Beachlands South Fast-track

Auckland Council Specialist Memo

Annexure M:

Wastewater

Chris Garton

05 October 2026

1.0 APPLICATION DESCRIPTION

Application and property details

Fast-Track project name:	Beachlands South
Fast-Track application number:	EPA reference: FTAA-2606-1256 Council reference: BUN60467962

2.0 Technical Specialist Memo - Wastewater

To:	Brooke Dales – Lead Planner Adonica Giborees – Principal Project Lead
From:	Christopher Garton – Senior Wastewater Specialist
Qualifications & Relevant Experience:	I hold the qualifications of: Master of Science in Environmental Science, Batchelor of Science (Honours) in Geography, Graduate Diploma in Environmental Science, Batchelor of Arts in Philosophy and Politics. I have 1 and a half years of experience as a Senior Wastewater Specialist at Auckland Council and a further 10 years of relevant expertise regarding wastewater including: treatment processes, environment monitoring at wastewater treatment plants, odour sampling and analysis at multiple wastewater treatment plants, resource consent compliance for wastewater, and the environmental and cultural interactions between municipal wastewater infrastructure and the public. This experience was gained in multiple roles while working at Watercare Services Limited. I have prepared expert evidence and technical assessments for resource consent applications and have appeared as an expert witness before consent authorities.
Preparation in Accordance with the Code of Conduct:	I confirm that I have read the Environment Court Practice Note 2023 – Code of Conduct for Expert Witnesses and have complied with it in the preparation of this memorandum. I also agree to follow the Code when participating in any subsequent processes, such as expert conferencing, directed by the Panel. I confirm that the opinions I have expressed are within my area of expertise and are my own, except where I have stated that I am relying on the work or evidence of others, which I have specified.

Signature:	
Date:	5/10/2026

3.0 Documents Reviewed

The following documents have been reviewed in preparing this memorandum:

- Beachlands South Fast-Track Substantive Application Wastewater Concept Design and Assessment: Beachlands South, Beachlands, Auckland. Prepared by GWE Consulting Engineers. Version 2. 06/2026.
- Beachlands South Development Integrated Wastewater Servicing Strategy and Discahrge Assessment Report. Rev 2. By Raath and Associates. 20/7/2026.
- Draft Proposed Conditions: Beachlands South Fast Track Application. 26/06/2026.
- Beachlands South: Fast-Track Approval Substantive Application: Assessment of Environmental Effects and Statutory Analaysis. Prepared by Unio Environmental. 26/6/2026.
- Beachlands South – Rules Assessment. Prepared by Unio Environmental. 26/6/2026.
- Beachlands South Fast Track: Infrastructure Report: Prepared for Beachlands South Limited Partnership. Prepared by Harrison Grierson. 24/6/2026.
- Attach 0B2 s67 Response Table. No author. No date.

4.0 Additional Reasons for Consent Not included in AEE / Incorrect Reasons for Consent

- N/A. The applicant has applied appropriately for a wastewater discharge consent for the application to discharge treated wastewater to land onsite.

5.0 Specialist Assessment

5.1 Existing Environment

- A description of the site and the location of the wastewater discharge to land have been provided in the wastewater report prepared by GWE and dated 06/2026. The description is satisfactory.
- From the applicant's soil investigation, the soils in the proposed disposal area are described as being category 5/6 as per Table 5.1 of TP58 with approximately 100 to 240 mm of topsoil. This is typical for this part of the Auckland Region.

5.2 Proposed Wastewater Disposal System (to land for Stage 1)

- The applicant has proposed to discharge tertiary treated wastewater to surface pressure compensating dripper irrigation (PCDI) at a maximum rate of 3mm/day for Stage 1 of the development. This discharge rate accords with the design requirements of Table 9.2 of TP58 which allows for up to 4mm/day for category 5 soils, and up to 3mm/day for category 6 soils. As the soils are category 5/6 then it is appropriate for the applicant to discharge up to the conservative rate of 3mm/day.
- The disposal will only come close to reaching 3mm/day limit towards the end of Stage 1 when the disposal volume is close to the discharge limit.
- The applicant has proposed a 50% reserve field which accords with minimum design requirement of surface laid PCDI lines as per Table 5.3 of TP58.
- The primary field will be 150,000m^2 and the reserve field 75,000m^2
- For tertiary treated wastewater, the disposal field needs to be at least 10m away from surface water features, unless the slope angle is greater than 10˚ and then the distance needs to be greater relative to the angle of the slope up to a maximum of an additional 10m as per Note 3 of Table 5.2 of TP58. The applicant has demonstrated that the disposal field is mostly at least 10m away from surface water features. There is one small section that appears to be closer than the required 10m. This error can be easily corrected as there is plenty of room for the disposal field to be reshaped to make it compliant. A screen shot of the section appears to be too close is provided below (Figure 1). I consider this a minor infraction that can easily be fixed with an amended design.



Figure 1: Taken from plan 'Wastewater Plan' Drawing number 500, Rev 1." GWE.

In summary: The Proposed Wastewater disposal to land system has been designed well and in accordance with the design requirements of TP58. As such, I support the proposed disposal to land for the Stage 1 wastewater flows.

5.3 Disposal to the Coastal Marine Area (Stage 2)

I have not assessed the proposed disposal to the coastal marine area for Stage 2 of the development as the marine environment is not my area of expertise.

5.4 Wastewater Treatment System

The applicant has calculated the design capacity of the required wastewater treatment system using Watercare's Code of Practice for Land Development and Subdivision document. This is the appropriate method to use for the size of the subdivision compared to using TP58. How the applicant has calculated the expected total wastewater volumes is correct.

The applicant has proposed that the pump stations will have 24 hours storage capacity built into their design. Although the designs have not been created yet, this principle is appropriate to account for situations resulting in short term unexpected loss of electricity or some other emergency. A principle design feature of wastewater treatment plants is 24 hours of storage capacity. The applicant has proposed a 100,000 litre buffer storage tank at the treatment plant to add additional storage capacity.

The applicant has proposed to use the 'Combined Works' treatment system as described by Raath and Associates. This is a modular wastewater treatment system and each module will be designed to treat up to 450,000 litres of sewage per day. Stage 1 will include a single modular train, where as stage 2 will require two treatment trains operating in parallel. It is understood that 3 treatment trains will ultimately be required by the end of Stage 2.

The combined works wastewater treatment system operates using conventional biological wastewater methodology of utilising aerobic and anaerobic environments to achieve nutrient reduction. In principle the wastewater treatment system is designed appropriately, but there are no examples of this system operating in New Zealand to date. The applicant provided water quality monitoring data as part of this application from a combined works system in South Africa, and another location. But the original documentation is not in English and is impossible to verify.

The combined works system is Russian designed. There is no problem with this origin as the science of wastewater treatment is universal. However, it is important that the components for this treatment system are not sourced from Russia but can be manufactured in New Zealand or by other countries with favourable trade relations to New Zealand. Having a secure supply chain is critical for any wastewater treatment system. The applicant has not stated where the parts for this system will be sourced from.

The proposed treated wastewater standards in condition 311 are appropriate for the discharge of tertiary treated effluent to land. I will not comment on the water quality standards proposed for condition 313 as these are to the marine environment and this is not my area of expertise.

5.5 Wastewater Network

The construction of the wastewater network and pumpstations is not my area of expertise and as such I have not assessed these.

5.6 Odour

In the Raath and Associates Report there is a section on odour, but it is stated that the design of appropriate odour treatment systems will occur at a detailed design stage of the application. It is suggested that ozone treatment and/or activated carbon treatment could be used. Although activated carbon can be used very effectively to treat odours from wastewater treatment plants, such treatment is uncommon in municipal treatment plants due to the high ongoing operational costs of replacing the activated carbon. Most municipal wastewater treatment plants treat odours via bark-based odour beds and/or rely on extended distances to dilute odours.

I have strong concerns that due to the close proximity of the proposed treatment plant to the proposed dwellings in this development, wastewater related odours will reach residents of these neighbouring dwelling and lead to complaints. The inlet screening waste and sludge form the treatment plant will be removed via trucks. From experience I know that the inlet screening process generates high levels of odour and truck movements of this material to landfill will allow these odours to escape. Odours from sludge can be managed if they are contained in a sucker truck, but this option is not usually available for screened waste.

Raath and Associates have identified the inlet screening section as one of several areas that can be expected to generate odours but are relying heavily on the treatment process and enclosed nature of the facility as reasons for why they do not expect 'significant adverse air quality effects.'

I have much experience managing odours from municipal wastewater treatment plants and I know that even minor odours can cause issues if they reach neighbouring property boundaries. Often neighbours can become hyper-sensitised to specific odours that they recognise as being from a neighbouring wastewater treatment facility and this can cause them much distress.

I am concerned that the applicant has not fully appreciated the close proximity of the neighbouring dwellings and therefore has not sufficiently given thought to the level of odour treatment that will be required such that odours air does not cross the property boundary into the neighbouring properties. As there are no 'Combined Works' treatment systems in New Zealand to date, it is hard to assess the voracity of the applicant's argument that this type of system will generate few odours.

5.7 Sustainable Finance

One of the main issues for community wastewater treatment plants in the Auckland Region relate to sustainable financing to ensure that the network and treatment system are well maintained. Many systems fail due to a lack of routine maintenance and an absence of available funding for emergency repairs. Every wastewater system requires maintenance and repair work to be carried out in a timely

manner or else small problems can very quickly escalate. Having a sustainable financial system to pay for the ongoing wastewater costs is critical to maintain a high level of wastewater treatment.

The applicant has not included any information regarding the ongoing financial arrangements for maintaining the proposed wastewater system. I would expect the financial arrangements to be a condition of consent and am concerned that this is not the case. In the applicant's defence, I think they have not yet got to that level of detail in their planning. However, as this is one of the most critical aspects of the maintaining a sustainable and functional wastewater system, I am concerned that setting up the financial framework for this system has not been proposed as a condition of consent.

5.8 Monitoring

The applicant has proposed 3 monthly wastewater quality monitoring (GWE 2026: Wastewater Report). This is an inadequate frequency given the size of the proposal and the discharge to the coastal marine environment in stage 2.

This application should include the following as conditions of consent:

- Weekly wastewater quality monitoring;
- Daily water flow monitoring via a telemetered system;
- Annual reporting to Auckland Council;
- Audits every 5 years.

5.9 Emergency Discharge

The applicant has not provided information relating to any emergency discharges. These could occur if there was an extended period without electricity and therefore the pump stations would eventually overflow. In this unlikely scenario wastewater will need a discharge pathway and the applicant should apply for a consent to discharge untreated wastewater to the environment in the case of an emergency. Municipal wastewater treatment plants and networks have this emergency option because they cannot control the flow of wastewater from entering their network. As this is a large-scale project, the applicant should apply for the ability to discharge untreated wastewater in an emergency.

6.0 Section 67 Information Gap

Information gap	Nature of deficiency	Decision-making impact	Risk / uncertainty created
1. *Information on parts and servicing for the Combined Works Treatment Plant system*	*Details of whether parts can be sourced within New Zealand or if overseas suppliers are relied upon.*	*Cannot accurately assess the long-term risk in operating a 'Combined Works' treatment plant and whether replacement parts will be readily available.*	*Potential for delays to repairs if parts need to come from Russia. (Low risk)*
2. *Information on odour mitigation strategy and viable options*	*Details on how wastewater odours will be treated/managed on site so they do not cause a public nuisance.*	*Cannot accurately assess the social impact on members of the public or whether there is adequate land available to sustainably treat odours.*	*Potential for public complaints related to odour due to the close proximity of the treatment plant to dwellings. (Medium risk)*
3. *Sustainable financial design to maintain the wastewater network, treatment, and disposal systems*	*Details for how wastewater treatment will be financed.*	*Cannot accurately assess the long-term viability/sustainability of a large privately owned wastewater network, treatment and disposal systems.*	*Potential for reduced maintenance and higher risk of wastewater equipment failure leading to a higher risk to the receiving environment. (Medium risk)*
4. *Emergency Discharge consent application*	*Details for how untreated wastewater will be discharged in an emergency event.*	*Cannot accurately assess the environmental impact of where untreated wastewater will go in the event of an emergency*	*Potential for untreated wastewater to flow on to private property. (Medium risk)*

7.0 Recommendation

I recommend that the applicant consider and provide further details related to:

- the supply of parts for the 'Combined Works' treatment system to demonstrate a secure and stable supply chain;
- a comprehensive odour mitigation strategy;

- details on how the wastewater system will be owned, operated, and made financially stable; and
- details of where wastewater will flow in the event of an extended period of electricity (or other) failure in the network or at the wastewater treatment plant.

The stage 1 application to discharge up to 450,000 litres of tertiary treated wastewater to land onsite per day has been designed in accordance with TP58. Aside from a minor infringement (which should be easily fixed) this aspect (discharge to land) of their application is sound and I can support it.

I do not yet support the full application due to the issues raised in this technical memorandum. However, the issues I have raised most likely solvable and it can be expected that the applicant could resolve them.

I cannot support or otherwise Stage 2 of the application as this involves a discharge to the coastal marine area. This is not my area of expertise and therefore I do not offer an opinion either way regarding the discharge.