
Section 92A Response – APP-2006012018.02

Date: 11 June 2026

To: Horizons Regional Council

Attention: Fiona Morton, Senior Consultant Planner
(Email: fiona.morton@horizons.govt.nz)

Copy: Trevor Robinson, Hearings Panel Chair
(Email: shelley.gunning@horizons.govt.nz)

From: Sukhi Singh, Technical Director Planning

Copy: Mike Ryan, CEO, Winstone Pulp International Limited

Dear Fiona,

Thank you for your request for further information pursuant to section 92 of the Resource Management Act 1991 (RMA), dated 18 May 2026. The applicant's response is detailed below.

This section 92 response includes the following attachments:

- **Attachment 1:** Te Ara Hiko Torrefaction Process Diagram
- **Attachment 2:** Technical Memo 4 - Wetland Construction – Erosion and Sediment Control Plan (dated 10 June 2026, Rev2)
- **Attachment 3:** Soil Sample Locations on Earthworks Plan.
- **Attachment 4:** Technical Memo 5 – Detailed Site Investigation (dated 8 June 2026, Rev2)
- **Attachment 5:** Technical Memo 6 – Remediation Action Plan (dated 8 June 2026, Rev2)
- **Attachment 6:** Karioi Pulp Mill Bore Details.
- **Attachment 7:** Completed Form 9

The attachments referred to above can be found in the following link:

[WPI S92 Response - Attachments - 11 June 2026](#)

Question 1: Condensate discharge and water quality / ecology

a. Confirmation of the final description of what is proposed to discharge to the Whangaehu River, including whether any stormwater component remains within the current application, or whether the discharge is entirely condensate, and the relative proportion of condensate derived from torrefaction and from the hot water boiler.

Applicant's Response:

- There is no stormwater component in the condensate discharge.
- The discharge is entirely condensate.
- Refer to response to question 1(c) for condensate composition in the context of combusting wood gas.

b. At page 7 of the Planning Report and section 3.0 / Table 1 of the Water Quality Memo, the proposed condensate composition is summarised. The contaminants generated from combustion of wood chip (products of partial and complete combustion) appear to differ from the contaminants volatilised from wood during torrefaction (volatile and semi-volatile compounds with a boiling point less than the torrefaction temperature of approximately 300 °C). Please confirm whether the nature of the contaminants present in the condensate will also differ under the revised proposal?

Applicant's Response:

- Table 2 in the Planning Report and Table 1 in the Water Quality Memo, correctly reflect the expected composition of the condensate sought to be discharged.
- Refer to response to question 1(c) for condensate composition in the context of combusting wood gas.

c. Technical Memo 1 indicates that the analytical results are for the condensate from biomass boiler flue gas at the Danish Polytechnik facility rather than condensate from the proposed torrefaction process. Please provide the following further information:

- i. Details of the difference in composition of condensate from the torrefaction process compared to condensate from a biomass boiler.
- ii. Justification of the selection of contaminants monitored in the biomass boiler condensate and their relevance to the condensate from torrefaction.
- iii. Whether there are particular contaminants associated with *Pinus radiata* torrefaction (e.g. from the higher terpene content) that may not be represented in the monitoring data from the Danish biomass boiler.

Applicant's Response to c(i):

- **Attachment 1** contains the Torrefaction Process Diagram. It provides clarity on the source of the condensate after combustion.
- Condensate from combusting wood gas (torrgas) is considered to be the same composition as condensate from combusting wood chips (biomass) for the purposes of this application.
- The applicant considers this to be a suitable and conservative approach given the torrgas' air emissions, by default, are a subset of the biomass air emissions. It is further noted:
 - Both combustion processes are specifically designed to ensure complete combustion at around 950degC with a flue gas residence time of greater than 2s over 850degC and directed through an advanced particulate filtration system (ESP/baghouse) prior to being condensed.
 - Expected air emission from the process (that may be relevant to the condensate quality) include:
 - **Volatile Organic Compounds (VOCs):** Includes residual acids, aldehydes, ketones, and other light organics (pinenes etc) are largely destroyed during thermal oxidation.
 - **Sulphur oxides (SOx):** Very low because pine wood (especially debarked) naturally contains low levels of sulphur.
 - **Halogens:** Chlorine (which can form HCl) has inherently low levels in clean (debarked) Pinus radiata
 - **Trace metals (including Arsenic, Chromium etc.):** Present in very low or negligible amounts. Debarked and clean Pinus radiata has inherently low levels of trace metals (as shown in the biomass condensate lab analysis results, contained in Appendix 1 of Technical Report 1 – Torrefaction Memo - Zinc results are discussed under c(iii) below). Any trace amounts that may form as particulate are further controlled by the baghouse/ESP system.
 - **Dioxins and Furans:** The high combustion temperature of 850°C, combined with very low chlorine content in debarked Pinus radiata, strongly suppresses the formation of dioxins and furans. Any trace amounts that may form are further controlled by the baghouse/ESP system.
- The applicants air quality expert (Nigel Goodhue, Air Matters Limited) has reviewed the process and biomass source (refer summary points above) and considers that the torrgas emissions will be accurately reflected in the biomass emissions, and no additional quantifiable emissions would be expected.
- The experts water quality specialist agrees that based on the above, it is also reasonable to expect the condensate testing to be representative of the proposed discharge quality of condensate from the combined torrgas combustion and biomass combustion processes.

Applicant's Response to c(ii):

- Refer to the response to Question 1(c)(i).
- It is appropriate for a common set of contaminants to be measured in the consolidated discharge stream.
- Due to the complete combustion of torr gas and biomass, Organic acids (acetic, formic), methanol and other alcohols, aldehydes (formaldehyde, acetaldehyde), phenols and lignin-derived compounds, tars and PAHs are expected to be eliminated.
- Furthermore, fly ash particulates will be removed by the proposed ESP system.

Applicant's Response to c(iii):

- Pinus radiata may have slightly different composition from the biomass used in the Danish plant (e.g. higher terpene), however following complete combustion this is not considered relevant to the quality of the condensate.

d. Is it proposed to use Table 2 of the planning report as the basis for setting discharge quality limits?

Applicant's Response:

- Yes.

e. Zinc concentration appears quite elevated compared with other metals. Please provide an explanation as to the source / cause.

Applicant's Response:

- All metals in the condensate originate from the wood itself, which in turn originate from the soil the wood is grown in.
- Zinc was the predominant metal detected, which is consistent with its relatively high abundance in biomass and its low vapor pressure leading to a tendency to volatilise and subsequently condense during thermal processing.

f. What is the expected organic load (e.g. BOD5) content of the discharge?

Applicant's Response:

- The expected organic load of the discharge, including BOD will be very low. The wastewater is a condensate stream derived from high-temperature biomass combustion processes. Under these conditions, organic compounds (including volatile organics, phenols and hydrocarbons) are effectively thermally destroyed prior to condensation as indicated by low values of mineral oil and PAH.

g. At page 7 of the Planning Report, the condensate summary does not appear to include BOD. Is any further information available on BOD and any additional organic or aromatic parameters not clearly addressed in the lodged material?

Applicant's Response:

- Refer the response to Questions 1(f).

h. Please identify / evaluate any risk of effluent quality degradation and / or odour creation that may be caused by the discharge of potentially high-BOD wastewater into a wetland (risk of anoxia, change in pH, H₂S formation and discharge, etc.) prior to the discharge into the river.

Applicant's Response:

- Any risk of effluent quality degradation and odour generation is confined to the wetland and the risk is considered very low.
- The condensate is derived from high-temperature combustion processes, resulting in negligible organic content and very low BOD₅. Although ammoniacal nitrogen is present, any oxygen demand is limited to gradual nitrification and is not sufficient to drive widespread anoxic conditions.
- The wetland design (including a vertical subsurface flow stage and intermittent loading) promotes aerobic conditions and oxygen transfer, reducing risk of stagnation. Consequently, conditions required for H₂S formation and odour generation are unlikely to occur, and stable effluent quality is expected prior to discharge

i. The Planning Report addresses water quality effects at pages 20-21 and section 107 at page 34, while the Water Quality Memo compares modelled downstream concentrations with Schedule 5 targets for Whau_1a. Please identify where, in the lodged material, the revised discharge has been assessed against the full One Plan water quality framework and any applicable restrictions under section 107 of the RMA or provide that assessment. Note that the condensate discharge from the Revised Proposal should be assessed on its own, rather than being compared to prior consented or proposed activities.

Applicant's Response:

- The updated application is appropriately assessed under the objectives, policies and rules framework of the One Plan:
 - Section 8.3.1 of the Planning Report (Regional Policy Statement): noting that the notified AEE identified the objectives and policies relevant to an application for discharge of wastewater to water, the revised AEE adopted those objectives and policies as being relevant, and did not repeat those for the purposes of avoiding duplication. The Planning Report then provided an assessment against each of the relevant objectives and policies framework to illustrate alignment of the revised proposal with the strategic framework of the Regional Policy Statement.

- Section 8.3.2 of the Planning Report (Regional Plan) – The Planning Report states that the notified AEE identified the relevant objectives and policies of the Land and Freshwater chapter applicable to the discharge of wastewater to water. That identification was adopted, and the relevant objectives and policies were not repeated to avoid duplication. However, an updated assessment is included in the Planning Report to focus on the alignment of the revised proposal with those provisions.
- The applicant considers that the approach taken in the Planning Report (i.e. adopting the identified objectives and policies (avoiding unnecessary duplication), with the focus on the assessing the revised proposal against those adopted objectives and policies) aligns with the guidance provided by the Hearings Panel in Minute 2 (item 14):

“We therefore direct that the applicant file an amended application and environmental effects...For the avoidance of doubt, we are relaxed if the revised assessment of environmental effects takes the form of an addendum to the existing assessment, so long as it informs all parties of what is now sought, and the implications of what is now sought on the existing assessment.”

- The revised assessment in the Planning Report and the Water Quality Assessment Memo (Technical Memo 2) have assessed the revised proposal on its own merits. For completeness purposes the Water Quality Assessment Memo has included a comparison of the modelled results against the notified AEE. The applicant considers this to be a sound approach, and helpful to the Hearings Panel and the submitters to better understand the potential water quality effects arising from the notified AEE vs the revised proposal, and the overall significant positive effects on water quality.
- The Water Quality Assessment Memo (Technical Memo 2), evaluates effects on receiving water quality using a mass balance approach and comparison with relevant guideline values (including One Plan Schedule 5 targets and ANZG criteria). This assessment demonstrates that changes in downstream concentrations are minimal and within natural variability.
- Based on the modelled outcomes presented:
 - The discharge represents a very low volume (<0.4% of MALF) with high dilution (~266:1)
 - No conspicuous change in colour, clarity, or the production of objectionable odour or scums is expected
 - No significant adverse effects on aquatic life are anticipated, with changes in water quality remaining within natural variability and not altering attribute bands
- Section 8.5 of the Planning Report provides commentary on section 107(1) of the RMA, and confirms that the revised discharge is not expected to give rise to any effects listed in section 107(1) on the receiving waters:

- There will be no production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials.
- There will be no conspicuous change in the colour or visual clarity.
- There will be no objectionable odour.
- The discharge will not render freshwater unsuitable for consumption by farm animals.
- There will be no significant adverse effects on aquatic life.

j. Please provide a process flow diagram showing the key process elements/equipment, process streams of the torrefaction process and resulting discharges to the environment.

Applicant's Response:

- Refer to Te Ara Hiko Torrefaction Process Diagram in **Attachment 1**.

Question 2: Earthworks associated with wetland construction

a. At pages 8-10 of the Planning Report, the wetland concept design and associated construction works are described, including about 22,441 m³ of cut and fill over 17,146 m². The lodged material indicates that aspects of the wetland construction package remain subject to further design. Please confirm which elements of the wetland footprint, staging and cut / fill methodology are finalised, and which remain to be confirmed.

Applicant's Response:

- The extent of the proposed earthworks is limited to the construction of the proposed wetland (as requested by Ngāti Rangī in their submission). The wetland construction includes two stages, as explained below.
- Stage 1: Earthworks construction: Figure 2 in Water Quality Assessment Memo details the concept cross section for the proposed wetland system (copied below). Technical Memo 4 (Wetland Construction – Erosion and Sediment Control Plan (“ESPN”) outlines the full extent of the earthworks, finishing at the wetland base, delineated by the installation of the impermeable HDPE liner (being the green line shown in the illustration below).

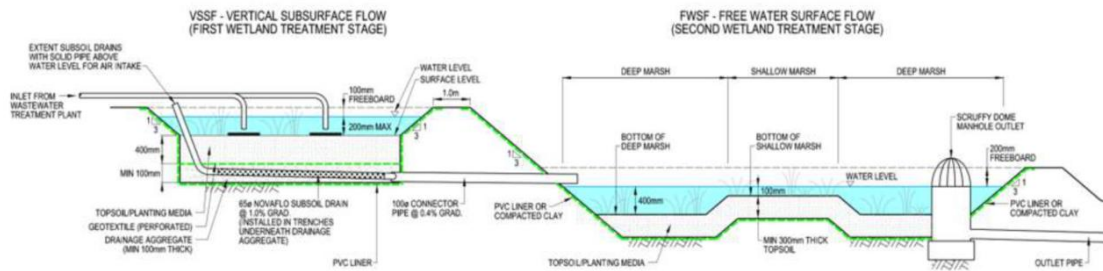


Figure 2. Concept cross-section for the proposed constructed wetland system (not to scale).

- Stage 2: Planting plan: the detailed design for this stage of the wetland has not being completed at this bulk earthworks stage. Stage 2 works includes landscape design work that sits above the HDPE liner (i.e. above the green line shown in the illustration above). Being a shallow wetland, no fill material is required to complete the wetland construction. The figure above illustrates that a layer of drainage aggregate, geotextile and topsoil/ planting media will be placed above the HDPE liner. The applicant is supportive of a condition of resource consent requiring the completed Wetland Planting Plan be provided to council.

b. The ESCP¹ at pages 4-7 appears to be relatively high level, and page 4 refers to "Horizon Regional Council Erosion and Sediment Control Guidelines."² Please confirm the erosion and sediment control design standard that has been applied and identify which aspects of the erosion and sediment control (ESC) design are finalised and which remain subject to further design or construction methodology.

¹ESCP - Erosion and Sediment Council Plan

²No such document exists

Applicant's Response:

Technical Memo 4 (Wetland Construction – Erosion and Sediment Control Plan ("ESCP")) has been updated following a meeting with the council's earthworks specialist (**Attachment 2**):

- The ESCP confirms that it has been prepared in accordance with Greater Wellington Erosion and Sediment Control Guide for Land Disturbing Activities, February 2021 ("Guidelines").
- The ESCP controls proposed and nature of the earthworks ensures that the proposal exceeds the objectives of the Guidelines by capturing and containing all sediment and runoff from the subject site.
- Refer to the ESCP in **Attachment 2** for details on proposed construction methodology.

c. The ESCP at pages 5-7 and the associated drawings appear to rely on a containment-based approach to runoff management within the work area, rather than a more conventional treatment and discharge device. Please provide the technical basis for that approach, including the assumptions made as to runoff containment, infiltration, storage, and management of any water retained on site during construction to

show that treatment can be achieved to a similar or greater standard than a traditional ESC approach. Alternatively, please provide an ESCP in general accordance with Greater Wellington Regional Council's Erosion and Sediment Control Guide for Land Disturbing Activities in the Wellington Region (February 2021).

Applicant's Response:

- Refer to response to Question 2(b).
- Refer to ESCP in **Attachment 2** for the rational for proposing a containment-based approach.

d. The ESCP at page 5 and the Planning Report at page 9 identify the existing pond within the wetland footprint and indicate that it will be filled as part of the works. Please clarify how any existing inflows to, and outflows from, that pond are proposed to be managed during construction of the new wetland.

Applicant's Response:

- Refer to response to Question 2(b).
- Refer to ESCP in **Attachment 2** for the construction methodology. There are no inflows to and outflows out from the subject pond.

Question 3: Earthworks associated with contaminated soil

a. At pages 17-18 of the Planning Report and in the DSI³ / RAP⁴ material, what contaminated material is expected to be excavated, shifted, reused, capped or otherwise managed during wetland construction? During the Teams call on Wednesday 13 May, we were advised that only a small part of the site contained contaminated material, and the wetland earthworks were clear of that part. Please confirm the extent to which contaminated material will be disturbed, excavated, shifted, reused, capped, or otherwise managed as part of the wetland construction works.

³ DSI – Detailed Site Investigation

⁴ RAP – Remedial Action Plan

Applicant's Response:

Attachment 3 illustrates the soil sample locations overlaid on the proposed earthworks cut and fill plan. It shows that:

- There are only two areas within the proposed wetland earthworks area that require remediation (sample locations WA09 and WA18).
- Sample location WA09 has the arsenic exceedance and WA18 has the zinc exceedance.
- Cut material will be used to fill in the existing pond to cap location WA18.
- Cut material from WA09 will be placed at the top (near surface layer) of the existing pond.

- A HDPE liner will be placed over this for the construction of a new wetland.
- Refer to **Attachment 4**, which contains the updated Technical Memo 5 – Detailed Site Investigation (dated 8 June 2026, Rev2).
- Refer to **Attachment 5**, which contains the updated Technical Memo 6 – Remediation Action Plan (dated 8 June 2026, Rev2).

b. If earthworks are to be undertaken with the contaminated material, could any contaminated soil or contaminated soil-laden water be discharged to land and / or water during the works, and if so, can the Applicant please demonstrate how that consenting pathway has been addressed, including the applicable rule references?

Applicant's Response:

- The construction methodology outlined in the ESCP (**Attachment 2**) has been carefully designed to prevent contaminated material or soil-laden water to be discharged to land or water during the construction phase.
- A perimeter earth berm will be placed around the wetland earthworks area prior to commencement of remedial works as a sediment and erosion control measure. In addition, each wetland constructed will also have a wetland earth berm around it which will create additional sediment and erosion controls for the site.
- Refer to response to Question 3(d) for commentary on the consenting pathway.

c. If the earthworks are within the contaminated soil area as stated in the DSI/RAP material, please provide an explanation as to where the ordinary earthworks methodology ends and the contaminated material management begins, given the overlap between the Planning Report, DSI, RAP and ESCP?

Applicant's Response:

- As explained in response to Question 3(a), there are only two areas within the proposed wetland earthworks area that require remediation (sample locations WA09 and WA18).
- When final completion depth is reached for the remedial areas (existing pond which will have WA18 and cut material from WA09 and final cut level of WA09), and a HDPE liner is placed within and over the earth berm of each of new wetland above these remedial areas, the RAP will no longer apply to the remaining wetland construction works.

d. In particular, please address if a separate Regional Council consent is required under the One Plan for any associated discharge of contaminated material or contaminated water. Any such consent should include a completed Form 9 and a corresponding AEE to enable assessment of the works.

e. Council's preliminary view is that this activity may require a separate consent under LF-LW- R38 as a discretionary activity to address contaminants other than sediment. Does the Applicant consider that

those matters are fully addressed by the current earthworks' application under page 11 of the Planning Report?

Applicant's Response:

- The applicant confirms that the triggers for resource consent as outlined in section 4 of the Planning Report are deemed complete, and no additional triggers of consent have been identified having considered the council's sec92 request.
- The applicant considers that the proposal will not result in the discharge of contaminated material or contaminated water, therefore, approval is not required under Rule LF-LW-R38. This rule is a default discharge rule, where the discharges of water or contaminants to land or water is not covered by any other rule in the One Plan.
- The applicant considers that the proposed remediation of sample locations WA09 and WA18 and is a **Permitted Activity** under Rule LF-LW-R36, which provides for "Discharges of contaminants onto land or into land that may enter water", subject to compliance with the following conditions:
 - Rule RP-LF-LW-R34.
 - Rule RP-LF-LW-R35 (except (1)).
 - LF-LW-R36
- The proposal complies with conditions of Rule RP-LF-LW-R34:
 - While no discharge is expected, the rule provides that the rate of discharge must be no greater than 50 m³/d.
 - The discharge (if any) will not contain agricultural waste, nor other materials detailed in condition 2 of this rule.
 - As no discharge is expected, there will be no cause to exacerbate flooding of any other property.
 - There will be no scouring or erosion expected on any land, or waterbody.
 - There will be no alteration to any natural course of any waterbody or its bed.
 - No discharge is expected to any of the matters listed in condition 6.
 - No discharge is expected to create effects listed in condition 7.
 - No discharge is expected, therefore, compliance will be met with condition 8.
- The proposal complies with conditions of RP-LF-LW-R35:
 - While no discharge is expected, the rule provides that the rate of discharge must be no greater than 100 m³/d.

- The discharge (if any) will not contain agricultural waste, nor other materials detailed in condition 2 of this rule.
- As no discharge is expected, compliance will be met with conditions 3 to 7.
- The proposal complies with conditions of LF-LW-R36:
 - While no discharge is expected, it is noted that compliance will be met with all conditions, including the requirement for a least 600mm above the seasonally highest water table (condition 3) and there be no more than minor reduction in quality of groundwater (condition 7).

Question 4: Contaminated soil investigations

- a. *At the DSI executive summary (pp. i-ii) and regulatory / conclusion sections (pp. 19-23), are the DSI findings intended to be complete for the proposal now being advanced? The DSI should not be directed solely to the NESCS pathway but should also be considered within the broader Horizons / One Plan contaminated land and redevelopment context. Council's preliminary view is that the DSI is not yet sufficient to fully characterise contamination within the footprint of the proposed works or to support the proposed management approach, and that additional contaminated land investigation and assessment are required. Specifically, the full vertical extent of contaminants in soil proposed to be reused has not been fully characterised, particularly in areas where contamination (arsenic) and anthropogenic material has been identified.*

Applicant's Response:

- Additional laboratory analysis from the subsequent sample collected at 1 metre below ground level (m bgl) from WA09 (arsenic exceedance) identified arsenic at 1.32 milligrams per kilogram (mg/kg).
- The RAP has been updated to confirm that visible anthropogenic material (concrete, wood, plastic, rubber) will be separated and not used within the remedial areas of WA09 and WA18.
- The applicant is of the view that the DSI is comprehensive and appropriately characterises contamination within the proposed earthworks area.
- The DSI and RAP have been updated to incorporate the above (refer to **Attachments 4 and 5**)

- b. *Per- and polyfluoroalkyl substances (PFAS) have historically been used in pulp processing, and these do not appear to have been considered as contaminants of potential concern in the DSI. Further assessment is required as to whether PFAS may be present within pulp material in the existing footprint, including confirmation as to whether PFAS or PFOA were used, stored, or otherwise present at the WPI site.*

Applicant's Response:

- No fluorine containing chemicals were used as part of the pulp mill process, therefore, PFAS is not a contaminant of concern.

c. *What is the final contaminated footprint relevant to the wetland works, including the area associated with the zinc exceedance beneath the pond area identified in the DSI, and has the arsenic within that footprint been adequately characterised for the purposes of the proposed works? In Council's view, further work is required to adequately delineate and assess both the zinc exceedance and the arsenic issue within the footprint of the proposed works.*

Applicant's Response:

- Refer to **Attachment 3** showing the sample locations in the context of the earthworks plan.
- The vertical extent of arsenic at location WA09 is less than 1 m bgl as identified by subsequent lab analysis (see response to Question 4a).
- The lateral extent of zinc concentrations in soil at location WA18 attenuate at the same depth at sample location WA20 located approximately 50 m to the east.
- Location WA20 is closer to the nearest surface waterbody than WA18. The nearest surface waterbody is approximately 540 m east from WA20.
- The applicant is of the view that both the zinc and arsenic issue have been adequately delineated and assessed.

d. *At pages 3-5 of the Remedial Action Plan (RAP), what is the final remediation / management approach, including capping, any impermeable layer, validation, and is any further investigation still anticipated? How will this affect current and future consenting requirements?*

Applicant's Response:

- As mentioned before, there are only two areas within the proposed wetland earthworks area that require remediation (sample locations WA09 and WA18).
- As illustrated in the Wetland Concept Design (Water Quality Assessment Memo), and confirmed in the RAP, the remediation strategy is capping with a HDPE impermeable layer to isolate the subject contaminants from receptors.
- No further investigations are anticipated.
- The current consenting requirements are detailed in section 4 of the Planning Report. The proposed earthworks are captured under Rule LF-LAND-R6 as a **controlled activity**.
- With respect to earthworks, the only future consenting requirement of relevance is detailed in section 5.4 of the Planning Report. Resource consent approval will be required under regulation 9(1)(b) of the NES-CS as a **controlled activity** from the District Council. Section 5.4 of the Planning Report states that:

- The matters of control specified in regulation 9(2) of the NES-CS overlap with this current consent, and the both the Regional Plan and the NES-CS are concerned with the mobilisation and management of contaminated soils during land disturbance phase.
- Noting the controlled activity status under the NES-CS and the clear corresponding assessment framework, the application to the District Council is not considered high risk and can be progressed separately, without affecting the Regional Council's ability to process this current application.

e. How is the RAP intended to operate alongside the wetland design and earthworks methodology described in the Planning Report at pages 8-10?

Applicant's Response:

- When final completion depth is reached for the remedial areas (existing pond which will have WA18 and cut material from WA09 and final cut level of WA09), and a HDPE liner is placed within and over the earth berm of each of the new wetland above these remedial areas, the RAP will no longer apply to the remaining wetland construction works.
- Refer to response to Question 3(c).

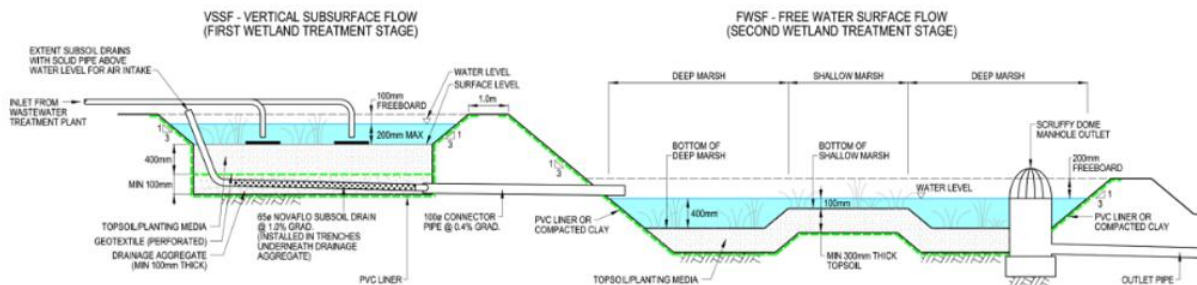
Question 5: Groundwater matters

a. At pages 8-9 of the Planning Report, the wetland is described as a vertical subsurface flow system with vertical percolation and infiltration media, while pages 4-5 of the RAP refer to an impermeable layer to prevent downward infiltration into the former pond area. Is the proposed wetland lined, partly lined, or unlined? The plan indicates that the liner may be PVC or clay lined. Please confirm if the wetland is proposed to be lined or not and if so provide the proposed liner specification, including liner type, permeability, construction standard, and how the liner will prevent or minimise seepage from the wetland to land or groundwater.

Applicant's Response:

- The proposed wetland is designed to be lined to prevent seepage to underlying soils and groundwater and to retain water within the constructed wetland.
- The mentioned "vertical percolation and infiltration media" are associated with the designed layers within the wetland (i.e. above the HDPE liner).
- Consistent with the RAP and the wetland concept design, the wetland will incorporate an engineered HDPE (high-density polyethylene geomembrane) liner system across the base and sides of the treatment cells as shown below (Figure 2 of the Water Quality Assessment Memo).

- The HDPE liner acts as impermeable barrier to prevent water seepage. It is intended to prevent downward infiltration into the former pond area and underlying soils, thereby ensuring hydraulic control and protection of groundwater.



- It is expected that the liner will follow the specifications described below or similar:

Synthetic geomembrane liner (e.g. HDPE)

- Thickness: typically 1.5–2.0 mm
- Permeability: effectively impermeable ($\leq 10^{-13}$ m/s equivalent)
- Installed in accordance with recognised standards (e.g. welding QA/QC, seam testing – GRI-GM19, ASTM D6392, liner integrity certification, etc)
- The technical specifications of the HDPE liner will be provided at the detailed design stage and will form part of the information to be incorporated in the Wetland Landscape Plan (to be included as a condition of resource consent).
- The objective of the design intent of the HDPE liner is to:
 - Provide a continuous low-permeability barrier beneath and around the wetland cells
 - Prevent seepage and infiltration to land and groundwater
 - Maintain hydraulic containment within the wetland treatment system
 - Ensure flows are directed through the intended treatment pathway prior to discharge

b. *Is any seepage from the base of the wetland to land or groundwater intended, prevented, or incidental? Most 'lined ponds' leak to a greater or lesser extent so this will be an issue even if the ponds are lined. Based on the proposed liner specification, please provide an estimate of the likely range of seepage through the base of the wetland.*

Applicant's Response:

- The proposed liner permeability criteria (refer to response to Question 5(a)) are consistent with established New Zealand and international practice for containment systems. Synthetic geomembrane liners (e.g. HDPE or PVC) are widely recognised as effectively impermeable barriers, with hydraulic conductivity typically in the range of 10^{-12} to 10^{-15} m/s. These materials are routinely used in engineered containment systems (e.g. landfills, wastewater ponds) to achieve near-zero seepage, provided they are correctly installed and quality-assured.
- Furthermore, the use of the liners for shallow wetlands is considered to be safer than the common use in landfills, as the liners will be subjected to significantly lower loads and less likely to be damaged by being overlaid with waste material or machinery and compaction processes.
- Based on that, the use of the proposed liners is considered a sufficiently effective measure to avoid seepage, and the risk of leakage is considered minimal.

c. It is our understanding that the Applicant considers the water encountered during site investigations to be "perched water" and not "groundwater." Please:

- provide a definition of perched water;*
- explain why it is not considered to be groundwater for the purposes of the One Plan, and why it is not subject to the groundwater rules of the One Plan.*
- Based on the information provided in the revised application, describe the nature, location, extent, and significance of perched water at the site, and whether it will be affected by construction or operation of the proposed wetland.*

Applicant's Response to c(i):

- Perched water (or perched water table) is a localised, elevated zone of saturation above the regional groundwater table, occurring where infiltrating water is held up by a low-permeability layer within the unsaturated zone.
- It is often small, discontinuous and/or temporary, and separated from the main groundwater system (aquifer) by unsaturated material. It is frequently rainfall-driven (episodic or seasonal), occurring in soils or shallow geology rather than regional aquifers.

Applicant's Response to c(ii):

- Groundwater is not tightly defined, in a hydrological sense, under the RMA but is treated broadly as part of "water in any form" beneath the ground, managed by regional councils for allocation, takes, diversion, and discharge. It generally forms continuous aquifer systems that are a managed resource under the RMA.

- As the observed perched water is likely a localized effect of the pond and the fill material underlaying it, it is not considered to be part of the regional aquifer (with observed groundwater levels below 4.5 mbgl within the gravels and volcanic materials underlaying the fill). The perched water is considered isolated and not hydraulically connected to the regional groundwater system.
- **Attachment 6** contains Karioi Pulp Mill bore details, including summary of soil profile and testing from bore log geotechnical investigations.

Applicant's Response to c(iii):

- The perched water encountered during the soil investigations was shallow (around 1 mbgl) confined in the fill material underlaying a small area (4 out of 20 boreholes) in the investigation.
- Other investigations at other locations within the site (geotechnical investigations done in 2021) found no water within the fill layers, encountering groundwater in the deposits of the Waimarino Formation below 4.5 mbgl.
- The groundwater supply bore at the site (31.5 m deep) shows a static groundwater level below 10 mbgl, while the nearby bores at the Sawmill and neighbouring property have observed groundwater levels around 6 to 7 mbgl. These bores and investigations show a regional groundwater resource within the volcanic deposits underlaying the area.
- The perched water seems to be a localized zone of saturation within the fill material, likely driven by seepage from water held within the pond. It doesn't form a groundwater resource.
- The perched water found is unlikely to be affected by the construction and operation of the wetland. The pond is proposed to be backfilled, and the wetland is proposed to have a maximum depth of 0.5 m and be lined to prevent seepage.

d. At pages 17-18 of the Planning Report, the Applicant notes that the original pond may represent groundwater ponding, and states that groundwater was encountered at depths of 0.8 to 1 m in the adjacent area. The proposed excavation will extend to 0.7–1 m below ground. Please:

- i. Confirm the Applicant's current understanding of depth to groundwater at the site;*
- ii. confirm the Applicant's current understanding of likely groundwater flow direction at the site;*
- iii. confirm whether groundwater mounding has been considered;*
- iv. Explain how groundwater will be managed during construction and through the life of the wetland;*

- v. *Provide an estimate of the volume of water likely to be intercepted, and confirm whether dewatering will be required during construction (including estimated dewatering volumes);*
- vi. *Confirm whether dewatering will trigger any resource consent requirement under the One Plan; and*
- vii. *Provide any available onsite monitoring data from monitoring bores, or explain whether such monitoring is proposed, to assist the Council's understanding of groundwater levels and local baseline groundwater quality*

Applicant's Response to d(i) to d(vii):

- Refer to response to Question 5(c)(iii).
- **Attachment 6** contains Karioi Pulp Mill bore details, including summary of soil profile and testing from bore log geotechnical investigations.
- Based on the available groundwater information, and the overall assessment that the proposal will not have any adverse effects on the groundwater resource, the applicant has not assessed the direction of the groundwater flow, nor is it considered relevant to this application.
- As no construction works are proposed to interact with groundwater:
 - Dewatering will not be required.
 - No new trigger of resource consent with respect to dewatering during construction phase is required.
 - Groundwater management plan is not required.
 - Groundwater monitoring is not required.

- e. *Has any assessment been undertaken of groundwater quality effects, including the discharge of heated water to ground and any effect on any site supply bore, given there does not appear to be a standalone groundwater effects assessment in the revised application? As noted above in relation to condensate discharge/water quality, a site-specific water quality assessment should be undertaken and consequently provided to the Council, particularly to understand whether the discharge is carbon rich, and could (depending on seepage amounts) affect groundwater redox conditions beneath the wetland.*

Applicant's Response:

Refer to responses to Questions 5(a) to (d), which confirm that:

- The proposed liner permeability criteria are consistent with established New Zealand and international practice for containment systems. Synthetic geomembrane liners (e.g. HDPE or PVC) are widely recognised as effectively impermeable barriers, with hydraulic conductivity typically in the range of 10^{-12} to 10^{-15} m/s. These materials are routinely used in engineered containment systems (e.g. landfills, wastewater ponds) to achieve near-zero seepage, provided they are correctly installed and quality-assured.

- Based on the constructed wetland design and the use of a synthetic geomembrane, the applicant is of the view that the use of a constructed wetland system to “polish” the wastewater discharge, does not fall within the category of “discharge to land” (i.e. the area within the constructed wetland).
- Based on bore data investigations, it is confirmed that the construction phase, nor the on-going operation of the wetland will have any adverse effects on the groundwater present below the site.

Question 6: Air discharge

- Has the Applicant compared the discharges authorised by the existing air discharge consent with the proposed discharges associated with the torrefaction process? If so, please provide that assessment. Following that assessment does the Applicant maintain that the future air consent pathway can be achieved by way of variation rather than by a new consent.*
- In Technical Memo 1 and the Air Matters memo, what are the final air emission sources associated with the torrefaction process, including the wood chip drier, heat plant, hot water heater, Torr Gas burner and any discharge points? How does this fit under the existing consent and identify any changes between the two.*
- At page 3 of the Air Matters memo, what technical work remains outstanding, including whether dispersion modelling has been completed or is still to be done?*
- Please explain the basis on which the Applicant says the future air consent pathway does not affect the completeness of the wider project now before Council and provide an assessment supporting that position.*

Applicant's Response:

- **Attachment 1** illustrates the Te Ara Hiko Torrefaction Process Diagram. It shows the inputs, process engineering matters, air emission sources and outputs associated with the proposal.
- Technical Memo 7 included in the revised application package contains a letter from the applicant's air quality expert, which outlines broadly what air discharges are authorised under the approved Resource Consent APP-2002010157.06. It also explains the expected emissions to air from the revised proposal.
- Technical Memo 7 confirms that “Based on the initial review of the change in onsite activities, Air Matters considers that emissions to air will be comparable nature and scale to those already authorised under Resource Consent APP-2002010157.06”.

- It is acknowledged that the revised application will either require a variation to the approved Resource Consent APP-2002010157.06 or a new air discharge consent. This decision will be informed by the future air dispersion modelling for the revised proposal, which has not been undertaken at this stage.
- However, the preliminary assessment of the applicant's air quality specialist is that the overall effects are likely to remain within the consented envelope of effects:
 - Decrease in particulate emissions as a result of the advanced filtration systems.
 - Minimal change to combustion gas emissions given the modern design and efficiency of the proposed combustion equipment.
- It is considered that the likely air discharges from the proposed process are well understood, and in light of the above assessment from the applicant's air quality specialist, a variation to the existing air discharge consent or a new air discharge consent will not materially impact the revised wastewater discharge consent.

d. Has any greenhouse gas assessment been prepared, noting that the Planning Report at pages 12-13 and the Air Matters memo at pages 1-3 do not appear to contain a quantified greenhouse gas assessment?

Applicant's Response:

- The National Policy Statement for Green House Gas Emissions (NPS-GHG) and National Environmental Standards for Greenhouse Gas Emissions from Industrial Process Heat (NES-GHG) seek to reduce greenhouse gas emissions from fossil fuel-fired industrial heat devices.
- The Te Ara Hiko Torrefaction Process Diagram shown in **Attachment 1** confirms that that proposal utilises biomass fired industrial heat devices.
- As the proposal does not include fossil fuel devices, an assessment against the NPS-GHG framework, or the identification of consent triggers under the NES-GHG is not required.
- The proposal aligns with the NPS-GHG, as the use of biomass as an energy source contributes to achieving the overall objective to reducing emissions from greenhouse gases from fossil fuel fired industrial heat devices.

Question 7: Air Discharge / Wastewater Discharge interaction

- a. What assumptions (e.g. wood composition, torrefaction process conditions, condenser temperature, etc) have been made about the partitioning of contaminants from the torrefaction and hot water boiler flue gas into the gas phase and condensate?*
- b. What is the sensitivity of the discharge composition to these assumptions?*

Applicant's Response:

- Refer to response to Question 1(c).
- We have not assumed or calculated partitioning, as the assessment of effects is based on using actual condensate sample data from a comparable biomass boiler with the same flue gas treatment system. We consider this to be a more accurate representation of the wastewater composition than relying on theoretical assumptions.
- As the discharge composition is from actual condensate sample data, it is not reliant on assumptions regarding the inputs or processes involved, therefore, there are “no sensitivities” of relevance around the discharge composition.

c. Do changes in the management of the air discharges impact the condensate quality?

- Refer to response to Question 1(c).

Question 8. Staging

- a. The revised proposal includes a new building for the torrefaction plant at the northern end of the site. As currently understood, the wastewater discharge cannot be produced unless the torrefaction building is constructed and the torrefaction plant is operational. Please explain where the earthworks, dewatering, and related site works for the torrefaction building sit within the overall project sequencing. The response should explain how those works relate to the current wastewater discharge proposal, whether any physical works for the torrefaction building must occur before the proposed wastewater discharge can commence, whether those works are intended to be subject to a later application. If staging is proposed please explain how that staging aligns with the five-year term sought for the wastewater discharge consent.*

Applicant's Response:

- **Attachment 1** contains the flow diagram of the activities that form part of the overall operation of the facility Torrefaction Process Diagram.
- Technical Report 1 – Torrefaction Technical Memo explains that the facilities to service the front and back end of the process are already in place on the site (i.e. the site has a long yard, debarking, chipping, storage facilities and an existing rail spur).
- The middle part of the process (being the process engineering aspect) would require the construction of a new building to house the infrastructure associated with the torrefaction process (the Plant Building). The construction of the new Plant Building is necessary to enable the operation of the overall torrefaction facility.
- Once the new Plant Building is completed, and the torrefaction equipment has been installed and commissioned, then the proposed wastewater discharge will be initiated.

- The construction of the Plant Building is likely to trigger both regional and district earthworks consents. The future earthworks resource consent will address all relevant earthworks effects and will only be implemented after it is approved by the regional and district councils.
- Section 5.3 of the Planning Report details the likely triggers of consent under the Ruapehu District Plan. Noting that the WPI site already contains an established built industrial character, and the proposal maintains a clear functional relationship to the Rural Zone through the processing of plantation forestry resources, these resource consents approvals are not deemed to be “high risk” consents but rather are highly likely to be granted.
- The earthworks for the construction of the Plant Building does not have a material direct impact on the proposed wastewater discharge consent. The earthworks consent for the Plant Building will be assessed on its own merit and its potential effects are materially different to the wastewater discharge consent (i.e. construction effects arising from earthwork activity versus wastewater discharge effects on surface water quality).
- The applicant would like the wastewater discharge consent to commence on the date of the first discharge, which at this time is forecasted to be 2029.

b. The revised package does not presently address any earthworks, dewatering, or related site works required for the torrefaction building. Based on the site visit, separate consent may be required for land disturbance under Rule LF-LAND-R6 as a controlled activity, any associated taking, use, diversion or discharge of water during dewatering, and any discharge of contaminated soil, contaminated water, or contaminated soil-laden water under Rule LF-LW-R38 as a discretionary activity. Please confirm what consents may be required for those works and when the Applicant intends to seek them.

Applicant's Response:

- Refer to response to Question 8(a).

Question 9: Consent Term

a. Please confirm the consent term now sought for the revised proposal.

Applicant's Response:

The applicant would like the wastewater discharge consent to commence on the date of the first discharge, which at this time is forecasted to be 2029.

b. If a five-year term is still sought, please explain how that term aligns with the proposed staging of the torrefaction building, wetland construction, commissioning, and commencement of the discharge.

Applicant's Response:

- Refer to response to Question 8(a).

- The applicant requests the wastewater discharge consent to commence on the date of the first discharge, which at this time is forecasted to be 2029.

Question 10. Conditions

- a. *Please confirm whether the Applicant proposes to retain the conditions of the existing consent, or whether revised conditions are now sought for the condensate discharge.*

Applicant's Response:

- Revised conditions will be required to appropriately align with the significantly improved wastewater quality and reduced volume.

Question 11. Scope

- a. *The application as lodged and publicly notified sought to roll over the existing consent for the discharge of treated pulp wastewater for 5 years on the same conditions. Having regard to the revised proposal (including any revisions to the consent term and conditions sought), please explain how the Applicant considers the revised proposal to fall within the scope of the application as lodged and notified.*

Applicant's Response:

- Refer to Attachment A to the Planning Memo filed on 13 March 2026. The comprehensive legal memorandum from Berry Simons specifically addressing this question, including that section 124 is no longer relevant to the revised proposal. All amendments made to the application, including any updated conditions will serve to significantly improve the discharge wastewater quality (as compared from the initial proposal) and respond to, and address, submitter queries and concerns (including Ngāti Rangi).

Question 12. Consultation update

- a. *Given the statutory acknowledgement framework and Te Waiū-o-Te-Ika context applying to Ngāti Rangi, please provide any specific comment or feedback received from Ngāti Rangi on the revised proposal, including the constructed wetland, discharge pathway, and any associated effects on freshwater, groundwater, cultural values, and wetland values. If no specific comment has been sought or received from Ngāti Rangi on the revised proposal, please confirm this and outline whether the Applicant intends to seek further comment from Ngāti Rangi.*

Applicant's Response:

- The applicant has had multiple meetings with Ngāti Rangi representatives to present and discuss the revised proposal (including the inclusion of the constructed wetland as requested in the submission from Ngāti Rangi submission). The revised proposal was positively received in the meetings. No written feedback has been received.

- Ngāti Rangi was provided the revised application. This section 92 response will also be shared with Ngāti Rangi.

b. Please identify any specific comment or feedback received from any other submitter on the revised proposal, including whether any further engagement with submitters is proposed in relation to the revised proposal.

Applicant's Response:

- The applicant has met with the representatives for Whangaehu Marae, Ngā Wairiki ki Uta Charitable Trust and Te Rūnanga o Ngā Wairiki Ngāti Apa to discuss the revised proposal.
- A meeting has been scheduled with the representatives of the Federated Mountain Clubs of NZ and Ruahine White Water Club in early July.

Question 13: Outstanding Application Forms and Supporting Material

a. Please provide a completed Form 9 application for the earthworks consent now identified being sought, including the activity description, site details, owner / occupier details, consent type, and all relevant supporting information required under section 88 and Schedule 4 of the Resource Management Act 1991. This should include other activities that may be permitted or require resource consent at the site.

Applicant's Response:

- Refer to **Attachment 7** - Completed Form 9.

b. Should your responses to questions in this letter identify that further consents are required, please ensure that the Form 9 and all relevant supporting information required under section 88 and Schedule 4 of the Resource Management Act 1991 are provided.

Applicant's Response:

- No further consent triggers are identified.

Question 14: Additional Resource Consents

- a. Based on the revised proposal, the following activities have been identified as potentially requiring additional resource consents:*
- i. any additional discharge consent(s) associated with the wastewater discharging through the base of the proposed wetland / groundwater pathway.*
 - ii. any additional discharge consent(s) associated with contaminated soil, contaminated water, or contaminated soil-laden water under the One Plan; and*
 - iii. any consent(s) required for earthworks, dewatering, discharges, or other site works associated with construction of the torrefaction building; and*

iv. *The future air discharge consent pathway, which is not presently before Council and, on the material lodged, may require a new consent rather than a variation.*

For each of the above, please confirm whether the Applicant agrees a separate consent is required, and if not, the reasons for that position.

Applicant's Response:

- Refer to responses to the previous questions, and no additional resource consent triggers have been identified.

b. *Please then provide a complete schedule of all consents required to implement the revised proposal in the form of a table addressing the following for each consent:*

- whether or not consent is sought as part of the current application;*
- if not, the reasons and the anticipated timing for lodgement of the future application;*
- what further information, design details, technical assessment, rule analysis, or process steps are still required to enable assessment of that consent.*

Applicant's Response

Refer to the response to Question 8 and Section 5.3 of the Planning Report:

- Wastewater discharge – current application
- Earthworks to construct a wetland – current application
- Air discharge – it may be a variation or a new application and does not form part of this application. It will be applied for in due course.
- Earthworks consent to enable the construction of the Plant Building (not part of this application, to be applied in due course).