Otago Regional Council

RM26.297

20 July 2026

Via email to: Simon Mason (simon.mason@qldc.govt.nz) Claire Perkins (claire@landpro.co.nz)

Dear Simon

Request for further information under section 92(1) of the Resource Management Act 1991 (the Act) – Consent Application Number RM26.297

Thank you for your application to:

- discharge treated wastewater to land and the Kawarau River from the Shotover Wastewater Treatment Plant;
- discharge odour to air from the Shotover Wastewater Treatment Plant and the outfall;
- disturb the bed of the Kawarau River and to place and maintain an outfall structure and/or pipe in the bed of the Kawarau River;
- discharge sediment-laden water associated with the construction and maintenance of the outfall and/or pipe to the Kawarau River;
- to take and use groundwater for construction-phase dewatering; and
- to plant vegetation within the bed of the Kawarau River as part of the proposed outfall design.

An initial assessment of your application has been made by me and the following experts that are providing a technical audit of the application:

- Dr Michael Greer, Surface water quality and aquatic ecology; and
- Mr John Iseli, Air Quality

There are other experts providing technical audits of the application and I anticipate that the Otago Regional Council will make a further follow up request for further information when these technical reviews are received.

To be able to make a full assessment of the application, I request the following information under section 92(1) of the Resource Management Act (the Act).

Outfall options

The application proposes two options for the outfall into the Kawarau River. These are described in the application as:

- Rock outfall discharging into higher-velocity flows: involving a rock armoured structure with pipes to discharge out to deeper, faster-flowing water to avoid near-bank mixing and achieve higher dilution; and

- Submerged pipe/diffuser outfall (also referred to as the 'alternative outfall pipe' and 'subsurface diffuser outfall' throughout the application): involving discharge through a multi pipe arrangement, or single pipe, with or without diffuser within the main river channel to promote rapid mixing and achieve higher dilution.

You have provided a conceptual design of the rock outfall option and high level details for the alternative/submerged outfall pipe option. It is understood from the application that a determination of the preferred option will be made as the process continues.

1. The Application does not state when a decision will be made to determine the preferred outfall option. Please advise when a decision will be made on the preferred outfall option.
2. A number of technical appendices to the application note that they have only undertaken an assessment of the rock outfall option (including Appendix A, B1, C and D1) provide a more detailed analysis of the alternative outfall pipe option in these appendices.

You have provided a number of schematics for rock outfall option but not for the alternative submerged pipe option. Please provide the following information in relation to the alternative submerged pipe option so Council can better understand the proposal:

3. Plans or schematics of the alternative submerged pipe option;
4. An indicative construction methodology and any erosion and sediment controls; and
5. Please confirm that the assessments relevant to the 'subsurface diffuser outfall' in Appendix N also apply to the 'alternative outfall pipe'.

Determining the zone of reasonable mixing

A key issue identified in Dr Greer's preliminary advice is that the zone of reasonable mixing relied on for assessments undertaken in the application and supporting technical reports is exceptionally long, having been determined to align with the downstream extent of the Kimiākau/Shotover River confluence and Shotover Delta. Further information is required to understand the basis for determining the downstream extent of the Delta as the appropriate boundary of the reasonable mixing zone. The following information is requested:

6. Bullet (3) of Section 6.3 of the Surface and Groundwater Assessment[1] notes that the mixing zone extent has been determined through consideration of:

   The point after which compliance with various water quality standards is considered reasonable as a means of controlling potential adverse effects on water quality and the environment".

   Please clarify whether the downstream extent of the mixing zone proposed:

   a. Takes into account the matters in Policy 7.B.6 of the Regional Plan: Water for Otago relevant to the "zone of physical mixing"; or

[1] Dated 28 May 2026

b. The point at which you consider it is appropriate, having regard to Policy 7.B.6, for Schedule 15 water quality standards in the Regional Plan: Water for Otago to be achieved.

7. Section 6.3 of the Surface and Groundwater Assessment notes that the point at which treated wastewater mixes with inflows from the Kimiākau/Shotover River may occur between approximately 100 metres and 800 metres downstream due to the dynamic nature of the delta. Please provide information on how this variability has been accounted for in determining the proposed fixed 800 metres reasonable mixing zone extent, including consideration of:
    a. low flow conditions;
    b. alternative braid/channel configurations; and
    c. the scenario where mixing with Kimiākau/Shotover River flows does not occur until the downstream extent of the delta.

8. Please provide an assessment of whether a shorter reasonable mixing zone could be adopted while applying Policy 7.B.6.

9. Please confirm whether the supporting effects and statutory assessments provided have been undertaken on the basis that the 800 metre reasonable mixing zone is accepted. If so, please provide an assessment of whether those conclusions remain valid if a shorter mixing zone was adopted and, if not, provide information on the differences.

Proposed discharge rates and volumes

10. There appears to be a discrepancy between the proposed discharge metrics in Condition (3) of Consent #1 in Appendix O to the application and the metrics that have been used to inform the Assessments undertaken in the Surface and Groundwater Assessment. To ensure the effects assessments are accurate, please either:
    a. Re-run the surface water assessment using the discharge metrics proposed in Condition (3) of Consent #1; or
    b. Amend the Condition (3) of Consent #1 to align with the assessed discharge metrics and provide information to confirm that total annual volumes are consistent with an average peak dry-weather discharge rate of 360L/s over the proposed duration of the resource consent sought.
    c. If option (a) is selected, please confirm whether the supporting effects and statutory assessments provided have been undertaken on the basis of the average peak dry-weather discharge rate of 360L/s. If this is the case, please provide an updated assessment of whether those conclusions remain valid in light of the updated discharge metrics.

Impacts on Te Wairere/Lake Dunstan

The Surface Water and Groundwater Assessment and Ecological Impact Assessment conclude that effects on Lake Dunstan will be negligible, based primarily on predicted fully mixed nutrient concentrations within the Kawarau River Further information is required to better understand the robustness of the conclusion that effects on Te Wairere/Lake Dunstan will be negligible.

11. Please provide further information regarding the basis for concluding that effects on Te Wairere/Lake Dunstan will be negligible, including:
    a. Clarification of how the assessment has considered the sensitivity of the lake environment to changes in nutrient inputs, including the relationship between nutrient concentrations in inflowing waters and cumulative nutrient loads entering Te Wairere/Lake Dunstan over time.
    b. An assessment of the potential effects of the proposed discharge on Te Wairere/Lake Dunstan having regard to the predicted increase in nutrient loads discharged to the lake, including the estimated annual increases in total nitrogen and total phosphorus loads relative to baseline conditions with and without the short-term wastewater treatment plant discharge currently being considered under RM25.206.
    c. If the conclusion is still that effects on Te Wairere/Lake Dunstan will be negligible please provide further justification supporting that conclusion, including why the predicted nutrient load increases are not expected to result in measurable changes within the lake environment.

Impacts on Whakatipu Waimāori/Lake Wakatipu

The application acknowledges that reverse flow conditions can occur within the Kawarau River. Dr Greer's advice is that while this is not expected to be the direct primary pathway of effect, greater consideration should also be given to whether nutrient inputs associated with the proposed discharge could have implications for Whakatipu Waimāori/Lake Wakatipu under such conditions.

12. Based on this, please provide an assessment that considers:
    a. The frequency, duration and significance of reverse flow conditions;
    b. The potential for the discharge to be transported upstream to Whakatipu Waimāori/Lake Wakatipu under these conditions;
    c. An assessment of the potential effects of the proposed discharge on the Whakatipu Waimāori/Lake Wakatipu arising from reverse flow conditions within the Kawarau River. This should include the basis and evidence supporting this conclusion.

Surface and Groundwater Assessment

In addition to the additional matters sought above for the Surface and Groundwater Assessment, based on Dr Greer's advice, further information is sought with respect to the Surface and Groundwater Assessment provided as Appendix B1 to the Application so that effects can be accurately assessed:

13. Please re-run the mass balance assessments using the actual discharge quality and discharge volumes sought through the application, including measured effluent zinc concentrations. The assessment should also evaluate resulting 95th percentile ammonia concentrations against the National Policy Statement for Freshwater Management 2020 default A Attribute State thresholds (i.e:, at pH 8 and 20°C).

14. To assist with developing a more robust Periphyton Risk Assessment and Ecological Impact Assessment, please develop a synthetic flow record for the Kawarau River upstream of the

proposed discharge location by adjusting the Chard Road flow record to account for inflows from the Shotover, Arrow and Hayes catchments.

15. Bathymetric surveys were undertaken at flow conditions that were substantially above Mean Annual Low Flows (MALF). To understand whether the mass-balance approach used is suitable for predicting peak concentrations during very low flows, please explain whether the dispersion modelling is suitable for predicting peak contaminant concentrations under late summer and autumn low-flow conditions.

16. Section 6.5.4 of the Surface and Groundwater Assessment states:

    "*The dispersion modelling considers peak dry weather discharge rates, into low flow conditions of the Kawarau and Kimiākau/Kimiākau/Shotover Rivers. Higher rates of discharge are expected to occur during wet weather periods, as a result of inflow of stormwater into the wastewater network. These conditions are created during periods of significant stormwater and catchment run-off, and so coincide with periods when river flows are higher*."

    Please provide further justification for this statement. In particular, whether winter rainfall may generate infiltration and inflow to the wastewater network without a corresponding increase in flows in the Kawarau or Kimiākau/Shotover Rivers due to precipitation in the upper catchment falling as snow, or from snowmelt/rain over the summer period.

17. With respect to Table 6.3 in the Surface and Groundwater Assessment, please explain why the ammonia results have been assessed as complying with the revised NPS-FM 2020 A Attribute State thresholds when the reported 95th percentile concentration exceeds the summertime threshold.

18. To assist with understanding zinc toxicity risks, please explain why the first round of zinc monitoring undertaken on 22nd April has not been discussed in the report, given the elevated concentrations recorded at surface water monitoring sites.

19. With respect to Tables 6.5 to 6.7 in the Surface Water and Groundwater Assessment, please explain why the use of median total metal concentrations is considered conservative for copper and zinc, having regard to:
    a. The effectiveness of the wastewater treatment process in removing particulate-bound contaminants;
    b. The fact that ANZG default guideline values (DGVs) are assessed using 95th percentile concentrations; and
    c. The observation that, on 22nd April, dissolved copper and dissolved zinc each comprised approximately 70% and 90% of their respective total concentrations.

Periphyton Risk Assessment

Dr Greer's advice notes that a very limited periphyton dataset has been relied on to support the conclusions made in the Periphyton Risk Assessment. The following questions seek further information to better understand the periphyton risk and the Periphyton Risk Assessment provided as Appendix B2 to the Application:

20. Please provide an updated Periphyton Risk Assessment when sufficient data become available to support a robust assessment of periphyton risk. The revised assessment should incorporate updated contaminant concentration estimates from the Surface Water and Groundwater Assessment, and consider the risk to reaches downstream of RS10 where bed sediments may be less frequently disturbed when compared to the confluence of the Kimiākau/Shotover River.

21. To establish the methodology for establishing flushing flows is appropriate, please provide references supporting the shear stress methodology adopted in the assessment, including examples of its application for determining flushing flows in comparable river systems.

22. Please explain why no assessment has been provided of periphyton accrual risk during autumn, when river flows are often low but water temperatures remain conducive to periphyton growth.

23. Please provide justification to support the use of national-scale nutrient criteria for assessing periphyton growth risk in the vicinity of a wastewater discharge. In particular, please explain why criteria developed for broader receiving environments are appropriate where elevated ammonia-to-nitrate ratios may influence periphyton growth responses.

Ecological Impact Assessment

Dr Greer's advice is that there are no substantive concerns regarding the methodology adopted in the Ecological Impact Assessment provided as Appendix B1 to the Application. However as this assessment is reliant on the findings of both the Surface Water and Groundwater Assessment and the Periphyton Risk Assessment a revised Ecological Impact Assessment is requested as follows:

24. Please provide a revised Ecological Impact Assessment that:
    a. Incorporates any revisions arising from the updated assessments required to the Surface Water Quality and Periphyton Risk Assessment discussed above.
    b. Reviews the requested nutrient load analysis for Te Wairere/Lake Dunstan and to Whakatipu Waimāori/Lake Wakatipu and provides a robust and fulsome assessment of the subsequent ecological impacts on these lakes.

Please provide the following information to help understand how the conclusions have been reached.

25. With respect to Section 4.2.4.3 of the Ecological Impact Assessment, please explain why measured exceedances of the ANZG 99% species protection guideline value for zinc resulting from the existing emergency discharge to the Kimiākau/Shotover River have not been considered as evidence that zinc toxicity effects could occur under the proposal.

26. With respect to Section 7.4.2 of the Ecological Impact Assessment:
    c. Please explain how the Kimiākau/Shotover River is considered to generate frequent flood events in the Kawarau River when the Surface Water and Groundwater Assessment indicates that flows exceeding three times the median flow occur less than once per year.

d. Please explain the basis for attributing elevated zinc concentrations downstream of the Kimiākau/Shotover River to natural catchment mineralogy where concentrations in the Kimiākau/Shotover River upstream of the emergency wastewater discharge are reported as below detection limits and the wastewater discharge contains zinc concentrations of up to 0.4 mg/L.

27. With respect to Section 8.2.2.2 of the Ecological Impact Assessment, please provide further justification for not undertaking biomass monitoring to ensure to it is understood why this was not undertaken. In particular:
    e. Given that any response to a periphyton-related issue would likely involve engineering investigations, design, upgrades and potentially further consenting processes, please explain how laboratory processing times for biomass analysis would materially delay management responses.
    f. Please explain why a single instance of low periphyton cover, recorded prior to full implementation of the proposed discharge regime, should inform the design of long-term monitoring requirements.

Actual and potential impacts arising from the discharge of odour into air

Mr Iseli's advice is that the assessment of odour effects from the WWTP is generally sufficiently robust. One matter is raised by Mr Iseli that requires additional information is the management of odour effects arising from plant upset conditions to ensure ORC properly understands the proposed management regime:

28. Please describe how odour effects are proposed to be managed in response to WWTP upset conditions.

Objective and policy assessment

A comprehensive assessment of the objectives and policies relevant to the proposal is contained in Section 7 of the Application.

29. If any of the information provided in response to the matters identified in this letter mean that objective and policy assessments provided are no longer relevant, please provide updated assessments.

Your application will be placed on hold under section 88C of the Act until the requested information has been received. Unless I hear otherwise from you I will continue to do some minor work on your application so that we can progress it once the application comes 'off hold'.

In accordance with section 92A of the Act, please respond within 15 working days from the date of this letter (**10 August 2026**) with one of the following:

1. The information requested above; or
2. Written advice that you agree to provide the information, and the date by which you intend to provide it; or
3. Written advice that you refuse to provide the requested information.

Incomplete Application

Otago Regional Council

Under Section 92AA the Council may determine your application is incomplete if after 3 months of the **10 August 2026** you have not responded to this request. If determined to be incomplete your application will be returned to you. If you relodge your application it will be treated as a new application.

If the information you provide raises more questions, your application will remain on hold until sufficient information has been provided to enable processing to continue.

If you have any further queries, please contact me on (03) 474 0827 or 0800 474 082.

Information on the current processing costs for your application is included in the email relating to this letter.

Yours sincerely

Hannah Goslin
Consultant Consent Planner