coordination and sequencing of regional or urban growth to ensure it is sustainable,
6. has regard to foreseeable climate change risks, and
7. has regard to cumulative effects and the need to apply a precautionary approach where there is limited available information or uncertainty about potential adverse effects.

LF–WAI–P4 – Giving effect to Te Mana o te Wai

All persons exercising functions and powers under this regional policy statement and all persons who use, develop or protect resources to which this regional policy statement applies must recognise that LF-WAI-O1, LF-WAI-P1, LF-WAI-P2 and LF-WAI-P3 are fundamental to upholding Te Mana o te Wai, and must be given effect to when making decisions affecting freshwater, including when interpreting and applying the provisions of the LF chapter.

Te Mana o Te Wai has been considered in assessing this application and the health and wellbeing of water will be maintained.

LF–VM–O2 – Clutha Mata-au FMU vision

In the Clutha Mata-au FMU:

- (1) management of the FMU recognises that:
 - (a) the Clutha River / Mata-au is a single connected system ki uta ki tai, and
 - (b) the source of the wai is pure, coming directly from Tawhirimatea to the top of the mauka and into the awa,
- (2) freshwater is managed in accordance with the LF–WAI objectives and policies,
- (3) the ongoing relationship of Kāi Tahu with wāhi tūpuna is sustained,
- (4) water bodies support thriving mahika kai and Kāi Tahu whānui have access to mahika kai,
- (5) indigenous species migrate easily and as naturally as possible along and within the river system,
- (6) the national significance of the Clutha hydro-electricity generation scheme is recognised,

- (7) in addition to (1) to (6) above:
- (a) in the Upper Lakes rohe, the high quality waters of the lakes and their tributaries are protected, recognising the significance of the purity of these waters to Kāi Tahu and to the wider community,
 - (b) in the Dunstan, Manuherehia and Roxburgh rohe:
 - (i) flows in water bodies sustain and, wherever possible, restore the natural form and function of main stems and tributaries to support Kāi Tahu values and practices, and
 - (ii) innovative and sustainable land and water management practices support food production in the area and reduce discharges of nutrients and other contaminants to water bodies so that they are safe for human contact, and
 - (iii) sustainable abstraction occurs from main stems or groundwater in preference to tributaries,
 - (c) in the Lower Clutha rohe:
 - (i) there is no further modification of the shape and behaviour of the water bodies and opportunities to restore the natural form and function of water bodies are promoted wherever possible,
 - (ii) the ecosystem connections between freshwater, wetlands and the coastal environment are preserved and, wherever possible, restored,
 - (iii) land management practices reduce discharges of nutrients and other contaminants to water bodies so that they are safe for human contact, and
 - (iv) there are no direct discharges of wastewater to water bodies, and
- (8) the outcomes sought in (7) are to be achieved within the following timeframes:
- (a) by 2030 in the Upper Lakes rohe,
 - (b) by 2045 in the Dunstan, Roxburgh and Lower Clutha rohe, and
 - (c) by 2050 in the Manuherehia rohe.

LF-VM-P5 – Freshwater Management Units (FMUs) and rohe

Otago’s freshwater resources are managed through the following freshwater management units or rohe which are shown on MAP1:

- **Table 3 – Freshwater Management Units and rohe**

Freshwater Management Unit	Rohe
Clutha/Mata-au	Upper Lakes Dunstan Manuherehia Roxburgh Lower Clutha
Taieri	n/a
North Otago	n/a
Dunedin & Coast	n/a
Catlins	n/a

LF-VM-07 – Integrated management

Land and water management apply the ethic of ki uta ki tai and are managed as integrated natural resources, recognising the connections and interactions between freshwater, land and the coastal environment, and between surface water, groundwater and coastal water.

LF-FW-08 – Freshwater In Otago’s water bodies and their catchments:

- (1) the health of the wai supports the health of the people and thriving mahika kai,
- (2) water flow is continuous throughout the whole system,
- (3) the interconnection of freshwater (including groundwater) and coastal waters is recognised,
- (4) native fish can migrate easily and as naturally as possible and taoka species and their habitats are protected, and
- (5) the significant and outstanding values of Otago’s outstanding water bodies are identified and protected.

LF-FW-010 – Natural character The natural character of *wetlands*, *lakes* and *rivers* and their margins is preserved and protected from inappropriate subdivision, use and development.

LF-FW-P7 – Freshwater Environmental outcomes, attribute states (including target attribute states) and limits ensure that:

- (1) the health and well-being of water bodies is maintained or, if degraded, improved,
- (2) the habitats of indigenous species associated with water bodies are protected, including by providing for fish passage,
- (3) specified rivers and lakes are suitable for primary contact within the following timeframes:
 - (a) by 2030, 90% of rivers and 98% of lakes, and
 - (b) by 2040, 95% of rivers and 100% of lakes, and
- (4) mahika kai and drinking water are safe for human consumption,
- (5) existing over-allocation is phased out and future over-allocation is avoided, and
- (6) freshwater is allocated within environmental limits and used efficiently.

LF-FW-P12 – Protecting outstanding water bodies The significant and outstanding values of outstanding water bodies are:

- (1) identified in the relevant regional and district plans, and
- (2) protected by avoiding adverse effects on those values.

LF-FW-P13 – Preserving natural character Preserve the natural character of lakes and rivers and their beds and margins by:

- (1) avoiding the loss of values or extent of a river, unless:
 - (a) there is a functional need for the activity in that location, and
 - (b) the effects of the activity are managed by applying:
 - (i) for effects on indigenous biodiversity, either ECO-P3 or ECO-P6 (whichever is applicable), and
 - (ii) for other effects, the effects management hierarchy,
- (2) not granting resource consent for activities in (1) unless Otago Regional Council is satisfied that:

- (a) the application demonstrates how each step of the effects management hierarchies in (1)(b) will be applied to the loss of values or extent of the river, and
- (b) any consent is granted subject to conditions that apply the effects management hierarchies in (1)(b),
- (3) establishing environmental flow and level regimes and water quality standards that support the health and well-being of the water body,
- (4) wherever possible, sustaining the form and function of a water body that reflects its natural behaviours,
- (5) recognising and implementing the restrictions in Water Conservation Orders,
- (6) preventing the impounding or control of the level of Lake Wanaka,
- (7) preventing modification that would reduce the braided character of a river, and
- (8) controlling the use of water and land that would adversely affect the natural character of the water body.

The discharge is proposed to be managed in a manner that will not degrade the natural environment further, in particular the water quality and ecology of receiving water bodies. Although additional nutrients and potential contaminants will be applied to the land, it has been assessed that these nutrients will not further degrade the groundwater and surface water environment subject to recommended conditions of consent. Through careful management and ongoing monitoring of the discharge, the ongoing effects of the discharge can be managed to ensure the environment does not degrade further.

LF–FW–P15 – Stormwater and wastewater discharges

Minimise the adverse effects of direct and indirect discharges of stormwater and wastewater to freshwater by:

- (1) except as required by LF–VM–O2 and LF–VM–O4, preferring discharges of wastewater to land over discharges to water, unless adverse effects associated with a discharge to land are greater than a discharge to water, and
- (2) requiring:
 - (a) all sewage, industrial or trade waste to be discharged into a reticulated wastewater system, where one is available,
 - (b) all stormwater to be discharged into a reticulated system, where one is available,
 - (c) implementation of methods to progressively reduce the frequency and volume of wet weather overflows and minimise the likelihood of dry weather overflows occurring for reticulated stormwater and wastewater systems,
 - (d) on-site wastewater systems to be designed and operated in accordance with best practice standards,
 - (e) stormwater and wastewater discharges to meet any applicable water quality standards set for FMUs and/or rohe, and
 - (f) the use of water sensitive urban design techniques to avoid or mitigate the potential adverse effects of contaminants on receiving water bodies from the subdivision, use or development of land, wherever practicable, and
- (3) promoting the reticulation of stormwater and wastewater in urban areas.

The on-site wastewater system promotes the reticulation of wastewater for Kingston Township and has the potential to provide positive environmental effects. The system will mitigate the potential adverse effects of contaminants on receiving water bodies. Conditions are proposed that

require on going monitoring and maintenance of the discharge. The proposed discharge is centralized and is consistent with this policy.

LF-LS-O11 – Land and soil

The life-supporting capacity of Otago’s soil resources is safeguarded and the availability and productive capacity of highly productive land for primary production is maintained now and for future generations.

LF-LS-O12 – Use of land

The use of land in Otago maintains soil quality and contributes to achieving environmental outcomes for freshwater.

LF-LS-P16 – Integrated management

Recognise that maintaining soil quality requires the integrated management of land and freshwater resources including the interconnections between soil health, vegetative cover and water quality and quantity.

LF-LS-P17 – Soil values

Maintain the mauri, health and productive potential of soils by managing the use and development of land in a way that is suited to the natural soil characteristics and that sustains healthy:

- (1) soil biological activity and biodiversity,
- (2) soil structure, and
- (3) soil fertility.

The application of treated wastewater has been assessed as having less than minor effect on soil values and soil monitoring conditions are proposed. The discharge activities have taken into account soil type and the discharge is consistent with the above policies.

EIT-INF-O4 – Provision of infrastructure Effective, efficient and resilient infrastructure enables the people and communities of Otago to provide for their social and cultural well-being, their health and safety and supports sustainable economic development and growth within the region within environmental limits.

EIT-INF-P13 – Locating and managing effects of infrastructure When providing for new infrastructure outside the coastal environment:

- (1) avoid, as the first priority, locating infrastructure in all of the following:
 - (a) significant natural areas,
 - (b) outstanding natural features and landscapes,
 - (c) natural wetlands,
 - (d) outstanding water bodies,
 - (e) areas of high or outstanding natural character,
 - (f) areas or places of significant or outstanding historic heritage,
 - (g) wāhi tapu, wāhi taoka, and areas with protected customary rights, and
 - (h) areas of high recreational and high amenity value, and

- (2) if it is not possible to avoid locating in the areas listed in (1) above because of the functional or operational needs of the infrastructure manage adverse effects as follows:
 - (a) for nationally or regionally significant infrastructure:
 - (i) in significant natural areas, in accordance with ECO-P4,
 - (ii) in natural wetlands, in accordance with the relevant provisions in the NESF,
 - (iii) in outstanding water bodies, in accordance with LF-P12,
 - (iv) in other areas listed in EIT-INF-P13 (1) above, minimise the adverse effects of the infrastructure on the values that contribute to the area's importance, and
 - (b) for all infrastructure that is not nationally or regionally significant, avoid adverse effects on the values that contribute to the area's outstanding nature or significance.

EIT-INF-P14 – Decision-making considerations When considering proposals to develop or upgrade infrastructure:

- (1) require consideration of alternative sites, methods and designs if adverse effects are potentially significant or irreversible, and
- (2) utilise the opportunity of substantial upgrades of infrastructure to reduce adverse effects that result from the existing infrastructure, including on sensitive activities.

The activity will enable the sustainable management of wastewater from Kingston Township, alternative sites have been assessed by the applicant and Kingston Station is deemed to be the most appropriate location due to it's location away from sensitive receptors such as the township and Lake Wakatipu. The activity will enable the people and community to provide for their social and cultural wellbeing while supporting sustainable economic growth and wellbeing. The discharge is consistent with the above policies.

6.3.5 Regional Plan: Water for Otago

Relevant objectives and policies from the RPW are considered below:

Objective 7.A.1 To maintain water quality in Otago's fresh water but enhance water quality where it is degraded.

Objective 7.A.2 To enable the discharge of water or contaminants to water or land, in a way that maintains water quality and supports natural and human use values, including Kai Tahu values.

Objective 7.A.3 To have individuals and communities manage their discharges to reduce adverse effects, including cumulative effects, on water quality.

The proposed discharges will be treated and applied to land in a manner that will not degrade water quality with recommended conditions of consent.

Policy 7.B.1 Manage the quality of water in Otago's fresh water by recognising the differences in the effects and management of point and non-point source discharges; describing in Schedule 15 characteristics indicative of good water quality, setting receiving water numerical limits and targets; maintaining good quality water, enhancing water quality where it does not meet Schedule 15 limits, recognising discharge effects on groundwater and promoting the discharge of contaminants to land in preference to water.

Policy 7.B.2 Avoid objectionable discharges of water or contaminants to maintain the natural and human use values, including Kāi Tahu values, of Otago's fresh water.

Policy 7.B.3 Allow discharges of water or contaminants to Otago lakes, rivers, wetlands and groundwater that have minor effects or that are short term discharges with short term adverse effects.

Policy 7.B.4 In considering the discharge of any contaminant to land, to have regard to

- a) the ability of the land to assimilate the water or contaminants;
- b) any potential for soil contamination;
- c) any potential for land instability;
- d) any potential adverse effects on water quality; and
- e) any potential adverse effects on use of any proximate coastal marine area for contact recreation and seafood gathering.

Policy 7.B.6 When assessing any consent to discharge contaminants to water, consider the need for and the extent of any zone for physical mixing within which water will not meet the characteristics and limits described in Schedule 15 by taking account of:

- a) the sensitivity of the receiving environment;
- b) the natural and human use values;
- c) the natural character of the water body;
- d) the amenity values supported by the water body;
- e) the physical processes acting on the area of discharge;
- f) the particular discharge including contaminant type, concentration and volume;
- g) the provision of cost effective community infrastructure; and
- h) good water quality as described in Schedule 15.

Policy 7.B.8 Encourage adaptive management and innovation that reduce the level of contaminants in discharges.

Policy 7.C.1 When considering applications to discharge contaminants to water, to have regard to opportunities to enhance the existing water quality of the receiving water body at any location for which the existing water quality can be considered degraded in terms of its capacity to support its natural and human use values.

Policy 7.C.2 When considering applications for resource consents to discharge contaminants to water, or onto or into land in circumstances which may result in any contaminant entering water, to have regard to:

- a) the nature of the discharge and the sensitivity of the receiving environment to adverse effects;

- b) the financial implications, and the effects on the environment of the proposed method of discharge when compared with alternative means; and
- c) the current state of technical knowledge and the likelihood that the proposed method of discharge can be successfully applied.

Policy 7.C.3 When considering any resource consent to discharge a contaminant to water, to have regard to any relevant standards and guidelines in imposing conditions on the discharge consent.

Policy 9.4.1 To ensure that the suitability of aquifers to support recognised uses of groundwater is maintained when discharging contaminants.

Policy 9.4.18(c) Seeks to identify and manage the vulnerability of groundwater to leachate contamination as a result of point source discharges of water or contaminants to land or groundwater. Any land overlying groundwater at high risk of contamination is identified as Zone A of a Groundwater Protection Zone (GPZ).

Groundwater and surface water monitoring is proposed that will ensure potential adverse effects of the discharge can be identified and mitigated if required.

The discharge is unlikely to cause objectionable and offensive effects and Kai tahu values have been taken in account and the effects of the discharge on Kai tahu values can be mitigated through recommended conditions of consent.

Overall, the application is considered to be consistent with the above policies.

6.3.6 Proposed Plan Change 8 (Discharge management) to the Regional Plan: Water for Otago (6 July 2020)

The Otago Regional Council notified Proposed Plan Change 8 (Discharge management) to the Regional Plan: Water for Otago for submissions on 6 July 2020 and has immediate legal effect in accordance with section 86B(3) of the Act. Proposed Plan Change 8 amends existing, and introduces new provisions for:

- Managing, through enhanced policy direction, decision-making on stormwater, wastewater and rural discharges;
- Effluent storage and application to land through new minimum standards;
- Promoting good farming practices, including better managing contaminant loss from intensive grazing and stock access to water bodies as well as incentivising the use of small in-stream sediment traps;
- Improving management of sediment loss from earthworks for residential development, and
- Clarifying provision for nationally and regionally significant infrastructure in wetlands.

Whilst the provisions in the Plan Change have not been subject to significant independent testing or decision making (mediation is occurring and two days of hearings in the Environment Court have been held) and therefore, they cannot be given full weight, in my opinion the provisions in the notified plan change should be given substantial weight for the following reasons:

The new objectives and policies very much introduce a coherent pattern of objectives and policies in the plan;

- The new provisions are in accordance with Part 2.

No changes are proposed to Section 12.B Rules in relation to the discharge of human wastewater. New Policy 7.C.12 applies to discharges of human sewage:

“7.C.12: Reduce the adverse effects of discharges of human sewage from reticulated wastewater systems by:

(a) Requiring reticulated wastewater systems to be designed, operated, maintained and monitored in accordance with recognised industry standards; and

(b) Requiring the implementation of measures to:

(i) Progressively reduce the frequency and volume of wet weather overflows; and

(ii) Minimise the likelihood of dry weather overflows occurring; and

(c) Preferring discharges to land over discharges to water, unless adverse effects associated with a discharge to land are greater than a discharge to water; and

(d) Having particular regard to any adverse effects on cultural values.”

The wastewater system will be required to meet subdivision and land development standards under territorial authority jurisdiction. Overflows are not expected provided the system is designed appropriately in recognition of industry standards and on-going maintenance of the treatment and discharge system. The proposed discharge is to land and adverse effects on cultural values have been assessed as minor and can be adequately addressed through conditions of consent. The discharge is consistent with Policy 7.C.12.

6.4 Section 104(1)(c) - Any other matters

The Kai Tahu ki Otago Natural Resource Management Plan 2005 (NRMP) is considered to be a relevant other matter for the consideration of this application. This is because the RPW is yet to be amended to take into account this Plan and this Plan expresses the attitudes and values of the four Papatipu Rūnaka: Te Rūnanga o Moeraki, Kāti Huirapa Rūnaka ki Puketeraki, Te Rūnanga o Ōtākou and Hokonui Rūnanga. The following objectives and policies of are of most relevance to this application:

- To require land disposal for human effluent and other contaminants.
- To require monitoring of all discharges and that this be undertaken on a regular basis and all information, including an independent analysis of monitoring results, be made available to Kai Tahu ki Otago.

- To require that all discharge systems are well maintained and regularly serviced. Copies of all service and maintenance records should be available to Kai Tahu ki Otago upon request.
- To require visible signage informing people of the discharge area. Such signs are to be written in Maori as well as English.
- To require groundwater monitoring for all discharges to land.

As effluent from the treatment and disposal system is to be discharged to land, the proposed activity is not considered inconsistent with the above management policies. Monitoring and reporting of the discharges has been recommended. The proposal is in accordance with the NRMP.

The Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008 - The Cry of the People, Te Tangi a Tauira is considered to be a relevant other matter for the consideration of this application. This is because the RPW is yet to be amended to take into account this Plan and this Plan expresses the attitudes and values of the four Rūnanga Papatipu o Murihiku – Awarua, Hokonui, Ōraka/Aparima and Waihōpai.

- Ensure that Ngāi Tahu ki Murihiku are provided with the opportunity to participate through pre hearing meetings or other processes in the development of appropriate consent conditions for discharge consents, including monitoring conditions.

Require that sufficient and appropriate information is provided with applications to allow tangata whenua to assess cultural effects (e.g. nature of the discharge, treatment provisions, assessment of alternatives, actual and potential effects).

- Assess proposed wastewater discharge activities in terms of:
 - type/ nature of the discharge;
 - location and sensitivity of the receiving environment;
 - cultural associations with location of operations;
 - actual and potential effects on cultural values;
 - available best practice technology;
 - mitigation that can occur (e.g. using plants to filter waste, discharging at specific times to minimise impact, treatment options)
 - community acceptability;
 - cost.
- Avoid the use of water as a receiving environment for the direct, or point source, discharge of contaminants. Even if the discharge is treated and therefore considered “clean”, it may still be culturally unacceptable. Generally, all discharge must first be to land.

- Assess waste disposal proposals on a case by case basis, with a focus on local circumstances and finding local solutions.
- Wastewater disposal options that propose the direct discharge of treated or untreated effluent to water need to be assessed by the kaitiaki rūnanga on a case by case, individual waterway, basis. The appropriateness of any proposal will depend on the nature of the proposal, and what waterway is involved. Individual waterways possess their individual mauri and values, and kaitiaki rūnanga are in the best position to assess the potential impacts of a proposal on such values.
- Encourage creative, innovative and sustainable approaches to wastewater disposal that make use of the best technology available, and that adopt principles of waste reduction and cleaner production (e.g. recycling grey water for use on gardens, collecting stormwater for a pond that can then be used for recreation in a new subdivision).
- Require that the highest environmental standards are applied to consent applications involving the discharge of contaminants to land or water (e.g. standards of treatment of sewage).
- Require soil risk assessments (type and percolation of the soils) prior to consent for discharge to land, to assess the suitability and capability of the receiving environment. Wastewater loading rates (mm/day) must reflect effluent quality and soil properties.
- Encourage the establishment of wetland areas, where practical, to improve discharge to land activities, through allowing Papatūānuku the opportunity to filter and clean any impurities.
- Require the use of buffer zones, bunds and other mechanisms to prevent wastewater from entering waterways.
- Promote the use of high uptake vegetation (e.g. commercial production forest plantations) for wastewater disposal, and to ensure that Ngāi Tahu ki Murihiku are involved in decisions relating to such disposal.
- Any discharge activity must include a robust monitoring programme that includes regular monitoring of the discharge and the potential effects on the receiving environment. Monitoring can confirm system performance, and identify and remedy any system failures.
- Require that large scale wastewater disposal operations (e.g. town sewage schemes, industry) develop environmental management plans, including contingency plans to cope with any faults, breakdowns, natural disasters, or extreme weather events (e.g. cash bonds for liability).
- Duration of consent for wastewater disposal must recognise and provide for the future growth and development of the industry or community, and the ability of the existing operations to accommodate such growth or development.
- Recommend a duration not exceeding 25 years, for discharge consents relating to wastewater disposal, with an assumption that upon expiry (if not before), the quality of the

system will be improved as technological improvements become available. In some instances, a lesser term may be appropriate, with a condition requiring the system is upgraded within a specified time period.

- Require conditions of consent that allow for a 5-year review of wastewater disposal activities. During review, consent holders should be required to consider technological improvements. If improvements are available, but not adopted, the consent holder should provide reasons why.

As effluent from the treatment and disposal system is to be discharged to land, the proposed activity is not considered inconsistent with the above management policies. Monitoring and reporting of the discharge has been recommended. A term of no more than 25 years has been recommended and a review condition has also been recommended. The activity is consistent with the Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan.

There are no other matters of concern that the Council considers relevant to this application.

7. Sections 105 and 107

Section 105(1) states for a discharge permit that the Consent Authority shall have regard to:

- a) the nature of the discharge, the sensitivity of the receiving environment, and the applicant's reasons for the proposed choice; and
- b) any possible alternative methods of discharge including discharge into any other receiving environment.

Section 107(1) of the Act states that a discharge permit shall not be granted if, after reasonable mixing, the contaminant or water discharged is likely to give rise to all or any of the following effects in the receiving waters:

- The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended material; or
- Any conspicuous change in the colour or visual clarity; or
- Any emission of objectionable odour; or
- The rendering of fresh water unsuitable for consumption by farm animals; or
- Any significant adverse effects on aquatic life.

These matters were considered in the notification report and the assessment of adverse effects. In summary, consent can be granted in regard to the matters in s105() and 107(1) of the Act.

8. Part 2 of the Act

Under Section 104(1) of the RMA, a consent authority must consider resource consent applications "subject to Part 2" of the RMA, specifically, sections 5, 6, 7 and 8.

The Court of Appeal has recently clarified how to approach the assessment of "subject to Part 2" in section 104(1). In *R J Davidson* the Court of Appeal found that (in summary):⁴

- Decision makers must consider Part 2 when making decisions on resource consent applications, where it is appropriate to do so. The extent to which Part 2 of the RMA should be referred to depends on the nature and content of the planning documents being considered.
- Where the relevant planning documents have been prepared having regard to Part 2 of the RMA, and with a coherent set of policies designed to achieve clear environmental outcomes, consideration of Part 2 is not ultimately required. In this situation, the policies of these planning documents should be implemented by the consent authority. The consideration of Part 2 "would not add anything to the evaluative exercise" as "genuine consideration and application of relevant plan considerations may leave little room for Part 2 to influence the outcome". However, the consideration of Part 2 is not prevented, but Part 2 cannot be used to subvert a clearly relevant restriction or directive policy in a planning document.
- Where it is unclear from the planning documents whether consent should be granted or refused, and the consent authority has to exercise a judgment, Part 2 should be considered.
- If it appears that the relevant planning documents have not been prepared in a manner that reflects the provisions of Part 2, the consent authority is required to consider Part 2.

The discharge of treated wastewater to land is consistent with the purpose and principles of the Act as outlined in Sections 5-8. The proposed activities are consistent with sustaining the potential of natural resources to meet the needs of future generations, the safeguarding of the life-supporting capacity of water and avoiding, remedying and mitigating adverse effects on the environment. The principles of the Treaty of Waitangi have been taken into account and the application has been processed according to Council's protocol for consultation with Iwi.

Overall, the application is consistent with Part 2 of the Act, given the potential adverse effects can be mitigated by adopted and recommended conditions of consent.

9. Overall Recommendation

Under section 104B it is recommended that this consent application is approved subject to conditions for the following reasons

⁴ *R J Davidson Family Trust v Marlborough District Council* [2018] NZCA 316.

- In accordance with an assessment under ss104(1)(a) and (ab) of the RMA, the actual and potential effects from the proposal are found to be acceptable, because:
 - The adverse effects on water quality can be addressed through recommended conditions of consent.
 - Although the treatment proposed is not best practise in respect of the nitrogen limit, the adverse effects of nitrogen can be carefully managed through specific conditions of consent in relation to nitrogen limits and mass calculations;
 - Monitoring conditions have been recommended to monitor the effects of the discharge and to ensure wastewater is treated to a high quality, in addition to this baseline monitoring has also been recommended that will ensure the effects of the discharge can be monitored overtime and compared to the existing environment prior to discharge;
 - The adverse effects on soil quality are expected to be no more than minor provided that the discharge is undertaken in accordance with the application. Ongoing monitoring of soil is proposed to ensure the effects of the discharge on soil quality are monitored overtime;
 - The adverse effects on cultural values are considered minor and can be mitigated through conditions of consent addressing wastewater quality and monitoring. The discharge is to land and the discharge is not expected to degrade the health of surrounding water bodies.
 - The proposal will have a positive effect by providing a reticulated wastewater system for Kingston Township and the proposal will support local economic development.

- In accordance with an assessment under s104(1)(b) of the RMA, the proposal is found to be consistent with the relevant statutory documents, For the following reasons:
 - The proposed discharge is consistent with relevant iwi management plans as the discharge is to land and robust monitoring conditions are proposed;
 - The proposed discharge is not expected to degrade freshwater within the receiving environment and is consistent with the NPS-FW;
 - The proposed discharge is consistent with the relevant objectives and policies of the RPW as assessed under Section 6.2.4.
 - The activity is not inconsistent with the P-ORPS 2021 and PO-RPS.

- In accordance with an assessment under s104(1)(c) of the RMA no other matters were considered relevant or reasonably necessary to determine the application(s).

- Consent can be granted in regard to the matters in s105() and 107(1) of the Act and the discharge method proposed is assessed as best practicable option.
- There is no need to look to Part 2 of the RMA in making this decision, as the objectives and policies of the relevant statutory documents were prepared having regard to Part 2 of the RMA and they have captured all relevant planning considerations. They also contain a coherent set of policies designed to achieve clear environmental outcomes and provide a clear framework for assessing all relevant actual and potential effects. An assessment against Part 2 would not add anything to the evaluative exercise

Overall, the proposal is consistent with all relevant planning documents and the adverse effects of the discharge can be mitigated through conditions of consent.

10. Section 108 and 108AA of the Act

Should the decision maker wish to grant the application the attached conditions on RM21.191.01 are recommended in accordance with Sections 108 and 108AA of the Act.

Conditions have been recommended in order to mitigate adverse effects in relation to water and soil quality and effects on cultural values. This includes wastewater quality monitoring and wastewater volume monitoring; surface water monitoring, groundwater monitoring and soil monitoring.

The applicant has offered a number of conditions. Most of these conditions are appropriate as they relate to mitigating the adverse effects of the discharge, including the treatment quality, the components of the wastewater system and monitoring of the wastewater quality. These conditions have been adapted to better address potential adverse effects.

The recommended condition in relation to the duration of consent, lapse date for consent and for a s128 review condition are discussed below.

The full set of recommended conditions is appended to this s42A recommendation.

11. Term of Consent (Section 123)

The application seeks a term of 35 years.

It is considered that a duration of 15 years is appropriate. In reaching this recommendation the following relevant factors as distilled from case law have been considered:

- The duration of a resource consent should be decided in a manner which meets the RMA's purpose of sustainable management;
- Whether adverse effects would be likely to increase or vary during the term of the consent;
- Whether there is an expectation that new information regarding mitigation would become available during the term of the consent;

- Whether the impact of the duration could hinder implementation of an integrated management plan (including a new plan);
- That conditions may be imposed requiring adoption of the best practicable option, requiring supply of information relating to the exercise of the consent, and requiring observance of minimum standards of quality in the receiving environment;
- Whether review conditions are able to control adverse effects;
- Whether the relevant plan addresses the question of the duration of a consent;
- The life expectancy of the asset for which consents are sought;
- Whether there was significant capital investment in the activity/asset; and
- Whether a particular period of duration would better achieve administrative efficiency.

It is considered the use of a review condition alone is not sufficient to control unexpected adverse effects that may arise, the discharge is of large scale in a cool climate of Central Otago could result in unexpected adverse effects. A term of 15 years is recommended to address unexpected adverse effects that may arise.

It is also expected that a new Land and Water plan, in addition to Resource Management Act changes, along with Three Waters Reforms will also occur in the next 15 years and granting a term longer than this may hinder the development of any new plans.

12. Lapse Period (Section 125)

Under s125, if a resource consent is not given effect to within five years of the date of the commencement (or any other time as specified) it lapses automatically, unless the council has granted an extension. A five-year lapse period is appropriate for the following reasons:

- It is considered the development can be given effect to within 5 years.

13. Cancellation of Consent (Section 126)

Pursuant to section 126(1) of the RMA, the Consent Authority may cancel this consent by written notice served on the Consent Holder if the consent has been exercised in the past but has not been exercised during the preceding five years, unless expressly provided otherwise by the resource consent.

An advice note is recommended to inform the applicant of the provisions under s126(2)(2)(b), including their appeal rights.

13.1 Review Condition (Section 128)

The RMA provides for the council to review conditions at any time or times specified for that purpose in the consent where there are any adverse effects that may arise from the exercise of the consent, or in relation to a coastal, water or discharge permit where a regional plan or NES has changed. In addition, the council can review other conditions (such as those outlined in the advice note above) without having to set out in a condition the timeframes within which it will review them.

A review condition has been recommended. The reasons for this are:

- To vary the monitoring, operating and reporting requirements, and/or performance standards in order to take account of information, including the results of previous monitoring and changed environmental knowledge;
- To deal with any adverse effect on the environment which may arise or potentially arise from the exercise of this consent and which it is appropriate to deal with at a later stage, in particular adverse effects on water and soil quality; and
- In the case of a discharge permit to do something which would otherwise contravene section 15 or 15B of the RMA, to require the adoption of the best practicable option to remove or reduce any adverse effects on the environment, in particular adverse effects on soil and water quality.

Appendix 1: Recommended Conditions of Consent

Appendix 2: Technical reviews by Pattle Delamore Partners Ltd

Appendix 3: Technical reviews by E3 Scientific

Appendix 4: Affected Party Approval Te Ao Marama Inc

Appendix 5: Southern District Health Board Letter dated 3 December 2021

Appendix 6: Kingston Community Association Letter dated 9 December 2021

Appendix 7: Affected Party Approval Aukaha

Appendix 1: Recommended Conditions of Consent

Consent No. RM21.088.01

DISCHARGE PERMIT

Pursuant to Section 104B of the Resource Management Act 1991, the Otago Regional Council grants consent to:

Name: Queenstown Lakes District Council

Address: Private Bag 50072, Queenstown

To discharge treated municipal wastewater to land for the purpose of disposal of wastewater from Kingston Township.

For a term expiring 16 November 2036

Location of consent activity: Kingston, approximately 1 kilometre south west of the intersection of the intersection of Kingston Garston Highway (State Highway 6) and Kent Street.

Legal description of consent location: P34 Part Run 323A Kingston Survey District

Map Reference: NZTM 126409E 4969804N- Centre Point Land Treatment Area
1
NZTM 126329E 4970155N- Centre Point Land Treatment Area
2

Conditions

Specific

1. The discharge of treated wastewater to land from Kingston Township must be carried out in accordance with the plans and all information submitted with the application, detailed below, and all referenced by the Consent Authority as consent number RM20.164:
 - a) Application form, and assessment of environmental effects dated May 2020.
 - b) Further information response cover letter dated 16 March 2021;

- c) Further information memorandum by Lowe Environmental Impact dated 15 March 2021;
- d) Memorandum dated 11 June 2021 by Lowe Environmental Impact dated 11 June 2021; and
- e) Email correspondence dated 23 June 2021 from Brian Ellwood;

If there are any inconsistencies between the above information and the conditions of this consent, the conditions of this consent will prevail.

2. This resource consent authorises the discharge of treated municipal wastewater from Kingston Township onto the area shown in Map 1 attached to this consent and as shown in the application for consent dated May 2020. The discharge must be managed so that:
 - a) The maximum volume of wastewater discharged must not exceed 1,800 cubic metres per day.
 - b) The rate of application does not exceed 12 mm per day in any part of the disposal area.
 - c) The average daily total volume over a rolling 30-day period must not exceed 900 cubic metres per day.

3. The key components of the wastewater treatment and land treatment area must be consistent with those described in the application; as shown on the attached plant schematic drawing in Appendix 1 and must comprise at least the following minimum, or additional, components, dimensions and standards:
 - a) Wastewater treatment system:
 - i. Grease traps must be installed at the outlets of all restaurants, cafés and commercial food producing facilities connecting to the wastewater treatment system;
 - ii. tertiary level treatment and oxidation pond as described in the application and shown in Appendix 1 for up to 450 connections (Stage 1);
 - iii. sequence batch reactor technology that provides tertiary level treatment, a calamity pond, sludge buffer tank, and sludge dewatering as described in the application and shown in Appendix 1 when there are 451 or more connections (Stage 2);
 - iv. A wastewater discharge flow meter must be installed for both Stage 1 and 2;
 - v. An audio/visual alarm system must be incorporated for both Stage 1 and 2; and
 - vi. Emergency storage volume, equivalent to 24 hours peak flow volume, above the high water alarm levels, within the wastewater treatment system for both Stage 1 and 2.
 - b) Wastewater land treatment area:

- i. A minimum of 7.5 hectares of land disposal area must be provided for Stage 1 and a minimum of 15 hectares must be provided for Stage 2;
 - ii. at least 25 hectares of total land disposal area must be available for the discharge;
 - iii. subsurface pressure compensating drip irrigation buried to a depth greater than 200 millimetres below the ground surface;
 - iv. dripper lines at a maximum of 1 metre spacing and emitters spaced at a maximum of 0.6 metre centres;
 - v. the disposal area must be located in accordance with the approved plans, and must be:
 - 1. a minimum distance of 10 metres from roadside drains;
 - 2. a minimum distance of 50 metres from surface water bodies;
 - 3. a minimum distance of 50 metres from subsurface and stormwater drains;
 - 4. a minimum distance of 20 metres from property boundaries;
 - 5. a minimum distance of 50metres from any bore (except monitoring bores);
 - 6. a minimum of 5 metres from any ephemeral pond;
 - 7. a minimum of 10 metres from any wetland and pond; and
 - vi. Managed by a cut and carry management regime designed and managed in a way that maximise plant uptake and removal of nutrients from the site.
4. Waterbody buffer zones must be established and maintained as follows:
- a) If land treatment area dripper lines are located within 15 metres from any permanent wetland or pond, the consent holder must, prior to the application of wastewater establish and maintain a native riparian vegetation buffer of a width of 10 metres between any the permanent wetland or pond and the nearest Land Treatment Area dripper line;
 - b) Prior to application of wastewater to the discharge area, ephemeral ponding areas must be identified and the consent holder must establish a 5 metre non- irrigated buffer around any ephemeral pond; and
 - c) The buffers must be maintained and any plantings that die must be replaced with native plantings in the next available planting season.
5. Prior to commissioning the treatment and disposal system, the Consent Holder must supply the Consent Authority with a Producer Statement 4, Code Compliance Certificate or Certificate of Acceptance, certifying that the treatment and disposal system has been installed in accordance with Condition 3. These must include, but are not limited to, the following for the new stage:
- a) plans of the treatment system described in Condition 3 of this consent;
 - b) plans of the land treatment area clearly showing all the irrigation zones;
 - c) details of the area of each zone, the maximum volumes of wastewater discharged to each zone (litres per second), and the duration (hours) and daily frequency of each application to the zones;

- d) confirmation that the total installed and operational land treatment area is sufficient to meet the maximum application rate in Condition 2 for the total commissioned treatment plant capacity; and
 - e) photographs of each of the new irrigation zones.
6. Prior to commissioning the treatment and land treatment areas, the land treatment areas must be marked out by any means that ensures the extent is identifiable on the ground surface and must remain marked out for the duration of the consent. The land treatment areas must not be used:
- a) For roading whether sealed or unsealed;
 - b) As a hardstanding area;
 - c) For erecting buildings or any non-effluent systems structures;
 - d) For activities that require intensively managed grass surfaces (e.g. grass tennis courts or bowling greens or golf tees and greens);
 - e) For grazing stock, excluding sheep; and
 - f) No vehicle must park or drive over the disposal field with the exception of harvest for the cut and carry and for maintenance.

Performance Monitoring

7. Prior to the discharge commencing the Consent Holder must establish a water quality monitoring network by:
- a) Installing groundwater monitoring wells in the locations identified in the attached monitoring bore location plan attached as Map 2;
 - b) Once installed, the bore locations and reference levels should be surveyed, and borelogs and bore construction details must be submitted to the Consent Authority confirming location, depth, groundwater levels and geology; and
 - c) Establish surface water monitoring sites in the locations identified in the surface water sampling location plan attached as Map 3 and as identified in the Aquatic Ecology Assessment by Ryder Environmental Ltd dated November 2020. A water level staff must be surveyed at each site to enable water level measurements during each survey.
8. Representative surface water and groundwater samples must be taken or overseen by a suitably qualified professional from the monitoring network established in Condition 7. All samples must be collected in accordance with AS/NZS 5667.11:1998. Groundwater and surface water samples must be analysed for the following parameters:
- a) Temperature;
 - b) pH;
 - c) Dissolved oxygen;

- d) Electrical conductivity;
- e) Chloride;
- f) Escherichia coli (E.coli);
- g) CBOD5;
- h) Total suspended solids;
- i) Nitrate+Nitrite nitrogen (NNN);
- j) Total ammoniacal nitrogen (NH₄-N); and
- k) Total Kjeldahl Nitrogen (TKN)
- l) Dissolved reactive phosphorus (DRP)
- m) Total Phosphorus

Note: Temperature, pH, Dissolved oxygen, and electrical conductivity should be measured in the field with a calibrated water quality meter. Groundwater and surface water levels should be recorded at the time of sampling.

9. Samples must be collected and analysed under Condition 8 with the following frequency:
 - a) For the purposes of establishing a baseline of existing effects, groundwater and surface water monitoring must be undertaken monthly for at least 12 months prior to the discharge commencing, including at least one sample that represents a wet weather event.
 - b) Following the commissioning of the wastewater treatment plant and land treatment areas, groundwater and surface water monitoring should be conducted in February, April, July, and October each year, unless more frequent monitoring is required as specified in the report prepared under 10(a).

Note: A wet weather event for the purposes of Condition 9(a) means one sampling event that is taken on the day of or the day following when rainfall in the preceding 24 hr period has exceeded 10 mm.

10.
 - a) Within one month of collecting all baseline monitoring data in accordance with Condition 9 (a), a report of the results and an interpretation of the results must be prepared and submitted to the Consent Authority. The report must be prepared by a suitably qualified and experienced person. The report must propose appropriate trigger levels and the trigger levels must be approved by the Consent Authority.
 - b) The results of all samples taken in accordance with Condition 9(b) must be compared to the trigger levels presented in the report under Condition 10(a). Should the results exceed the trigger levels, an assessment, including further sampling as required, must be undertaken to determine whether the exceedance(s) are attributable to the discharge, and identify any potential adverse effects on water quality or aquatic ecology associated with the exceedances. The report must also identify any immediate or longer-term remedial action that will be implemented. The Consent Authority must be notified within 5 working days of the exceedance being identified and must be provide a copy of the assessment within 30 working days.

11. Should the results of the assessment undertaken in accordance with Condition 10 (b) identify that the exceedance(s) in contaminant concentrations are attributable to the discharge activity, and adverse effects on water quality or aquatic ecology are occurring, then within 2 working days the Consent Authority must be provided with confirmation that the remedial actions set out in the report prepared in accordance with Condition 10(b) will be undertaken provided they are within scope of the consent.
- 12.
- a) Prior to commissioning the land treatment area, the consent holder must install a flow meter and datalogger on the outlet pipe from the treatment system to record the volume of effluent discharged to the land treatment area. The flow meter must have an accuracy range of +/- 5%.
 - b) Once the flow meter and datalogger is installed, the consent holder must measure and record the daily volume of effluent discharged to the land treatment area.
 - c) The flow records must be forwarded to the Consent Authority with the annual report required under Condition 26 of this consent, and upon request. Data must be provided electronically giving the date, time and flow rates in no more than 15-minute increments of water and the datalogger downloaded annually and sent to Council with the annual report required under Condition 26 of this consent.
13. The Consent Holder must provide written verification to the Consent Authority that the discharge flow meter has been verified as accurate by a suitably qualified person by 31 July of the first year of the exercise of this consent and then at five-yearly intervals thereafter.
14. Prior to commissioning the treatment and land treatment area, the consent holder must establish adequate facility and access for wastewater quality sampling, such as a hand operated tap/valve that is on the outlet pipe from the treatment system before the wastewater discharges to the land treatment area.
15. Samples of treated wastewater prior to discharge from the tap/valve installed under Condition 14 must be collected on any one day of each month following the commission of the wastewater treatment plant and land treatment area and analysed for the following parameters:
- a) pH;
 - b) Electrical conductivity;
 - c) Chloride;
 - d) BOD5;
 - e) Total suspended solids;
 - f) Nitrate+Nitrite nitrogen (NNN);
 - g) Total ammoniacal nitrogen (NH₄-N); and
 - h) Total Kjeldahl Nitrogen (TKN)
 - i) Dissolved reactive phosphorus (DRP)

j) Total Phosphorus

Note: Total Nitrogen can be calculated by the sum of NNN and TKN.

16.

- a) If the number of connections to the waste water treatment plant (WWTP) is less than 450, the results collected under Condition 15 must not exceed the following limits:
- i. 50 milligrams per litre of biochemical oxygen demand (5 day);
 - ii. 30 milligrams per litre of total suspended solids;
 - iii. 50 milligrams per litre of total nitrogen;
 - iv. 10 milligrams per litre of total phosphorus;
 - v. 10,000 colony forming units per 100 millilitres of *Escherichia coli* (rolling 12-month geometric mean).
- b) If the number of property connections to the WWTP is greater than 450 the results collected under Condition 15 of this consent must not exceed the following limits:
- i. 20 milligrams per litre of biochemical oxygen demand (5 day);
 - ii. 30 milligrams per litre of total suspended solids;
 - iii. 30 milligrams per litre of total nitrogen;
 - iv. 10 milligrams per litre of total phosphorus;
 - v. 10,000 colony forming units per 100 millilitres of *Escherichia coli* (rolling 12-month geometric mean).

17. In the event of one or more of the limits set out in Condition 16 being exceeded, the Consent Holder must resample and/or retest that parameter to confirm the exceedance within 5 working days. In circumstances where one or more of the limits set out in Condition 16 are exceeded on two consecutive sampling occasions and these results are confirmed exceedances (i.e. it is not due to faulty testing or other parameters affecting the results), the Consent Holder must report to the Consent Authority as follows:

- a) The Consent Authority must be notified within 48 hours of any confirmed exceedance; and
- b) This notification must include advice of any corrective actions taken by the Consent Holder.
- c) An incident report must be provided to the Consent Authority within 20 working days of the notification of the exceedance. This report must include:
- i. identification of the likely cause of the limit exceedance;
 - ii. the effects on the receiving environment likely to arise because of the limit exceedance;
 - iii. the management responses undertaken, or which may be necessary to prevent any further limit exceedances occurring;
 - iv. remedial action undertaken or which may be necessary and confirmation of implementation if the action required does not require resource consent.

18. The Total Nitrogen loading of the land treatment area must not exceed 450 kg N/ha/yr.

Advice Note: The Land Treatment Area loading rate of 450 kg N/ha/yr is calculated based on the daily flow data collected under Condition 12 multiplied by the Total Nitrogen concentration sampling collected under Condition 16 of this consent and divided by the land treatment area.

19. Olsen P of the land treatment area must not exceed 40mg/L for any samples as measured under Condition 24(b).

20. In the event any of the samples under Condition 24(b) of Olsen P limit has been exceeded, the Consent Holder must report to the Consent Authority as follows:

- a) The Consent Authority must be notified within 48 hours of any confirmed exceedance; and
- b) This notification must include advice of any corrective actions taken by the Consent Holder.
- c) An incident report must be provided to the Consent Authority within 20 working days of the notification of the exceedance. This report must include:
 - i. identification of the likely cause of the limit exceedance;
 - ii. the effects on the receiving environment likely to arise because of the limit exceedance;
 - iii. the management responses undertaken, or which may be necessary to prevent any further limit exceedances occurring;
 - iv. remedial action undertaken or which may be necessary and confirmation of implementation if the action required does not require resource consent.

21.

- a) During every grass/lucerne harvest event from the land treatment area, the consent holder must:
 - i. obtain one composite sample of grass for every five hectares of the land application area harvested. A composite sample must consist of ten samples of cut grass
 - ii. analyse the composite samples for total nitrogen and total phosphorus content;
 - iii. record the weight of grass harvested in kilograms of dry matter; and
 - iv. use the data obtained under Conditions 21(a)(ii) and 21(a)(iii) to determine the kilograms of nitrogen and phosphorus per hectare exported from the land application area via the cut and carry system.

- b) The results of this analysis must be presented in the annual report required under Condition 26 of this consent.
22. The consent holder must annually calculate the nitrogen mass balance to provide an estimate of the mass of nitrogen lost to groundwater from the land treatment area as follows:
- a) Calculate the total nitrogen applied to land each year less the total nitrogen removed by harvesting each year;
 - b) The total nitrogen applied to the land treatment area must be calculated on a monthly basis using the total volume of wastewater applied that month multiplied by the concentration of total nitrogen sampled from the waste water treatment plant discharge in the same period less ammonia volatilisation (5% of the applied nitrogen) and less denitrification (10% of applied nitrogen).
 - c) The total nitrogen applied to the land treatment area for the yearly reporting period is the sum of total nitrogen in Condition 22(b)
 - d) The Total Nitrogen removal by harvesting grass or lucerne from the land treatment area each year must be estimated by obtaining dry matter content and total nitrogen content after each crop/plant harvest in accordance with Condition 22(a).
23. The nitrogen mass balance calculated in accordance with Condition 22 must not exceed:
- a) 1,050 kg N/year while existing properties (as at the date of the consent) within Kingston have septic tanks discharging to the ground; or
 - b) 1,050 kg N/year plus 5.2 kg N/year for every existing property that has been connected and conveyed to the WWTP; and
 - c) The results of the nitrogen mass balance calculation must be presented in the annual report required under Condition 26 Of this consent.
24. Ecological assessments of the surface water quality sampling sites established under Condition 7(c) and shown on Map 3 must be undertaken following the sampling methodology in the Aquatic Ecology Assessment report prepared by Ryder Environmental Ltd dated November 2020 to provide a baseline of effects. Within three months of the assessment a report of the results and an interpretation of the results must be prepared and submitted to the Consent Authority. The report must be prepared by a suitably qualified and experienced person. The assessments should be completed:
- a) on any day of October in the first year following the commissioning of the wastewater treatment plant and land treatment area; and
 - b) on any day of October if exceedance(s) in contaminant concentrations have occurred that are attributable to the discharge activities under Condition 11.
25. An assessment of the soil conditions must be undertaken by a suitably qualified and experienced practitioner on an annual basis. The assessment must include:

- a) Four soil samples must be collected at random from within the Land Treatment Area at the following depths:
 - i. 0 -20 cm;
 - ii. 30 – 50 or at the application depth; and
 - iii. 80 – 100 cm
- b) The four soil samples from each depth must then be composited and analysed for the following:
 - i. Exchangeable Cations (Sodium, Potassium, Magnesium, Calcium);
 - ii. Exchangeable Sodium Percentage;
 - iii. Olsen P;
 - iv. Total Phosphorus
 - v. P retention (anion storage capacity)
 - vi. Cation exchange capacity;
 - vii. Base saturation;
 - viii. Total carbon;
 - ix. Organic Matter;
 - x. Total Nitrogen;
 - xi. Available Nitrogen;
 - xii. pH; and
 - xiii. Suite of seven heavy metals (Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Zinc) every 5 years.
- c) At the application depth, soil must also be tested for:
 - i. in situ infiltration capacity (Ksat) at the application depth;
 - ii. indications of oxidation reduction potential (gleying) of the soil;
 - iii. an infield assessment of soil structure
- d) A control site must be chosen outside of the Land Treatment Area, and samples collected and tested in accordance with Conditions 27(a), 20(b), and 20(c).
- e) The results of the soil assessment must be submitted to the consent authority within the annual report required under Condition 26.

26. Every 12 months following the date of commencement of the discharge a monitoring report must be prepared relating to the activities authorised by this consent over the preceding calendar year. This report must be prepared by a suitably qualified person and must include, but not be limited to:

- a) Maintenance service records and malfunctions or breakdowns and the corrective action taken;
- b) Flow monitoring records;
- c) Discharge sampling and analysis;
- d) Copies of all analytical sample results collected under Conditions 8, 15, 21 and 25 of this consent;
- e) Groundwater, surface water and soil sampling and analysis including identification of any effects and any mitigation measures necessary to reduce contaminants; and
- f) Maintenance service report and recommendations for improvements in the system;

- g) A comparison of wastewater quality and quantity results from the past calendar year with the results of the previous year and identification of any trends;
- h) Overview of compliance with all conditions of this consent including the OMM;
- i) Details of nitrogen balance including the number of existing septic tanks in Kingston that are connected to the wastewater treatment plant;
- j) Details of the cut and carry operation including the number of harvests, mass harvested, dry matter nitrogen and phosphorous concentration;
- k) The number of connections to the waste water treatment plant; and
- l) A summary of any complaints received.

27. The report required by Condition 26 must be certified by the Consent Authority and identify if there is a need to implement additional methods or improvements to the wastewater treatment and disposal system. All recommendations specified in the report and within scope of the consent must be implemented.

28. Prior to commissioning the treatment and land disposal system, the consent holder must prepare and forward to the Consent Authority an Operations and Management Manual (OMM) for the treatment and land disposal system to ensure its effective and efficient operation at all times. The system must be operated in accordance with this manual at all times [unless required by other conditions of this consent which prevail over the manual], which must be updated as appropriate. The OMM must be to the satisfaction of the Consent Authority and include, as a minimum:

- a) A brief description of the treatment and disposal system, including a site map that shows the location of the treatment system, discharge locations, sampling sites and the drainage network;
- b) The date the discharge will commence;
- c) Key operational matters including weekly, monthly and annual maintenance checks;
- d) Monitoring requirements and procedures;
- e) A management plan for the cut and carry operation including procedures for harvesting grass from the site and for maximising grass growth and nitrogen and phosphorus uptake by grass such as soil tests and pest and weed control.
- f) A representative farm nutrient balance/budget for the land treatment area inclusive of wastewater applications;
- g) Contingency plans in the event of system malfunctions or breakdowns (including provision for the removal and disposal of effluent by tanker truck should there be prolonged system failure);
- h) The means of receiving and dealing with any complaints;

- i) Key personnel and contact details; and
 - j) Emergency contact phone numbers
29. All discharges must comply with the certified OMM at all times. A copy of the certified OMM must be held on-site at all times.
30. Prior to the commissioning of the treatment and land disposal system, a maintenance service contract must be forwarded to the Consent Authority, which provides for the servicing of the treatment and disposal system at least once every 12 months, must be entered into with a suitably qualified person/organisation. A maintenance service contract must be maintained for the duration of the consent. Any updates must be provided to the Consent Authority. Following every service, a written report must be prepared, and a copy provided to the Consent Authority with the annual report required under Condition 25 of this consent.
31. An audit of the condition, operation and performance of the wastewater treatment and land disposal system must be undertaken by a suitably qualified professional every 5 years following commencing the discharge. The audit must include:
- a) An assessment of the condition of the wastewater treatment and land disposal system.
 - b) An assessment of the adequacy of the system to treat and dispose the consented wastewater volume and maximise removal of nutrients.
 - c) An up to date list of the component of the wastewater treatment system and land disposal system.
 - d) Recommendations including timeframes for any changes, upgrades, or remedial works to the treatment and land disposal system or process.
32. A copy of the audit report must be provided to the Consent Authority no later than 30 working days after the assessment is undertaken.
33. All recommendations specified in the audit report and within scope of the consent must be implemented to ensure the efficient and safe operation of the wastewater treatment system and disposal field.

General

34. The discharge of wastewater to land must not result in:
- a) Ponding of wastewater within or adjacent to the land disposal area;
 - b) Channelling of wastewater that results in overland runoff of wastewater beyond the land disposal area;

- c) Surface seepage (breakout) of wastewater within or beyond the land disposal area;
 - d) Odour emission resulting from the treatment and disposal system that is offensive or objectionable to such an extent that it has an adverse effect on the environment beyond the boundary of the property on which the consent is exercised;
 - e) Discharge of sludge of grease to land or water; and
 - f) Vehicle access over any part of the land disposal area except during harvest and for maintenance.
35. The wastewater treatment and land disposal system must be maintained in good working order at all times and in accordance with the operations and management manual as required under Condition 28.
36. All discharges must comply with the certified OMM at all times. A copy of the certified OMM must be held on-site at all times.
37. In the event that an unidentified archaeological site is located during works, the following will apply;
- a) Work must cease immediately at that place and within 20 metres around the site.
 - b) All machinery must be shut down, the area must be secured, and the Heritage New Zealand Pouhere Taonga Regional Archaeologist and the Consent Authority must be notified.
 - c) If the site is of Maori origin, the Consent Holder must also notify the appropriate iwi groups or kaitiaki representative of the discovery and ensure site access to enable appropriate cultural procedures and tikanga to be undertaken, as long as all statutory requirements under legislation are met (Heritage New Zealand Pouhere Taonga Act 2014, Protected Objects Act 1975).
 - d) If human remains (koiwi tangata) are uncovered the Consent Holder must advise the Heritage New Zealand Pouhere Taonga Regional Archaeologist, NZ Police, the Consent Authority and the appropriate iwi groups or kaitiaki representative and the above process under (c) will apply. Remains are not to be disturbed or moved until such time as iwi and Heritage New Zealand Pouhere Taonga have responded.
 - e) Works affecting the archaeological site and any human remains (koiwi tangata) must not resume until Heritage New Zealand Pouhere Taonga gives written approval for work to continue. Further assessment by an archaeologist may be required.
38. If this consent is not given effect to within a period of 5 years from the date of commencement of this consent, this consent must lapse under Section 125 of the Resource Management Act 1991.

Review

39. The Consent Authority may, in accordance with Sections 128 and 129 of the Resource Management Act 1991, serve notice on the consent holder of its intention to review the conditions of this consent within three months of each anniversary of the commencement of this consent, for the purpose of:
- a) Determining whether the conditions of this consent are adequate to deal with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage, or which becomes evident after the date of commencement of the consent; or
 - b) ensuring the conditions of this consent are consistent with any National Environmental Standards, Regulations, relevant plans and/or the Otago Regional Policy Statement; or
 - c) requiring the consent holder to adopt the best practicable option, in order to remove or reduce any adverse effect on the environment arising as a result of the exercise of this consent.
 - d) Reviewing the frequency of monitoring or reporting required under this consent;
 - e) Amending the monitoring programme set out in accordance with Conditions 7-33.

Notes to Consent Holder

1. *Under section 125 of the Resource Management Act 1991, this consent lapses five after the date of commencement of the consent unless:
 - a) *The consent is given effect to; or The Consent Authority extends the period after which the consent lapses**
2. *Section 126 of the Resource Management Act 1991 provides that the Consent Authority may cancel this consent by written notice served on the Consent Holder if the consent has been exercised in the past but has not been exercised during the preceding five years*
3. *If you require a replacement consent upon the expiry date of this consent, any new application should be lodged at least 6 months prior to the expiry date of this consent. Applying at least 6 months before the expiry date may enable you to continue to exercise this consent under section 124 of the Resource Management Act 1991 until a decision is made on the replacement application (and any appeals are determined).*
4. *The Consent Holder is responsible for obtaining all other necessary consents, permits, and licences, including those under the Building Act 2004, the Biosecurity Act 1993, the Conservation Act 1987, and the Heritage New Zealand Pouhere Taonga Act 2014. This consent does not remove the need to comply with all other applicable Acts (including the Property Law Act 2007 and the Health and Safety at Work Act 2015), regulations, relevant Bylaws, and rules of law. This consent does not constitute building consent approval. Please check whether a building consent is required under the Building Act 2004.*

5. *Under the Heritage New Zealand Pouhere Taonga Act 2014 an archaeological site is defined as any place in New Zealand that was associated with human activity that occurred before 1900 and provides or may provide, through investigation by archaeological methods, evidence relating to the history of New Zealand (see Section 6). For pre-contact Maori sites this evidence may be in the form of Taonga (artefacts) such as toki (adzes) or flake tools as well as bones, shells, charcoal, stones etc. In later sites of European/Chinese origin, artefacts such as bottle glass, crockery etc. may be found, or evidence of old foundations, wells, drains or similar structures. Pre-1900 buildings are also considered archaeological sites. Burials/koiwi tangata may be found from any historic period. Archaeological sites are legally protected under Sections 42(1) & (2) of the Heritage New Zealand Pouhere Taonga Act 2014. It is an offence under Section 87 of the Heritage New Zealand Pouhere Taonga Act 2014 to modify or destroy an archaeological site without an Authority from Heritage New Zealand Pouhere Taonga irrespective of whether the works are permitted, or a consent has been issued under the Resource Management Act 1993 or Building Act 1991.*
6. *Where information is required to be provided to the Consent Authority this is provided in writing to compliance@orc.govt.nz and the email heading is to reference RM20.164.01 and the condition/s the information relates to.*

Map 1: Land Treatment Area Location



Map 2: Groundwater Monitoring Bore Locations



Map 3: Surface Water Sampling Locations



Appendix 1: Schematic of Wastewater Treatment Plant

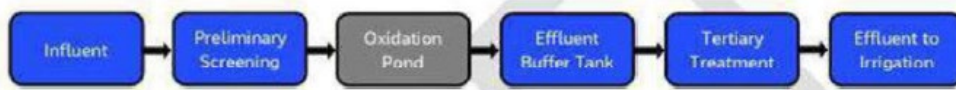


Figure 3.1: Process Flow Diagram for the Stage 1 Treatment

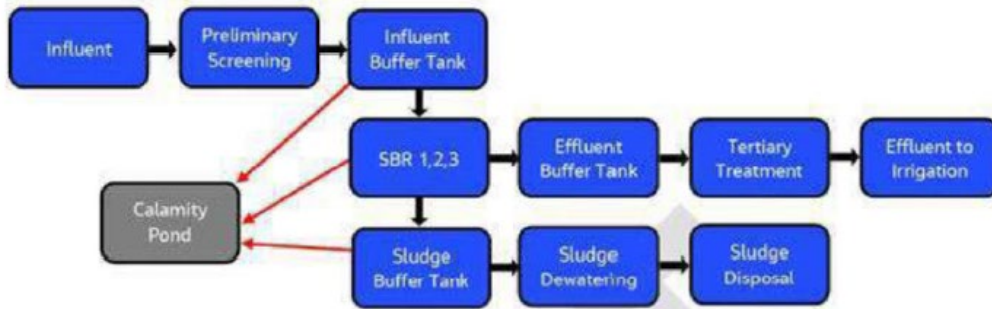


Figure 3.2: Process Flow Diagram for Stage 2 Ultimate Plant Design

Appendix 2: Technical reviews by Pattle Delamore Partners Ltd

Appendix 3: Technical reviews by E3 Scientific

Appendix 4: Affected Party Approval Te Ao Marama Inc

Appendix 5: Southern District Health Board Letter dated 3 December 2021

Appendix 6: Kingston Community Association Letter dated 9 December 2021

Appendix 7: Affected Persons Approval Aukaha