Beachlands South Fast-track

Auckland Council Specialist Memo

Annexure T:

Air Quality

Marie Meredith

07 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 (DIS60467969)

2.0 Technical Specialist Memo – Air Quality

To:	Brooke Dales – Lead Planner Adonica Giborees – Principal Project Lead
From:	Marie Meredith
Qualifications & Relevant Experience:	I hold the qualifications of Bachelor of Environmental Science, Master of Science in Environmental Science, and have ten years' experience working in environmental science including four and a half in air quality and contaminated land. I am a full member of the Australasian Land and Groundwater Association. I have prepared technical assessments for resource consent applications, notices of requirement for designation and fast-track applications.
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 (**Code**), 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:	7 October 2026

3.0 Executive Summary / Principal Issues

This memo reviews air discharge matters associated with the proposed wastewater treatment plant (WWTP) and concludes that discharges to air are able to be sufficiently managed provided the protocols of an approved AQMP; and draft and recommended conditions are adhered to.

The following sections summarise the wastewater treatment strategy, primary odour-generating sources; and proposed mitigation and management measures. Conclusions and recommendations in relation to Chapter E14 Air Quality of the Auckland Unitary Plan (AUP) are provided, including a recommendation for an additional condition of consent requiring odour surveys.

4.0 Documents Reviewed

The following documents have been reviewed in preparing this memorandum:

- *Beachlands South – Fast-track Approval Substantive Application, Assessment of Environmental Effects and Statutory Analysis* (AEE), by UNIO, 26-Jun-2026.
- *110 Jack Lachland Drive & 620, 712, 758 and 770 Whitford-Maraetai Road, Beachlands – Technical assessment of discharges to air from proposed wastewater treatment plant* (Air Quality Assessment – AQA) by Air Matters Ltd, 17-Jul-2026.
- *Beachlands South Fast Track – Wastewater Concept Design and Assessment* (WW assessment) by GWE, Jun-2026 v2.
- *Draft Proposed Conditions – Beachlands South Fast Track Application*, 26-Jun-2026.
- *Beachlands South – Rules Assessment,* UNIO, 26-Jun-2026.
- *Beachlands South – s67 Request for further information*, Air Matters Ltd, 10-Sept-2026.

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

There are no additional reasons for consent for air quality not included in the AEE.

6.0 Specialist Assessment

The AEE and AQA identify that the proposed treatment of municipal wastewater is a **Discretionary Activity** in all air quality areas under **Rule E14.4.1(A163),** and that the use of emergency generators for the purpose of generating electricity during mains power unavailability is a **Permitted Activity** under **Rule E14.4.1(A48)**.

The applicant assesses the environmental effects of the proposal in Section 8 of the AEE and Section 7 of the AQA. The assessment identifies odour emissions, particularly during abnormal or unplanned operating conditions, as the primary air quality effect associated with the proposed WWTP activity.

Wastewater assessment

Although primarily a wastewater assessment, the report provides relevant information on potential odour emissions from the proposed WWTP.

The wastewater servicing strategy incorporates a centralised WWTP using Combined Works (CW) technology, which consolidates wastewater treatment within a fully enclosed structure. Potential odour emissions may arise from raw wastewater handling, inlet screening, grit removal, sludge stabilisation, sludge storage, and sludge dewatering activities. Conventional high-odour processes such as open aeration ponds, oxidation ponds and sludge drying beds are not proposed. Treatment occurs within enclosed reactors and treatment buildings. The assessment concludes that odour is not anticipated under normal operating conditions.

The WWTP is proposed to serve the Beachlands South development including approximately 2,000 residential dwellings, two schools, commercial and employment-generating land-uses, hotel and community facilities. The plant will be developed in two stages. Stage 1 will be with a single CW treatment train/module, and a capacity of 450 m^3 per day average dry weather flow (ADWF) to service approximately 400 – 500 dwellings, schools and commercial development. Stage 2 will be an expansion to ultimate treatment capacity of approximately 1,368 – 1,383 m^3 per day ADWF through installation of additional treatment modules, and long-term marine outfall discharge.

The wastewater strategy incorporates several controls to minimise odour emissions:

- Fully enclosed CW treatment process, fine-bubble aeration to maintain aerobic conditions, extended sludge age and endogenous respiration to reduce sludge production and odour potential;
- 24-hour emergency storage at pump stations, 100,000 L emergency/balancing storage tank, SCADA monitoring, alarms and telemetry, backup generator to maintain critical treatment and ventilation systems during power outages;
- Routine operation and maintenance by specialist operators;
- Air extraction and odour treatment systems to be incorporated during detailed design; and
- Monitoring, adaptive management and contingency procedures for process upset conditions.

Even though the wastewater design concept is yet to be finalised, the report concludes that subject to implementation of the above measures, adverse effects associated with air emissions are expected to be no more than minor.

The Air Quality Assessment

The AQA identifies odour as the primary air contaminant associated with the proposed WWTP. Odour generation may occur when wastewater becomes septic or anaerobic, producing compounds such as hydrogen sulphide. Dust associated with WWTP construction is acknowledged but assessed separately under the wider project earthworks assessment. The AQA focuses on operational odour effects, noting negligible emissions of PM_{10}, SO_2, VOCs, CO and NOx apart from minor emissions from emergency generators.

Key odour-generating sources identified are:

- Inlet screening, grit removal, biological treatment zones, biofilter treatment areas, sludge stabilisation processes, sludge storage and transfer, screenings handling and disposal and emergency storage during upset conditions.

The AQA is based on the same WWTP design capacity as the wastewater (WW) assessment:

- Stage 1: 450 m^3 per day treatment module.
- Stage 2: expansion to approximately 1,383 m^3 per day.
- Servicing approximately 2,000 dwellings, plus schools, hotel and community facilities.

It is noted that mitigation and management controls are yet to be finalised and will be finalised based on the final WW design. Mitigation and management controls are to include:

- Enclosed treatment design – all major wastewater treatment processes are enclosed with CW structures; no open aeration ponds or sludge drying beds are proposed.
- Ventilation and Odour Capture – extraction of air from enclosed odour-generating areas, treatment of extracted air prior to discharge, potential treatment technologies include ozone treatment, activated carbon filtration and equivalent BPO odour-control systems.
- Process controls – maintenance of aerobic conditions, fine-bubble oxygen diffusion, continuous process monitoring, redundancy of critical equipment and robust maintenance programmes.
- Emergency Controls – 24-hour storage at pump stations, 100,000 L emergency storage tank, recommended back-up generators to maintain ventilation and treatment systems.
- Air Quality Management Plan (AQMP) – recommended AQMP to include odour monitoring, complaints management, maintenance programmes, contingency procedures, emergency response procedures, odour control equipment control parameters, and staff responsibilities.

The AQA concludes:

- The enclosed WWTP design represents the Best Practicable Option (BPO).
- Offensive or objectionable odour beyond the site boundary is not expected under normal operations, potential effects are expected to be less than minor provided the proposed mitigation measures are implemented and maintained.
- The closest future sensitive receptors may be within 85-200 m of the WWTP, making effective odour management critical.

Additional information Request

Further information provided by the applicant under section 67 included:

- Confirmation the FIDOL assessment and separation distance assessment were undertaken assuming full capacity operation at 1,283 m^3 per day (i.e. inclusive of Stage 2).
- Confirmation that backup generators are proposed specifically to maintain odour control systems.

- Additional detail regarding emergency storage provisions and confirmation that an Emergency Response Plan will be prepared.
- Proposed odour survey conditions.

Conclusion

The AEE concludes that the WWTP is not anticipated to generate significant adverse air discharge or odour effects, with appropriate mitigation and operational measures proposed to avoid impacts on the surrounding community. Air quality effects are considered acceptable. It is noted that there are no comparable plants (modular design) operating in New Zealand, thus this is a novel concept.

I generally agree with the applicant's conclusion that the proposed WWTP is unlikely to result in significant adverse air quality or odour effects. The s67 additional information confirms that the assessment has been undertaken for the ultimate design capacity of the WWTP, backup generators are proposed to maintain critical odour control systems, emergency storage capacity is incorporated to manage abnormal operating conditions, and post-commissioning odour surveys are proposed to verify performance. These measures provide additional confidence that odour effects can be effectively managed.

Notwithstanding the above, the assessment remains based on a concept-level design and does not include quantitative odour dispersion modelling or detailed odour control system design information. Accordingly, my conclusion that adverse effects are likely to be no more than minor is contingent upon implementation of the proposed odour control measures, preparation and certification of an AQMP and Emergency Response Plan, and compliance with conditions of consent requiring post-commissioning odour surveys and ongoing management of odour emissions. On balance, I consider the actual and potential air quality effects to be no more than minor.

7.0 Section 67 Information Gap

I consider the applicant’s response to the section 67 request for further information is satisfactory and there are no section 67 information gaps.

8.0 Recommendation

Overall, I consider that air discharges from the proposed wastewater treatment plant are able to be sufficiently managed if the protocols of an approved AQMP; and draft and recommended conditions are adhered to.

9.0 Proposed Conditions

I have reviewed the proposed draft conditions provided by the applicant and consider that they are similar to our standard conditions.

In section 8 of the AQA, it is recommended that "*consent conditions incorporate routine odour surveys for an initial period following commissioning to provide confirmation that the employed controls are effective. These surveys should be repeated before and after any future Stage 2 expansion and should be undertaken during periods of low winds or calm conditions, particularly during spring and summer months"*. This has not been incorporated into the applicant's draft conditions.

I consider the addition of such a condition of consent is important given that several residential dwellings are proposed to be situated within the 200 m screening distance (and the closest one is to be approximately 85 m away). In response to the request for further information, the applicant has proposed the below condition of consent relating to odour surveys:

Field Odour Surveys

a) The consent holder must engage a Suitably Qualified and Experienced Person (SQEP) to undertake a field odour survey within 6 months of the commissioning of the operation and within 6 months of the Stage 2 becoming operative. The purpose is to establish the extent of odour effects beyond the site boundary (including the potential for chronic and acute effects).
b) The odour survey must be conducted in general accordance with guidance set out in the Ministry for the Environment Good Practice Guide for Assessing and Managing Odour.
c) The SQEP must prepare a report for the consent holder detailing their findings and recommendations. The consent holder must submit the SQEP's report to the Auckland Council within 1 month of receipt and not later than three months following completion of the survey.

Advice Note: The intent of this condition is for field odour surveys to take place in adjacent properties as well as public land, where approval for access can be sought from landowners and/or occupiers.

I recommend that the conditions of consent be amended to include the applicant's proposed condition of consent above.