

In the matter of Application APP-20181129 by Southland District Council for resource consent to discharge treated wastewater to land and water, and to use land for construction of an effluent storage facility, for the Tokanui township sewage treatment system at 118 McEwan Street, Tokanui

Evidence of Janan Dunning

1 May 2019

Applicant's solicitor:

Michael Garbett

Anderson Lloyd

Level 10, Otago House, 477 Moray Place, Dunedin 9016

Private Bag 1959, Dunedin 9054

DX Box YX10107 Dunedin

p + 64 3 477 3973 | f + 64 3 477 3184

michael.garbett@al.nz

Qualifications and experience

- 1 My name is Janan Dunning.
- 2 I am a Principal Planner with Stantec New Zealand.
- 3 I hold a Master of Science in Geography from the University of Canterbury, and post-graduate certificates in Planning Practice, Theory and Law from Lincoln and Massey Universities. I have over 18 years' experience in resource management planning and have been a full member of the New Zealand Planning Institute since 2008.
- 4 I have substantial experience working with a range of district, regional and unitary plans in preparing applications for large and often complex infrastructure projects, primarily for local government clients. My experience includes providing resource management advice and preparing and leading resource consent applications and notices of requirement for a range of wastewater treatment and disposal projects, leading applications for transport network developments including for New Zealand Transport Agency Roads of National Significance, and leading the planning processes for stormwater management projects, community water supply schemes, and various large-scale irrigation schemes. From this experience I have a solid understanding of the effects of infrastructure operations, and the importance of such infrastructure to environmental and community wellbeing.
- 5 I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014. This evidence has been prepared in accordance with it and I agree to comply with it. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

Scope of evidence

- 6 My evidence includes:
 - (a) A brief overview of the background to the application.
 - (b) A summary of the matters raised in submissions, and subsequent amendments to the application.
 - (c) A summary of the key matters to be considered in determining this application.
 - (d) My assessment of the activity in the context of the applicable policy framework.

Executive summary

- 7 A discharge permit authorising the discharge of up to 55 m³/day of treated wastewater to land and to water, and a land use consent authorising the construction and use of an infiltration trench (a form of effluent storage facility) within 50 m of a surface water body are sought. The proposed infiltration trench between the treatment ponds and the Tokanui River is intended to facilitate the discharge of treated wastewater to land, and to provide land contact for treated wastewater prior to discharging to the Tokanui River.
- 8 While the discharge is a discretionary activity, the overall proposal is a non-complying activity, based on the proximity of the proposed infiltration trench to the Tokanui River. Regardless, in my opinion the proposal passes both the policy and effects gateways of s104D. As it will not cause any of the effects identified in s107(1)(c) – (g) of the Resource Management Act 1991 (**RMA**), there is no barrier to considering the application under s104 and granting it under s104B.
- 9 Analysis of data from ground and surface water samples shows that the existing effects of the discharge of treated wastewater to land via the base of the ponds on groundwater and connected surface water are minimal. The effects on the quality of the Tokanui River resulting from direct discharges are expected to reduce further with the installation of the infiltration trench, primarily as a result of reducing the volume and frequency of direct discharges.
- 10 The existing WWTP ponds have been shown to be consistent both with industry standards and good management practice, and are resulting in effects on the receiving environment that are no more than minor. Lining the ponds as raised in the Officer's Report would be inconsistent with industry standards, is not considered necessary and the effects of doing so have not been considered in detail. A separate consideration of the environmental effects of the activity would be needed, and any necessary resource consents sought separately if the ponds were proposed to be lined in the future.
- 11 The comparison in the Officer's Report of the WWTP ponds with Farm Effluent Ponds is not appropriate, given they have different functions and purposes, different environmental effects associated with them, and are addressed separately by the regional rules and policy frameworks. There is therefore no conflict within the planning framework that would have an adverse effect on the integrity of the regional planning framework.

Background

- 12 Existing resource consent 201599 held by the Southland District Council (SDC) authorises the discharge of treated wastewater and contaminants from the Tokanui WWTP to the Tokanui River and expired on 8 September 2018. For the

record, this application is for a new (replacement) resource consent to authorise the discharge of 55 m³/day of treated wastewater from the Tokanui WWTP to land, and to water (the Tokanui River and groundwater). The current application was lodged with Environment Southland on 26 February 2018, and was confirmed as received and accepted on 1 March 2018, being more than six months prior to the expiry date. In accordance with the timeframes set out in section 124(1)(d) of the RMA, the SDC may therefore lawfully continue to operate under the conditions of 201599 until a decision is made on this application, and it is beyond challenge.

- 13 The scope of the application and the nature of the activity and associated effects on the receiving environment are described in the application document, in the s42A Officers Report, and in some detail in the evidence of Mr McKenzie, Mr Hoffman, Ms Bennett and Mr Hughes. The key difference between Consent 201599 and APP-20181129 (the current application) is the proposed addition of the infiltration trench between the WWTP ponds and the existing river outfall, and the subsequent reduction in the volume and frequency of treated wastewater discharges to the Tokanui River.
- 14 Prior to lodgement, SDC engaged with Public Health South (PHS), Te Rūnanga o Awarua (the Rūnanga) via Te Ao Marama Inc. (TAMI), Fish and Game New Zealand (Fish & Game), and the Department of Conservation (DoC) as the identified stakeholders. A copy of the application was provided to these parties shortly after it was lodged with Environment Southland.

Submissions and amendments to the application

- 15 The application was publically notified on 20 March 2018 and submissions were received from TAMI and DoC in opposition and from PHS in support, with all submitters wishing to be heard. In summary, the key points raised focused on:
 - (a) Whether the application was consistent with the regional policy framework and the direction of the National Policy Statement for Freshwater Management 2014 (**NPS-FM**);
 - (b) The consideration of alternative discharge options;
 - (c) The effects on the quality of the receiving environment, particularly water quality of the Tokanui River;
 - (d) The effect of the discharges on the cultural and spiritual values of Te Rūnanga o Awarua.
 - (e) Ensuring that the proposed infiltration trench is as long as possible, that monitoring of the effects is undertaken, that cleared vegetation is replanted, and additional planting is undertaken along the trench and riparian margins, and that the term sought is reduced from 25 to 15 years.

- 16 Following discussions with the parties and amendments to the application to accommodate subsequent agreements that stemmed from those discussions, all three submitters withdrew their requests to be heard. The submissions remain relevant and I address the matters raised in them throughout my evidence.
- 17 A key outcome of the engagement process is that both the Rūnanga (via TAMI) and DoC have withdrawn their requests to be heard but retain their submissions. This is in recognition of the applicant agreeing to amend the application to incorporate the recommendations included in the Cultural Impact Assessment commissioned from the Rūnanga. The recommendations were to reduce the term sought (amended to 15 years in discussion with the Rūnanga), and proposing several additional conditions requiring monitoring results to be reported, a regular technological review to be undertaken, indigenous species to be planted along the infiltration trench and true right bank of the Tokanui River, and an accidental discovery condition to be included.
- 18 The agreed proposed conditions are set out in **Attachment A** of my evidence. The measures stemming from these conditions are adopted by the Applicant and form part of its application.

Assessment of the Planning Framework

- 19 I consider that the relevant planning instruments for this application are the National Policy Statement for Freshwater Management 2014 as amended in 2017 (NPS-FM), the Southland Regional Policy Statement (**RPS**), the Regional Effluent Land Application Plan (RELAP), the Regional Water Plan for Southland (**RWP**), and the proposed Southland Water and Land Plan (**pSWLP**). Te Tangi a Tauria, the Iwi Management Plan for Muruhiku endorsed by the collective Southland rūnanga in 2008 is a relevant matter under s104(1)(c).
- 20 I generally agree with Mr West's assessment of the applicable rules in part 2.2 of the Officer's Report. As noted by Mr West, the activity is a discretionary activity under the RELAP and RWP, and a non-complying activity under the pSWLP due to the proximity of the infiltration trench to the Tokanui River. I agree with Mr West's assessment of the regional plan rules, and his conclusion that the bundled application is for a non-complying activity. I also agree that the application is to be considered under the RELAP and RWP as the operative plans, and the appeals version of the pSWLP given the advanced stage of that plan.
- 21 As a non-complying activity, s104D of the RMA applies. The Hearing Panel must therefore be satisfied that the activity will either result in adverse environmental effects that are no more than minor to pass the 'effects gateway test' of s104D(1)(a), or that the activity is not contrary to the objectives and policies of the relevant regional plans and passes the 'policy gateway test' of s104D(1)(b).

22 In my view, the information set out in the application and in the evidence of Mr Hoffman, Mr Hughes and Ms Bennett demonstrates that the activity passes the effects gateway test, finding that the effects will be no more than minor. I note that Mr West on pages 12 and 13 of the Officer's Report also acknowledges that past monitoring and investigations in respect of the current discharge shows that the discharge to the Tokanui River *'does not indicate an adverse effect on water quality'*, and that biological surveys of the river confirm that *'the discharge was not affecting the biological communities of the Tokanui River'*. The assessment of the activity in the context of the regional policy framework in Appendix R of the application and following in my evidence shows that the activity also passes the policy gateway test. If the Hearing Panel agrees, the application must, subject to Part 2, be considered in the context of s104(1) and 104(2A) and determined in accordance with s104B RMA.

23 In my view, the key matters for the Hearing Panel to consider are:

- (a) Whether the application can be considered under s104B of the RMA, or whether s104D prevents the application from being granted;
- (b) The effects of the WWTP discharge on the receiving environment in the context of the regional policy framework's thrust to maintain or improve water quality;
- (c) Whether the discharges via the base of the WWTP ponds are consistent with industry best practice, and represent good management practice;
- (d) Whether it is appropriate to compare the purpose and function of the WWTP ponds to Farm Effluent Ponds (**FEP's**) in the context of the regional policy framework, and whether there would be an adverse effect on regional plan integrity in granting the application.

24 In the following section of my evidence, I focus on what I consider to be the key provisions, and I also address the matters raised by Mr West where I hold a different view. I draw to the Panel's attention the more complete assessment of the policy framework included in Appendix R of the application document. I note within that assessment any provisions that I consider may be consistent, inconsistent or contrary to the proposal. In my view the few provisions identified as contrary are not fatal to the application, and are substantially outweighed by the majority of the provisions with which the proposal is consistent.

National Policy Statement for Freshwater Management 2014 (amended 2017)

25 I generally agree with Mr West's identification in the Officer's Report of the relevant provisions of the NPS-FM.

Objective AA1

26 Objective AA1 is relevant in respect of considering and recognising Te Mana o te Wai as a matter of national significance. The discharge of treated wastewater to

land via the pond bases and the proposed infiltration trench will help to reduce the volume and frequency of direct discharges to the Tokanui River. While the existing discharges have been shown to have minimal adverse effect on biophysical values, the applicant recognises the importance of also minimising effects on tangata whenua values, and reducing direct discharges will better provide for Te Mana o te Wai, and tangata whenua values in general. In my view the proposal will help to achieve Objective AA1.

Objective A2

- 27 Mr West (page 15 of the Officer's Report) notes that the discharge will reduce water quality in groundwater and the river 'to a minor degree', and so he finds the discharge to be contrary to Objective A2. I disagree.
- 28 Objective A2 seeks to maintain or improve water quality across the whole of an FMU. The objective seeks to achieve this while protecting the significant values of outstanding freshwater bodies, and of wetlands (the Tokanui River is neither), and by improving water quality that has been degraded by human activities to the point of being over allocated.
- 29 Firstly, the limit setting process in Southland is due to be completed by the end of 2025, so it has not yet been determined whether the Tokanui River is over allocated, and to assume so at this stage would be to pre-empt the limit-setting process. Secondly, Objective A2 takes an FMU-wide perspective, and in doing so provides scope for localised water quality effects as long as water quality across the FMU as a whole is maintained or improved. As noted in the evidence of Ms Bennett¹, the effects of the discharge on the quality of the Tokanui River will not result in a discernible effect on water quality across the FMU. Similarly, Mr Hughes² has shown that the effects of the discharge from the ponds and trench will result in a very minor and localised effect on water quality. Given the scale and significance of the effects, water quality across the whole FMU will not be discernibly affected. On that basis, I consider that the proposal will enable the collection and effective treatment of the community's wastewater and will therefore help to achieve Objective A2.

Objective A4 and Policy A7

- 30 Mr West notes (page 15 of the Officer's Report) that Objective A4 and Policy A7 are generally supportive of the application. While the provisions are intended to apply once limits are set, I consider that enabling communities to provide for their economic wellbeing is central to this application. As Mr McKenzie³ notes, the

¹ Statement of evidence, Ms Bennett, Paragraph 31

² Statement of evidence, Mr Hughes, Paragraph 35

³ Statement of evidence, Mr McKenzie, Paragraph 5

community has invested in a wastewater network and treatment system for Tokanui of approximately \$1.1 million value. The positive effects of centralising wastewater treatment and disposal and minimising public health and environmental risks on community and environmental wellbeing is significant. The provision and operation of such infrastructure is essential to enable communities to provide for their health and safety. Such infrastructure is also necessary to support economic and social wellbeing by enabling appropriate land use and development that underpins the viability of the community and the development capacity⁴ of the region. The scale and nature of the effects of the Tokanui WWTP discharges on water quality to date are minimal, and show that the proposed activity will not undermine present or future economic opportunities that stem from the use or development of groundwater or the Tokanui River.

- 31 Authorising the activity as applied for will enable the applicant to continue to lawfully operate the WWTP, effectively treat wastewater in a cost-efficient way, at least maintain if not marginally improve water quality in the Tokanui River⁵, and realise a return on the community's substantial investment. In my view, allowing the proposal in the absence of significant adverse effects on soil or water quality represents the sustainable management of freshwater, will help achieve Objective A4, and is consistent with Policy A7.

Policy A4

- 32 Policy A4 directs that when considering an application for a discharge permit, decision makers must have regard to the extent to which a discharge will avoid contamination that will adversely affect the life-supporting capacity of freshwater including associated eco-systems ((1)(a)), and the health of people and communities who contact freshwater ((2)(a)). The policy also requires decision makers to have regard to the extent to which it is *'feasible and dependable'* that adverse effects on freshwater and ecosystems ((1)(b)) and the health of people and communities ((2)(b)) that are more than minor are avoided.
- 33 Mr West concludes on page 24 of the Officer's Report that the discharge by itself will be consistent with the policy, and particularly A4(1)(a) and (b) given the indiscernible effect of the current discharge on aquatic species. This effect will be further reduced as a result of the proposed activity. Mr West then concludes that when considered cumulatively, the discharge will not avoid adverse effects on human health that are more than minor, however he then notes on page 25 that

⁴ Supporting development capacity in relation to housing and business land is a function of regional councils under s30(1)(ba) RMA, and adequate development infrastructure (s30(5)) is a key part of achieving that function.

⁵ To the extent that it is affected by the existing direct discharge.

'The most conservative calculations indicate very minor increases in contaminant concentrations in the river after reasonable mixing.'

- 34 The conservative nature of the proposal and the evidence provided by Mr Hughes⁶ and Ms Bennett⁷, shows that the reduction in the volume and frequency of the river discharge as a result of the infiltration trench is expected to further reduce the currently minimal extent of adverse effects on the life-supporting capacity of the river, and the potential to affect human health through contact with water. Direct discharges to the river from the trench will typically occur when flows are elevated, when rapid dilution and dispersal are maximised, and when recreational use in the vicinity of the discharge (if that is feasible given the surrounding private land and limited accessibility) is less likely.
- 35 The preceding evidence shows that more than minor adverse effects on water quality and the associated ecosystems of the Tokanui River, and on human health from contact with water, resulting from the proposed discharges will be 'feasibly and dependably' avoided. I therefore consider that the activity will be consistent with Policy A4.

Southland Regional Policy Statement

- 36 I agree with Mr West that the RPS provisions he identifies in section 3.8 of the Officer's Report are relevant to this application. I consider that the Tokanui WWTP falls within the RPS definition of 'critical infrastructure'⁸, and as such the RPS Infrastructure provisions are central to considering this application in the context of the RPS framework.

Infrastructure Provisions

- 37 Objective INF.1 and Policies INF.1 to INF.4 provide for the operation, development, and maintenance of critical and regionally significant infrastructure, such infrastructure being fundamental to the health, safety and wellbeing of the community and to maintaining or enhancing the quality of the environment. This is recognised in the objective which anticipates that infrastructure will be "*appropriately integrated with land use activities and the environment.*" [my emphasis].
- 38 The explanation to the objective acknowledges the significant contribution such infrastructure makes to community wellbeing, and notes that it is '*desirable to*

⁶ Statement of evidence, Mr Hughes, Paragraph 58

⁷ Statement of evidence, Ms Bennett, Paragraph 41

⁸ **Critical infrastructure:** *Infrastructure that provides services which, if interrupted, would have a significant effect on the wellbeing and health and safety of people and communities and would require reinstatement, and includes all strategic facilities.*

control' the associated environmental effects of infrastructure, which should be avoided, remedied or mitigated, offset, or compensated for. The explanation also indicates that weight should be given to the requirements of critical infrastructure given the substantial public benefits associated with it. Objective INF.1 affords critical infrastructure like the Tokanui WWTP a high degree of importance.

- 39 Policy INF.1 directs decision makers to *"make provision for the development, maintenance, upgrade and ongoing operation"* of critical infrastructure. The policy explanation notes that infrastructure is fundamental to social, economic, cultural and environmental wellbeing. Policy INF.2 directs that the adverse effects of infrastructure are to be avoided, remedied or mitigated '*where practicable*'. The policy provides guidance as to what decision makers are to consider when determining what is practicable, recognising that there are *"functional, operational or technical constraints"* that apply to some types of infrastructure. The policy acknowledges the responsibility of infrastructure owners to minimise the environmental effects of infrastructure, while also recognising that there are practical limitations to the extent to which that may be achievable in some cases.
- 40 In my opinion, the RPS provides clear policy support for community infrastructure where such infrastructure does not result in unacceptable adverse effects on people or the environment. Mr Hoffman⁹ describes the function of the existing WWTP ponds, noting it is operating within industry standards, and in accordance with good management practice. Mr Hughes and Ms Bennett both note the minimal adverse effects of the current discharges to land and water, and the anticipated reduction of those effects under the current proposal. On that basis I am of the view that the proposal is strongly supported by the RPS infrastructure provisions.

Water Quality Provisions

- 41 Objective WQUAL.1 seeks to safeguard the life-supporting capacity of water, the health of people and communities, and to meet the foreseeable social, economic and cultural needs of future generations. WQUAL.1 clearly anticipates the use and development of water resources, and consequently the associated effects provided that the values specified in (a) and (b) of the Objective are safeguarded. Objective WQUAL.1 aims to achieve water quality in accordance with freshwater objectives formulated under the NPS-FM, which anticipate that overall, water quality within an FMU will be maintained or enhanced. Objective WQUAL.2 seeks to halt the decline of, and improve water quality in, lowland and coastal freshwater bodies over the FMU as a whole, in accordance with freshwater objectives formulated under the NPS-FM.

⁹ Statement of evidence: Mr Hoffman, from paragraph 9; Paragraph 40

- 42 I agree with Mr West¹⁰ that these provisions do not apply at the granular level of individual discharges, but are relevant when considering water quality at an FMU scale. Ms Bennett and Mr Hughes¹¹ discuss in their evidence the minimal effect on water quality resulting from the existing discharge, and note the expectation that the infiltration trench will help to reduce the frequency and volume of direct discharges further.
- 43 Monitoring shows that the current discharge has minimal effect on water quality in the Tokanui River¹². The proposed activity will further reduce the significance of any receiving water effects in accordance with the 'maintain or improve' directive of Policy WQUAL.2, by decreasing (and in some conditions removing entirely) discharges to the Tokanui River, and otherwise ensuring that discharges occur when Tokanui River flows are elevated. On that basis I consider the proposal to be consistent with Policy WQUAL.2.

- 44 I consider Policy WQUAL.8 to be a key provision. The policy states:

Policy WQUAL.8 – Preference for discharge to land

Prefer discharges of contaminants to land over discharges of contaminants to water, where:

- (a) a discharge to land is practicable;*
- (b) the adverse effects associated with a discharge to land are less than a discharge to water.*

- 45 Under this proposal, treated wastewater will be discharged to land via the base of the ponds and via the infiltration trench. Treated wastewater will only discharge to groundwater when seasonal groundwater levels rise towards the trench invert in winter, and to the river when weather conditions prevent adequate evaporation or infiltration from the trench.
- 46 Mr McKenzie notes in his evidence¹³ that the applicant investigated the viability of 100% discharge to land, finding that due to physiographic and climatic conditions, a fully land-based discharge was not practicable. Mr Hughes in his evidence finds that the effects of the existing discharges to land via the ponds are minimal and does not expect adverse effects that are more than minor as a result of the proposed infiltration trench. Consequently, I consider that the land-based discharge aspects of this proposal are consistent with Policy WQUAL.8.

¹⁰ Page 19 of the Officer's Report

¹¹ Statement of evidence: Ms Bennett, Paragraph 41; Mr Hughes, Paragraph 57

¹² Statement of evidence: Ms Bennett, Paragraph 35

¹³ Statement of evidence: Mr McKenzie, Paragraph 23

47 Policy WQUAL.9 directs that discharges of untreated wastewater to water (ground or surface water) are to be avoided. Mr West¹⁴ incorrectly notes that the discharge through the pond bases will be partially treated, and akin to primary treated wastewater, a position he repeats throughout the Officer's Report. Mr Hoffman clearly explains that only treated wastewater will be discharged, and that wastewater discharged from the base of the ponds will be of similar or better quality to that discharged to the infiltration trench. This is supported by the findings of Mr Hughes assessment of monitoring data, which demonstrates the minimal effect on groundwater and connected surface quality. Taking their evidence into consideration, I consider the activity to be consistent with Policy WQUAL.9.

Southland Regional Water Plan

48 Mr West has provided an assessment of the relevant objectives and policies of the RWP from page 20 of the Officer's Report. I consider that he has correctly identified the key RWP objectives relevant to this application. I consider the key provisions below.

Objective 2

49 Objective 2 seeks to ensure that surface water quality is not reduced beyond the zone of reasonable mixing below the water quality that existed in January 2010. The current discharge permit was issued in September 2003, so the effect on water quality in the Tokanui River would have been taken into account when determining the water quality in January 2010.

50 Allowing the discharge will not result in a reduction in water quality beyond that which existed in January 2010, taking into account the existence of the discharge in January 2010, the quality of the existing discharge and the minimal effects in the receiving environment, and the reduction of the volume and frequency of direct discharges to the Tokanui River under this proposal. In my opinion, the proposal will therefore contribute to achieving this objective.

Objective 3

51 I consider Objective 3 to be a key provision. The objective seeks the maintenance or measurable improvement of water quality in Southland's surface water bodies in respect of:

- (a) bathing, in those sites where bathing is popular;*
- (b) trout where present, otherwise native fish;*
- (c) stock drinking water;*
- (d) Ngāi Tahu cultural values, including mahinga kai;*
- (e) natural character including aesthetics.*

¹⁴ Page 19 of the Officer's Report

- 52 Objective 3 anticipates that improvements in water quality will take time, and that water quality goals “*will not be met overnight. The objective is therefore to make progress towards achieving them*”¹⁵. Objective 3 aims to prevent further decline in water quality where standards are currently met, and to achieve measurable improvement over time where water quality is already degraded.
- 53 Mr West notes on page 25 of his evidence that “the most conservative calculations indicate very minor increases of contaminant concentrations in the river after reasonable mixing”. Introducing the infiltration trench and the consequential reduction in volume and frequency of direct discharges to the river will reduce the already minimal effect of the discharge on the Tokanui River further. That reduction will contribute to an overall improvement in water quality. At worst, the proposal will maintain the water quality of the Tokanui River in its current state as anticipated by the objective. Consequently, in my view the proposal will contribute to achieving Objective 3.

Objective 4

- 54 Objective 4 – *Gradual improvement in surface water parameters* also acknowledges that immediate water quality improvements may be neither practicable nor achievable, and anticipates that such improvements will be achieved over time. This objective focusses on improvements in respect to microbiological contaminants, nitrate, phosphorus, and clarity. The explanation to Objective 4 notes that: “*Attempting to achieve [water quality improvements] in a short timeframe would require significant constraints on both land use activities and direct discharge of contaminants to water*”.
- 55 The applicant has committed to the infiltration trench which will help to reduce direct discharges to the Tokanui River. Ms Bennett¹⁶ notes that by reducing the volume and frequency of discharges to the river, and by avoiding surface water discharges in during periods of low flow, there will be an improvement in the parameters specified in the objective, associated with the WWTP discharge. In my view, the proposal will therefore contribute to achieving Objective 4.

Policy 3

- 56 Policy 3 sets the expectation that receiving water quality will not be reduced beyond the zone of reasonable mixing unless to do so is consistent with the promotion of sustainable management as set out in Part 2 RMA. The policy acknowledges that there will be instances where the water quality standards may not be met beyond the zone of reasonable mixing, and that it may not necessarily

¹⁵ Explanation to Objective 3, page 5, RWP

¹⁶ Statement of evidence: Ms Bennett, Paragraph 41 and 19

be inappropriate in the circumstances. This policy recognises the role that infrastructure plays in sustainable management and helps to give effect to the infrastructure policies in the RPS.

- 57 In directing decision makers to Part 2 of the RMA, Policy 3 invites a broad assessment of the activity, encompassing the health, safety and wellbeing of the community, their social, cultural and economic wellbeing, and the matters identified in s5(2)(a) – (c). Mr McKenzie has addressed the potential economic costs associated with some of the options to upgrade the Tokanui WWTP. Given the effective and cost efficient performance of the existing WWTP, and the minimal adverse environmental effects, the economic cost to the community of undertaking significant changes to the WWTP may not be justifiable, and could result in an adverse economic effect on the community for little benefit. In my view, the proposal constitutes the sustainable use of ground and surface water.
- 58 The explanation to Policy 3 refers to s107(1) RMA which prevents the granting of resource consents authorising discharges to water (s107(1)(a)) if after reasonable mixing the discharge results in:
- (c) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials:*
 - (d) any conspicuous change in the colour or visual clarity:*
 - (e) any emission of objectionable odour:*
 - (f) the rendering of fresh water unsuitable for consumption by farm animals:*
 - (g) any significant adverse effects on aquatic life.*
- 59 On the basis of the evidence of Mr Hughes and Ms Bennett, I conclude that the current discharge does not result in the effects identified in s107(1), and the introduction of the infiltration trench will further reduce the potential for those effects. On that basis I consider the activity to be consistent with Policy 3.

Policy 4

- 60 Policy 4 directs that discharges to surface water are to be managed so water quality meets or exceeds the RWP standards after reasonable mixing, unless it is consistent with the promotion of the sustainable management as set out in Part 2 RMA, to do otherwise.
- 61 Monitoring shows that the effect of the current discharge beyond the mixing zone is minimal and limited in scale and significance. With the implementation of the infiltration trench, the volume and frequency of discharge to the river will be reduced.

62 As noted in the application and in the evidence of Mr Hughes and Ms Bennett¹⁷, the adverse effect of the discharges on the Tokanui River are minimal, with little potential effect on human health, stock water quality or aquatic life as a result. This is further confirmed by the conclusions of the Ryder Consulting Limited report, that the discharge is essentially having no effect on aquatic plants or macroinvertebrates, also acknowledged by Mr West on page 25 of the Officer's Report. Reducing the volume and frequency of discharges to the river as proposed will contribute to improving water quality in the river to the extent that it is affected by the discharge. In my view, the proposal is consistent with Policy 4, as it constitutes the sustainable use of water as envisaged by Part 2 of the RMA.

Policy 7

63 Policy 7 states:

“Prefer discharges to land over discharges to water where this is practicable and the effects are less adverse.”

64 The policy clearly promotes discharges to land, also acknowledging that such discharges will not always be practicable. The preference to discharge to land has been a key consideration of the applicant, and is reflected in the options considered and the proposed construction of the infiltration trench. As noted in Section 8.1.3 of the application, and in Mr McKenzie's evidence¹⁸, the applicant investigated the potential for land-based discharges, finding that due to a number of reasons including the characteristics of the land and the climate, full land-based disposal was not practicable. The infiltration trench will go some way toward satisfying this policy, as does the discharge to land via the base of the ponds. Overall, I consider that the proposal is consistent with this policy given the practical limitations on land disposal options at this location.

Policy 8

65 Policy 8 directs that point source discharges to water should be limited to when receiving water bodies are in a high flow state. The explanation notes that the assimilative capacity of a waterbody is greatly improved when in high flow. With the provision of the infiltration trench, the applicant anticipates that for much of the year there will be no direct discharges to the river, with direct discharges anticipated only when groundwater levels are high, such as during winter and following rainfall events. I understand that the river is likely to be in a high flow state at such times, and consequently will have a higher assimilative capacity, further minimising the effects of the discharge. Consequently, I consider that the activity is consistent with this policy.

¹⁷ Statement of evidence: Mr Hughes, Paragraph 57; Ms Bennett, Paragraph 47

¹⁸ Statement of evidence: Mr McKenzie, Paragraph 25

Policy 25

66 Policy 25 addresses the effects of discharges on groundwater quality after mixing, requiring that adverse effects on water quality are avoided, remedied or mitigated such that there is no decline in water quality. As discussed by Mr Hughes¹⁹, the effects of the discharge to land both through the base of the ponds and the infiltration trench will be minimal, based on the highly conservative modelling results in the application, and groundwater monitoring subsequently undertaken. The WWTP ponds are effective in treating the wastewater, which is then filtered as it passes through the pond bases, is treated further in the unsaturated zone, and then diluted and dispersed in groundwater. The effects of the wastewater discharge on groundwater quality will therefore be minimal. Taking Mr Hughes opinion into account, I consider the activity to be consistent with Policy 25 insofar as discernible deterioration of groundwater after reasonable mixing will be avoided.

Regional Effluent Land Application Plan

67 The relevant provisions of the RELAP are set out in Appendix R of the application, and Mr West has identified them on pages 26 and 27 of the Officer's Report. The provisions identified in the application are generally reflected in the Officer's Report and address similar matters to those of the RWP and RPS previously addressed in my evidence. I generally agree with the matters raised in the Officer's Report in respect of the RELAP provisions.

Proposed Southland Land and Water Plan

68 I generally agree with the relevance of the pSWLP provisions Mr West identifies in the Officer's Report. In addition, I consider Objectives 9A, 14, 15 and 17 are relevant, although largely reflect matters previously addressed under the RWP section of my evidence, which I do not propose to revisit. Taking into account how advanced the pSWLP now is, I consider the key provisions of the appeals version below.

Objective 6

69 Objective 6 anticipates localised effects on surface water quality, provided that the quality of water across a FMU as a whole is maintained or improved. This objective closely aligns with, and gives effect to Objective A2 of the NPS-FM, and is therefore key to considering this application.

70 Ms Bennett concludes that the effects of the current discharge to the Tokanui River are less than minor within 150 m of the discharge. The effect of the proposed discharge is expected to be less than at present, taking into account

¹⁹ Statement of evidence: Mr Hughes, Paragraph 57 and 59

the reduction in the volume and frequency of surface water discharges, the quality of the discharge and the assimilative capacity of the river. On the basis that there will be no discernible effect on water quality over the FMU, I consider that the proposal will achieve Objective 6.

Objective 8

71 Taking into account the findings of Mr Hughes' assessment of groundwater data, I consider Objective 8(b) is relevant. Improving groundwater quality to meet the Drinking Water Standards for New Zealand 2005 (revised 2008) is beyond the ability of the application, given the significant influence of agricultural activities upgradient. Mr Hughes has described the groundwater environment in the vicinity of the WWTP, and the likelihood that the plume from seepage follows a reasonably direct path through groundwater to the river. Mr Hughes' view is that the seepage is unlikely to significantly influence groundwater quality in a broader area. The land between the WWTP and the river is owned by the applicant and is designated for wastewater management purposes. The potential for groundwater to be drawn within, or in proximity to that land for human consumption is remote.

Objective 9B and 13

72 Objective 9B was introduced in the decisions version of the pSWLP to implement the infrastructure provisions of the RPS by supporting the development, operation, maintenance and upgrading of Southland's regionally and nationally significant, and critical infrastructure. The WWTP falls within the definition of critical infrastructure, being the type of infrastructure which provides services *"which, if interrupted would have a significant effect on the wellbeing and health and safety of people and communities, and would require reinstatement"*²⁰. The proposal will achieve Objective 9B by enabling the existing WWTP as critical infrastructure to continue to operate and be upgraded.

73 Objective 13 enables the use of land and soil to support Southland's economic, social and cultural wellbeing. The land and soil beneath the WWTP ponds provides effective treatment of wastewater as part of the treatment process as described by Mr Hoffman and Mr Hughes. Similarly, the use of land and soil associated with the infiltration trench also provides an effective means of further treatment, as well as some land-based disposal. The community's social and cultural wellbeing, and their health and safety are safeguarded by effectively treating wastewater in a cost-effective manner. The proposal will achieve Objective 13 by enabling the use of land and soil beneath the WWTP ponds and infiltration trench to be used for effective wastewater treatment and disposal, supporting the economic, social and cultural wellbeing of the community.

²⁰ Definition of 'Critical Infrastructure', pSWLP Glossary, page 114.

- 74 The proposal achieves Objective 13B insofar as it will avoid discharging contaminants to land or to water that have significant adverse effects on human health. The potential for cumulative adverse effects on human health resulting from the discharge will be limited to the mixing zones.

Objective 18

- 75 Objective 18 is a key provision, and underlies what I consider to be a significant error in the Officer's Report. The objective states:

"All activities operate in accordance with "good management practice" or better to optimise efficient resource use, safeguard the life supporting capacity of the region's land and soils, and maintain or improve the quality and quantity of the region's water resources." [my emphasis]

- 76 Mr West's view on page 34 of the Officer's Report is that the Tokanui WWTP does not constitute 'good management practice' as the ponds 'leak' through the base. This understanding permeates through much of Mr West's assessment of the effects of the activity, and his consideration of the activity against the regional policy framework.
- 77 Mr Hoffman notes that leakage from the ponds is not excessive (in the context of accepted industry standards), consists of well treated wastewater of similar quality to that discharged to the infiltration trench, and is discharging at a rate that is similar to slow rate wastewater irrigation applied elsewhere in Southland. Mr Hoffman²¹ also concludes that the ponds are operating very well, and are consistent with good management practice as set out in the relevant guidelines for such Waste Stabilisation Ponds (**WSPs**) in New Zealand. Mr Hughes and Ms Bennett both note in their evidence that the effect of the existing discharges from the base of the ponds and to the river are minimal and do not result in more than minor adverse effects on the life supporting capacity of the receiving environment. This is not expected to deteriorate with the addition of discharges to land from the infiltration trench.
- 78 On the basis of these expert conclusions, I consider that the activity will clearly achieve Objective 18. It is consistent with good management practice. It will safeguard the life-supporting capacity of soils, and will at least maintain existing ground and surface water quality. I do not consider that the activity will be contrary to achieving Objective 18 as suggested by Mr West (page 34 of the Officer's Report).

²¹ Statement of evidence: Mr Hoffman, Paragraphs 39 and 40

Policy 14

- 79 Policy 14 promotes the discharge of contaminants to land in preference to water, unless the effects of discharging to land are greater. Mr Hughes has considered the existing discharges to land in some detail in his evidence and has concluded that the effects on ground water quality are unlikely to be more than minor.
- 80 Policy 14 also requires decision makers to have particular regard to effects of discharges to water on cultural values. In pre-application discussions, and subsequently their submission, the Rūnanga expressed concerns in respect of the effects on cultural values, the discharge of human sewage to water, and the term of the application. The submission repeated recommendations made in the Cultural Impact Assessment report commissioned from the Rūnanga. In response to the submission and subsequent discussions, the applicant adopted all of the recommendations, and reduced the term sought from 25 to 15 years. Subsequently, the Rūnanga withdrew their request to be heard. I agree with Mr West on page 11 of the Officer's Report that this may indicate that the changes made in response to the Rūnanga's concerns mitigate the cultural effects to the satisfaction of the Rūnanga, acknowledging that a degree of offense will remain.
- 81 One of the key changes will be the likely absence of discharges to the Tokanui River over the summer months, reducing the frequency of the effect on cultural values associated with discharges to water. Furthermore, the shorter term and the agreement to provide monitoring results to the Rūnanga will also assist with Kaitiakitanga, improving the opportunity to be involved in future decisions affecting the cultural values of the river.

Policy 17A and Objective 18

- 82 Policy 17A directly applies to community sewage schemes. Particularly relevant to this application is Policy 17A(1) which states:

Minimise adverse effects on water quality, and avoid, remedy, or mitigate other adverse effects of the operation of, and discharges from, community sewerage schemes by:

- (a) *designing, operating and maintaining community sewerage schemes in accordance with recognised industry standards; and*

...²²

- 83 The policy directs that community sewage schemes are to adhere to 'recognised industry standards' in order to *minimise* adverse effects on water quality, and to avoid, or otherwise remedy or mitigate other adverse effects stemming from

²² Note that clauses (b) and (c) have not been included as they relate to overflows which are not relevant to this application.

WWTP operations and discharges. In my view, this policy indicates that adverse effects on water quality as a result of WWTP discharges (such as via a pond base as well as discharges to land and water) are anticipated, but that by adhering to 'recognised industry standards' they will be appropriately minimised. The policy does not direct that they be avoided completely.

- 84 Mr Hoffman identifies the relevant industry standards in his evidence and concludes that the WWTP ponds are consistent with the applicable industry standards. Mr Hoffman also concludes that the ponds are operating in a manner consistent with 'Good Management Practice'²³.
- 85 Mr Hughes discusses the groundwater monitoring results which demonstrate the effects of the discharges on both the ground and surface water receiving environments. On the basis of the monitoring data, his view is that the effects of the discharges through the pond bases and infiltration trench on groundwater will be minor²⁴. Taking into account the evidence of Mr Hoffman and Mr Hughes, I consider the proposal to be consistent with Policy 17A as a key policy specific to community wastewater schemes. It follows therefore that the activity is also consistent with 'good management practice' as set out in Objective 18. Furthermore, the evidence demonstrates that the activity will not undermine the life-supporting capacity of the land and soil resources used for the activity, and while the effects on groundwater quality have been shown to be minor, will likely help to improve the quality of the Tokanui River by reducing the scale and frequency of direct discharges.
- 86 Mr West indicates on page 34 of the Officer's Report that in his view, the ponds are leaking partly treated wastewater, and that at 10 cubic metres per day the discharge through the pond bases is contrary to 'good management practice', and therefore contrary to Objective 18. This is at odds with the expert opinion of Mr Hoffman. Taking account of Mr Hoffman's evidence, I am of the view that the activity will help to achieve Objective 18, and is certainly not contrary to it.

Plan Integrity

- 87 Mr West draws a comparison on pages 34 and 35 (and several other pages) of the Officer's Report, between the seepage of treated wastewater from the WWTP ponds, and leakage from FEPs. The inference in the Officer's Report is that the two are comparable, and that approving the seepage discharge from the WWTP ponds would therefore be contrary to the regional policy framework and

²³ Statement of Evidence: Mr Hoffman, Paragraph 40

²⁴ Statement of Evidence: Mr Hughes, Paragraph 61

undermine the integrity of the RWP and the pSWLP. Given the evidence presented by Mr Hoffman and Mr Hughes I strongly disagree.

- 88 Mr Hoffman²⁵ has explained the distinct differences between the purpose and functions of WSPs and FEPs, noting that WSPs are specifically designed to *treat* domestic wastewater effectively, whereas FEPs are simply *storage* ponds with no treatment function. Mr Hoffman also notes the significant differences between the strength and characteristics of domestic wastewater and farm effluent. Further, Mr Hoffman has confirmed that the seepage rate from the pond bases is within the anticipated range for WSPs constructed to industry standards²⁶. He also notes that seepage would be of similar or potentially better quality than the wastewater discharged to the infiltration trench, having been treated within the ponds before passing through the sludge layer, the clay-like material used to form the ponds, and the unsaturated soil beneath. Mr Hughes has confirmed the minimal effect of pond seepage on both ground and surface water quality as indicated by his assessment of sampling data.
- 89 The regional plan framework considers the management of agricultural effluent and community wastewater separately. Under the RWP, Policy 41 provides specific direction regarding the adverse effects of agricultural effluent ponds. There is no specific policy for community sewage schemes under the RWP. I note that the RELAP sets out rules for community sewage schemes in Chapter 5.2, and separate rules for Agricultural Effluent in Chapter 5.4. In the pSWLP, Policy 17 specifically addresses agricultural effluent management, whereas Policy 17A is specific to community sewerage schemes. As noted above, I consider that this activity will be consistent with Policy 17A.
- 90 Mr West notes on Page 34 of the Officer's Report that Policy 17 directs that "storage facilities must be sealed so they do not leak or allow contaminants to seep out. All areas where effluent or leachate is stored should be sealed to prevent leachate losses to groundwater". Having considered in Mr Hoffman's evidence the absence of treatment processes in FEPs and the characteristics of farm effluent, it appears to me that Policy 17 appropriately reflects the potentially significant environmental effects that could result from FEPs leaking.
- 91 This application is clearly limited to replacing a discharge permit for an established, well-functioning and operated community WWTP. There is no direct or indirect association in my view with the rules or policy framework that applies to FEPs, and Policy 17 in my view has no relevance to this application. Having considered how the operative and proposed plans separate the management of

²⁵ Statement of evidence: Mr Hoffman, from Paragraph 30.

²⁶ Statement of evidence: Mr Hoffman, from Paragraph 39.

community wastewater from farm effluent at the policy and rule level, and noting the significant differences between the purpose and function of WSPs and FEPs as set out by Mr Hoffman, I do not agree that there will be any policy conflict as stated in the Officer's Report.

Policy 26A

92 Policy 26A is a new provision introduced in the pSWLP decisions version to address the previous policy gap in relation to critical infrastructure that existed, and to enable the pSWLP to give effect to the strong infrastructure policy framework in the RPS. I agree with Mr West's view on page 36 of the Officer's Report that the WWTP and the addition of the infiltration trench fit within the definition of critical infrastructure in the pSWLP (which echoes the definition in the RPS). Taking into account the evidence of Mr Hughes in particular, I do not agree with Mr West that the seepage from the ponds would be at odds with the direction in the policy to avoid where practicable or otherwise remedy or mitigate the adverse effects of critical infrastructure. For the reasons set out in my evidence relating to Policy 17A and Objective 18, I consider that the proposal is consistent with, and supported by Policy 26A.

Policy 40 - Consent Term

93 The applicant initially applied for a term of 25 years, noting the importance of the WWTP, the community's investment in it to date, and the limited environmental effects. Following discussions with the Rūnanga, the applicant voluntarily reduced the term sought to 15 years, a move supported by the Rūnanga and by DoC. On pages 36 and 37 of the Officer's Report, Mr West considers Policy 40 of the pSWLP, and concludes that a 15 year term would be too long. He instead suggests a term of six years, to align with Environment Southland's Progressive Implementation Plan for the NPS-FM limit setting process. Mr West's opinion that the proposal is contrary to Objectives 8 and 18 appears to underpin his conclusion.

94 Taking into account the evidence of Mr McKenzie, Mr Hoffman, Mr Hughes and Ms Bennett, I provide the following assessment of Policy 40:

Policy 40 –

When determining the term of a resource consent consideration will be given, but not limited, to:

1. granting a shorter duration than that sought by the applicant when there is uncertainty regarding the nature, scale, duration and frequency of adverse effects from the activity or the capacity of the resource;

Assessment:

The nature, scale, duration and frequency of the effects of the proposal are

relatively certain as set out in the evidence of Mr Hughes and Ms Bennett. The potential for improvement over the current effects, minor as they are, is also reasonably certain. The body of monitoring data and associated certainty of the effects of the discharges will increase following the installation of a series of monitoring bores up and down-gradient of the WWTP in March 2019. There is no justification in my view for reducing the term based on uncertainty of the effects.

2. relevant tangata whenua values and Ngāi Tahu indicators of health;

Assessment:

The applicant has worked closely with the Rūnanga to accommodate concerns and respond to the matters raised in the CIA. The adverse effects of the discharges on tangata whenua values will be reduced as a result of the reduction in the scale and frequency of surface water discharges. Further, the inclusion of the Rūnanga in reporting monitoring results and the technology review (see assessment on clause 6 below) will help to ensure that tangata whenua values remain a key part of the applicant's ongoing management of the Tokanui WWTP.

3. the duration sought by the applicant and reasons for the duration sought;

4. the permanence and economic life of any capital investment;

Assessment:

Section 104(2A) of the RMA directs that decision makers 'must have regard to the value of the investment of the existing consent holder' when considering an application under s124 of the RMA. Mr McKenzie has set out the applicant's reasons why a 15 year term is sought, including the need to provide a reasonable return on the community's investment in the WWTP to date given its substantial value (estimated at approximately \$1.5 million), on the costs of replacing the expiring consent, and the economic life of the WWTP as critical infrastructure.

5. the desirability of applying a common expiry date for water permits that allocate water from the same resource or land use and discharges that may affect the quality of the same resource;

Assessment:

I agree with Mr West's assessment that there are no other water permits or resource consents that are appropriately aligned to influence the term of the consent sought.

6. the applicant's compliance with the conditions of any previous resource consent, and the applicant's adoption, particularly voluntarily, of good management practices; and

Assessment:

Mr West has confirmed that there are no compliance matters that would justify a

reduced term. The existing WSP is operating well, and the monitoring data considered by Mr Hughes in his evidence demonstrates that the effects on the receiving environment are minimal.

Rather than wait until the consent term is nearing expiry, the applicant has volunteered a consent condition in response to discussions with the Rūnanga and DoC which will require regular reviews and reporting to Environment Southland, the Rūnanga and DoC of technological improvements that could be applicable to the Tokanui WWTP, particularly where they may represent the best practicable option (BPO).

7. the timing of development of FMU sections of this Plan, and whether granting a shorter or longer duration will better enable implementation of the revised frameworks established in those sections.

Assessment:

Setting a shorter term for the consent to better enable the implementation of the NPS-FM framework does not take into account that the consent authority has other tools available to it to review²⁷ and amend the conditions of a consent should it be necessary. The limit setting process has not been completed, and the extent to which this discharge contributes to overallocation (if any) is unknown. It is therefore inequitable in my view to impose significant costs on the community to prepare for and seek a replacement consent in only six years' time, when the evidence base and policy drivers to do so have not yet been established. It is not, in my view a valid reason on its own to impose a shorter term, particularly given the absence of other reasons under Policy 40, and the less than minor effects on the quality of the river as the ultimate receiving environment.

- 95 Noting that the WWTP is established, long term critical infrastructure that is integral to the wellbeing of the community, there is little risk to the consent authority in my view from granting a 15 year term. This is particularly so given the minimal adverse effects on the receiving environment, the increased monitoring proposed, and the acceptance of the term by the submitters as key stakeholders.

²⁷ Section 128(1)(b) of the RMA provides Consent Authorities with the ability to review the conditions of a resource consent as of right (i.e. the review triggers necessary under s128(1)(a) do not apply):

(1) A consent authority may, in accordance with section 129, serve notice on a consent holder of its intention to review the conditions of a resource consent—

(a) ...[N/A]

(b) in the case of a coastal, water, or discharge permit, when a regional plan has been made operative which sets rules relating to maximum or minimum levels or flows or rates of use of water, or minimum standards of water quality or air quality, or ranges of temperature or pressure of geothermal water, and in the regional council's opinion it is appropriate to review the conditions of the permit in order to enable the levels, flows, rates, or standards set by the rule to be met; or...

Te Tangi a Tauira

- 96 I have completed an assessment of the activity in the context of *Te Tangi a Tauira*, the endorsed iwi management plan for Murihiku, provided in Appendix R of the application document.
- 97 The relevant provisions are primarily focussed on enabling tangata whenua to play a role in managing freshwater, in accordance with the principle of ki uta ki tai, from the mountains to the sea. The provisions generally seek recognition of the cultural and spiritual value of freshwater resources. Several of the policies also seek improved mechanisms for cultural values and perspectives to be taken into account in decision making processes. Various policies recognise that there may be practical limitations to achieving some of the more aspirational goals, but that taking such limitations into account, improvements in water quality must still be made.
- 98 While there are practicable, technical and operational limitations to full consistency with Policies 3.5.2.6 and 3.5.13.5 which prefer discharges to land, the proposal is generally consistent with the document's policy framework. The exception is Policy 3.5.11.15 which I find the activity to be contrary to. The Policy reads:
- Avoid the use of rivers as a receiving environment for the discharge of contaminants (e.g. industrial, residential, recreational or agricultural sources).
- 99 The policy is somewhat aspirational and very difficult to comply with, including in respect of direct and indirect discharges from most land use activities. Despite the contrary position of the policy, I do not consider it fatal to the application in balance with the broader policy framework.
- 100 Policy 3.5.2.8 is particularly relevant. The policy relates to direct discharges of wastewater to water. The policy directs that such discharges need to be assessed by the kaitiaki rūnanga, and that the appropriateness of a discharge will be determined on a case by case basis. The applicant engaged with the Rūnanga early in preparing the application document, and on an ongoing basis following lodgement, and responded to the matters raised in that process.

Conclusion

- 101 Having considered the evidence presented by other witnesses, the matters raised by submitters, the Officer's Report, and the provisions of the relevant planning instruments I do not consider that there any matters preventing the granting of the application. In particular, the proposal is generally consistent with the applicable policy framework, such that it passes both the policy and effects gateways of s104D.

- 102 The existing ponds have been shown to be consistent both with industry standards and good management practice. The comparison of the ponds with FEPs is erroneous, in terms of their function and purpose, the environmental effects associated with them, and in respect of how the planning framework responds to them. The existing effects of the discharges to land via the ponds on groundwater and surface water, and of the surface water discharge have been shown to be minimal. The effects on the quality of the Tokanui River are expected to reduce further with the provision of the infiltration trench. There is no conflict within the planning framework in my view that would result in an adverse effect on plan integrity.
- 103 In my opinion, granting the application, subject to the proposed conditions included in Attachment A to my evidence, is consistent with the promotion of the sustainable management of natural and physical resources envisaged by the RMA.



Janan Dunning

1 May 2019

Attachment A

Proposed Consent Conditions – APP-20181129

1. This consent authorises the discharge of treated wastewater from the Tokanui Wastewater Treatment Plant:
 - (a) To land; and
 - (b) To land and water from the base of the oxidation ponds and the infiltration trench; and
 - (c) To the Tokanui River;

in general accordance with the application “*Tokanui Wastewater Treatment Plant Discharge to Land and Water*” dated February 2018.
2. The discharge of treated wastewater from the Tokanui wastewater treatment plant to land and to water shall not exceed an annual average of 55 m³/day. The consent holder shall record the daily volume of wastewater received at the wastewater treatment plant to determine compliance with this condition.
3. (a) The consent holder shall maintain monitoring bores installed for monitoring the effect of discharges from the Tokanui wastewater treatment plant to land and groundwater. These shall be in the locations as specified in Table 1 and shown in **Attachment A**, and used for monitoring or decommissioned as set out in this condition:

Table 1: Groundwater Monitoring Locations

Identifier	Environment Southland ID	Easting	Northing
BH1	F47/0339	1288696	4835375
BH2	F47/0340	1288769	4835240
BH3	F47/0342	1288710	4835196
BH4	F47/0341	1288760	4835176
BH5	F47/0343	1288645	4835063
BH6	F47/0344	1288621	4835229

(Eastings and Northings in NZTM2000 projection)

- (b) The consent holder shall monitor the groundwater in the vicinity of the Tokanui wastewater treatment plant ponds and infiltration trench by collecting representative samples every six months for the first two years of the consent from the bores identified in condition (3)(a) of this consent, and having those samples analysed for:
 - (i) Temperature
 - (ii) pH
 - (iii) Electrical conductivity
 - (iv) Total ammoniacal-nitrogen
 - (v) Total oxidised nitrogen concentration
 - (vi) Dissolved reactive phosphorus concentration
 - (vii) Escherichia coli concentration
 - (c) Monitoring from bore BH5 and BH6 shall cease and the bores shall be decommissioned no more than two years after the commencement of this consent.
 - (d) Two years following the commencement of this consent, the consent holder shall monitor groundwater monitoring from bores BH1 to BH4 once every two years in conjunction with the summer surface water survey.
4. Every six months, the consent holder shall monitor and record:
- (a) the instantaneous rate of the discharge of treated wastewater discharged to the Tokanui River at the time of the survey.
 - (b) the quality of the treated wastewater discharged from the oxidation pond by collecting representative samples of the discharge and having those samples analysed for:
 - (i) Electrical conductivity
 - (ii) Total suspended solids concentration
 - (iii) Carbonaceous oxygen demand concentration (BOD₅)
 - (iv) Ammoniacal nitrogen concentration
 - (v) Total nitrogen concentration
 - (vi) Total phosphorus concentration
 - (vii) Escherichia coli concentration
 - (c) The quality of water in the Tokanui River by collecting representative samples from the stream, upstream and approximately 150 metres downstream of the point of discharge. The samples shall be analysed for:

- (i) Temperature
 - (ii) pH
 - (iii) Electrical conductivity
 - (iv) Turbidity
 - (v) Visual clarity as measured using either a black disc or clarity tube
 - (vi) Dissolved oxygen concentration (%sat and mg/L)
 - (vii) Total ammoniacal-nitrogen concentration
 - (viii) Total oxidised nitrogen concentration
 - (ix) Dissolved reactive phosphorus concentration
 - (x) Escherichia coli concentration
5. Visual observations of bacterial or fungal slime growths shall be undertaken in the Tokanui River throughout the length of the mixing zone downstream of the discharge. These observations shall be undertaken at each sampling event completed in accordance with Condition 4 of this consent. Photographs of the stream bed taken 5 m downstream of the point of discharge and then every 10 m up to 45 m from the point of discharge shall be recorded and provided to the Consent Authority when reporting the results of the visual observations required by this condition.
6. The consent holder shall undertake aquatic ecology monitoring in 2022 and every five years thereafter, to characterise the impact of the discharge on the aquatic environment of the Tokanui River. This aquatic ecology monitoring shall consist of Macroinvertebrate sampling, following Protocol C2 (soft-bottomed, semi-quantitative) as outlined in the document "Protocols for sampling macroinvertebrates in wadeable streams" (authors Stark, Boothroyd, Harding, Maxted, & Scarsbrook, 2001), with analysis for a full range of metrics, including %EPT, MCI and SQMCI;
7. Aquatic ecology monitoring outlined in Condition 6 shall be undertaken at two downstream sample locations and one upstream sample locations (as identified on the plan attached to these conditions as Attachment A), with at least five replicate samples (or the number considered appropriate as outlined in Section 3 of the document "Stream Periphyton Monitoring Manual" (authors Biggs & Kilroy, 2000)) being collected from each location measured from the point of discharge as follows:
- (a) Upstream Point 1 (15 metres upstream);
 - (b) 1288780 E 4835219 N

- (c) Downstream Point 2 (60 metres downstream);
- (d) 1288785 E 4835450 N
- (e) Downstream Point 3 (150 metres downstream).
- (f) 1288797 E 4835102 N

Sampling should occur when flows are lower than the median flow condition. No sampling shall be carried out within ten days of the Tokanui River exceeding seven times its median flow or within seven days of flows that are greater than three times the median flow.

Median flow conditions in the Tokanui River shall be indicated by the monitoring conducted on the Waikawa River at Biggar Road by the Consent Authority which is to be used as a surrogate. Median flow for the Waikawa River is 2.706 cumecs²⁸.

8. The consent holder shall submit a report to the Consent Authority and provide a copy to Te Ao Marama Inc. and the Department of Conservation within two months of the receipt of results for monitoring undertaken in accordance with Conditions 3 - 7 of this consent. The report shall summarise the results of all monitoring, analyse trends and comment on compliance with the relevant Lowland Soft Bed standard (attached as **Attachment B** to these conditions).
9. All sampling procedures, including collection and transportation of samples, and laboratory analysis undertaken in accordance with the conditions of this permit must be performed to IANZ registered standards or otherwise as agreed upon in writing by the Consent Authority.
10. The consent holder shall establish and maintain permanent signage in a prominent position at or near the point of discharge to the Tokanui River to advise the public of the potential risk associated with the presence of treated wastewater in the Tokanui River resulting from the discharge of treated wastewater from the Tokanui Wastewater Treatment Plant.
11. The discharge of treated wastewater to the Tokanui River shall not result in any of the following effects at or beyond the zone of reasonable mixing, being 150 linear metres from the point of discharge:
 - (a) The production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - (b) Any conspicuous plumes, change in colour or reduction of visual clarity

²⁸ This was determined from the time series provided by Environment Southland from December 2007 to June 2017.

- (c) Any emission of objectionable odour;
- (d) The rendering of fresh water as unsuitable for consumption by farm animals;
- (e) Any significant adverse effects on aquatic life; and
- (f) The minimum standards set for Lowland Soft Bed waters, as described in the Southland Regional Water Plan (attached as Attachment B to these conditions), being exceeded.

Earthworks

- 12. All vegetation clearance and soil disturbance shall be preceded by erosion and sediment control measures necessary to ensure that disturbed soil and sediment-laden stormwater migration from construction of the infiltration trench is minimised to the extent practicable. All erosion and sediment control measures shall be maintained as effective until such time as all disturbed areas are stabilised.
- 13. No cut or cleared vegetation shall be placed in a manner where it could obstruct or enter the Tokanui River;
- 14. No stockpiling of excavated soils and / or materials will occur within 20 m of the Tokanui River;
- 15. No refuelling, repairs or maintenance of plant or machinery shall take place within 20 m of the Tokanui River.
- 16. The site shall be cleared of all construction debris and stockpiles upon the completion of construction works, with any contaminated material being disposed of at a suitably approved facility.

Planting

- 17. Within 12 months of completing the construction of the infiltration trench, the consent holder shall prepare and implement a planting plan using appropriate indigenous species, as necessary to achieve the following objectives:
 - (a) Assist with groundwater management along the infiltration trench; and
 - (b) Assist with stabilising the true-right river bank of the Tokanui River along the reach adjacent to the Tokanui Wastewater Treatment Plant designation.

Technology Review Report

- 18. The Consent Holder shall submit a report to Environment Southland on the 7th and 14th anniversary of the commencement of this consent, which shall:

- (a) Include an assessment of any significant technological changes and advances in wastewater management, treatment and disposal options since the date the consent commenced, that could be relevant to the Tokanui WWTP treatment and discharge facilities; and
- (b) An assessment of whether any newly available technologies, or combination of options identified through (a) above represent the Best Practicable Option (BPO) to minimise the actual or potential adverse effects of the treated wastewater discharge to the Tokanui River.

Accidental Discovery

19. In the event that archaeological material, koiwi tangata (human skeletal remains), Taonga or artefact material is discovered or disturbed, the consent holder shall apply the protocols specified in the Heritage New Zealand Pouhere Taonga Archaeological Discovery Protocol and Protocol in the event of a discovery, or suspected discovery of a site of cultural importance (Waahi Taonga/Tapu) in **Attachment C** to this consent, and forming part of this condition.

Administration

20. The Consent Authority may in accordance with section 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 or of receiving any monitoring results, for the purpose of:
- (a) Determining whether the conditions of this consent are adequate to deal with any adverse effects 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 became evident after the date of commencement of the consent; or
 - (b) Amending any monitoring, if the results indicate that the monitoring programme is inadequate;
 - (c) Adding or adjusting compliance limits;
 - (d) Requiring the adoption of the best practicable option to remove, reduce or mitigate any adverse effect on the environment arising as a result of the exercise of this consent; or
 - (e) Without limiting the statutory powers of review, to achieve consistency with any future changes to the to the Southland Regional Council's plans or policies and to address nutrient allocation following limit setting.

Attachment A: Groundwater Monitoring Plan



Attachment B: Water Quality Standards from Regional Water Plan – Appendix G

Surface water bodies classified as “Lowland soft bed”

The temperature of the water:

- shall not exceed 23°C
- the daily maximum ambient water temperature shall not be increased by more than 3°C when the natural or existing water temperature is 16°C or less, as a result of any discharge. If the natural or existing water temperature is above 16°C, the natural or existing water temperature shall not be exceeded by more than 1°C as a result of any discharge.

The pH of the water shall be within the range 6.5 to 9, and there shall be no pH change in water due to a discharge that results in a loss of biological diversity or a change in community abundance and composition.

The concentration of dissolved oxygen in water shall exceed 80% of saturation concentration.

There shall be no bacterial or fungal slime growths visible to the naked eye as obvious plumose growths or mats. Note that this standard also applies to within the zone of reasonable mixing for a discharge.

When the flow is below the median flow, the visual clarity of the water shall not be less than 1.3 metres.²⁹

The concentration of total ammonia shall not exceed the values specified in Table 1 “Ammonia standards for Lowland and Hill surface water bodies”.

The concentration of faecal coliforms shall not exceed 1,000 coliforms per 100 millilitres, except for popular bathing sites, defined in Appendix K “Popular Bathing Sites” and within 1 km immediately upstream of these sites, where the concentration of *Escherichia coli* shall not exceed 130 *E. coli* per 100 millilitres.

The Macroinvertebrate Community Index shall exceed 80 and the Semi-Quantitative Macroinvertebrate Community Index shall exceed 3.5.³⁰

Fish shall not be rendered unsuitable for human consumption by the presence of contaminants.

²⁹ Visual clarity is assessed using the black disc method or other comparable method employed by Environment Southland

³⁰ MCI and SQMCI indices to be determined using Environment Southland’s SOE sampling protocol and MfE’s Protocol P2 for sample processing (Stark et al. 2001)

Table 1: Ammonia standards for Lowland and Hill surface water bodies

Total Ammoniacal Nitrogen in mg/m³ at different pH	
pH	NH₄⁺-N + NH₃-N mg/m³
6.0	2570
6.1	2555
6.2	2540
6.3	2520
6.4	2490
6.5	2460
6.6	2430
6.7	2380
6.8	2330
6.9	2260
7.0	2180
7.1	2090
7.2	1990
7.3	1880
7.4	1750
7.5	1610
7.6	1470
7.7	1320
7.8	1180
7.9	1030
8.0	900
8.1	780
8.2	660
8.3	560
8.4	480
8.5	400
8.6	340
8.7	290
8.8	240
8.9	210
9.0	180

Attachment C: Accidental Discovery Protocol

Appendix A Protocol in the event of a discovery, or suspected discovery, of a site of cultural importance (Waahi Taonga/Tapu)

1. *Kōiwi tangata accidental discovery*

If Kōiwi tangata (human skeletal remains) are discovered, then work shall stop immediately and the New Zealand Police, Heritage New Zealand ([contact details below](#)) and Te Ao Marama Inc (Ngai Tahu (Murihiku) Resource Management Consultants) shall be advised. Contact details for Te Ao Marama Inc are as follows:

Te Ao Marama Inc
Murihiku Marae, 408 Tramway Road, Invercargill
P O Box 7078, South Invercargill 9844
Phone: (03) 931 1242

Te Ao Marama Inc will arrange a site inspection by the appropriate Tangata Whenua and their advisers, including statutory agencies, who will determine how the situation will be appropriately managed in accordance with tikanga māori.

2. *Archaeological Sites*

Archaeological sites are protected under the Heritage New Zealand Pouhere Taonga Act (2014), and approval is required from Heritage New Zealand before archaeological sites can be modified, damaged or destroyed.

Not all archaeological sites are known or recorded precisely. Where an archaeological site is inadvertently disturbed or discovered, further disturbance must cease until approval to continue is obtained from Heritage New Zealand. As stated above, the New Zealand Police also need to be advised if the discovery includes kōiwi tangata /human remains.

[Heritage New Zealand Regional archaeologist contact details:](#)

[Dr Matthew Schmidt](#)

[Regional Archaeologist Otago/Southland](#)

[Heritage New Zealand](#)

[PO Box 5467](#)

[Dunedin](#)

[Ph. +64 3 470 2364, mobile 027 240 8715](#)

[Fax. +64 3 4773893](#)

mschmidt@heritage.org.nz

3. *Taonga or artefact accidental discovery*

If taonga or artefact material (e.g. pounamu/greenstone artefacts) other than kōiwi tangata is discovered, disturbance of the site shall cease immediately and Southland Museum and Te Ao Marama Inc. shall be notified of the discovery by the finder or site archaeologist in accordance with the Protected Objects Act 1975. All taonga tuturu are important for their cultural, historical and technical value and are the property of the Crown until ownership is resolved.

4. *In-situ (natural state) pounamu/greenstone accidental discovery*
- Pursuant to the Ngai Tahu (Pounamu Vesting) Act 1997, all natural state pounamu/greenstone in the Ngai Tahu tribal area is owned by Te Runanga o Ngai Tahu. Ngai Tahu Pounamu Management Plans provide for the following measures:
- any *in-situ* (natural state) pounamu/greenstone accidentally discovered should be reported to Te Runanga o Ngai Tahu staff as soon as is reasonably practicable. Te Runanga o Ngai Tahu staff will in turn contact the appropriate Kaitiaki Papatipu Runanga;
 - in the event that the finder considers the pounamu is at immediate risk of loss such as erosion, animal damage to the site or theft, the pounamu/greenstone should be carefully covered over and/or relocated to the nearest safe ground.

The find should then be notified immediately to the Programme Leader – Ohanga, at Te Rūnanga o Ngāi Tahu. The contact details are as follows:

Programme Leader - Ohanga
Te Rūnanga o Ngāi Tahu
Te Whare o Te Wai Pounamu
15 Show Place
P O Box 13-046,
Otautahi/Christchurch 8021
Phone: (03) 366 4344; Fax: (03) 341 6792
Web: www.ngaitahu.iwi.nz