Beachlands South Fast-track

Auckland Council Specialist Memo

Annexure O:

Water Supply / Bore

Louwrens Le Roux

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 – Groundwater Take

To:	Brooke Dales – Lead Planner Adonica Giborees – Principal Project Lead
From:	Louwrens Le Roux, Senior Specialist – Coastal and Water Allocation, Specialist Unit, Planning & Resource Consents
Qualifications & Relevant Experience:	I hold the qualification(s) of: **Bachelor of Science in Environmental Science & Bachelor of Science Honours in Hydrogeology and** have **12** years of experience in **the relevant field of Hydrogeology.** I have prepared expert evidence and technical assessments for resource consent applications 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:	05/10/2026

3.0 Executive Summary / Principal Issues

The proposed Beachlands South development seeks consent to provide a potable water supply for a large scale residential development and for irrigation of a nine hole golf course in Beachlands, Auckland.

The projected water demand for the development is 1,251m³/day, which is planned to be supplied from the existing Formosa Bore (ID 20758), which has an active water take (WAT60276020), a proposed new groundwater take from recently consented Bore 620 (Bore ID 31755), and water supplied by local water services provider Pine Harbour Living Limited (PHILL).

Based on the information provided and calculations done in relation to the water demand for the site, the applicant has shown that their water demand is reasonable for the scale of the proposed development. Furthermore, there is sufficient water available in the Beachlands Greywacke / Waitemata aquifer system to be allocated for this take.

In terms of the existing water take WAT60276020, from the Formosa Bore, I conclude that it can continue at its currently consented allocation, as the volume sought is unchanged and is supported by historical bore performance. However, there is currently insufficient information to confirm that the proposed Bore ID 31755 can sustainably produce the proposed allocation of 371 m³/day. No aquifer testing has been undertaken to demonstrate bore performance, sustainable yield, or the effects of pumping on the surrounding aquifer system (as bore ID 31755 is yet to be drilled). Thus, there is insufficient available information to verify the sustainable yield and capacity of bore ID 31755.

Several information gaps relating to potential adverse effects of the take on the receiving environment have also been identified, namely:

- The potential interference effects of the take on neighbouring groundwater users have not been assessed. At least 21 bores have been identified within 1 km of production bore ID 31755.
- Limited information has been provided regarding groundwater quality and the potential risk of saline intrusion associated with the proposed abstraction.

These uncertainties prevent a complete assessment of the potential effects of the groundwater take on both the aquifer and surrounding users.

Overall, the proposed groundwater take is not expected to result in significant adverse effects on aquifer recharge, surface water features, or consolidation settlement. However, the absence of aquifer pumping test results, interference assessments, groundwater quality information and saline intrusion investigations, I cannot conclude with confidence that the proposed groundwater abstraction can sustainably provide the requested water supply or in doing so not lead to adverse effects on neighbouring groundwater users or the wider aquifer system.

Therefore, I do not have enough information to currently support the proposed groundwater take application at this stage when considering council's policies under E2.3. I have, however, included condition of consent to try and alleviate the uncertainties identified, should the consent be granted.

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*", prepared by Unio Environmental, dated 24 September 2026, Reference 000005.
- *Draft Proposed Conditions – Beachlands South Fast Track Application*, dated 24 September 2026.
- *Beachlands South Fast Track - Infrastructure Report*, prepared by Harrison Grierson, dated 24 June 2026, Document REP001-A2515591.00.cjm
- *Beachlands South Fast-Track Substantive Application Water Supply Concept - Beachlands South, Beachlands Auckland*", prepared by GWE Consulting Engineers, dated June 2026, Version V6, Reference J3021-1
- A Section 67 -Request for Further Information Response document titled "*Attach 0B2 S67 Response Table*", prepared by UNIO Environmental, under the Groundwater take and Bore
- A Section 67 response letter titled "Beachlands South FTAA -2606-1256 – Response to Auckland Council's preliminary groundwater take comments", completed by UNO Environmental, dated 16 October 2026

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

I agree with the applicant's stipulated reasons for consent under rule E6.4.1 (A26) for the two proposed groundwater takes related to this application, these being a replacement take from existing Bore ID 20758 (Formosa Bore), which is currently consented to abstract 300m³/day and 42,000m³/year, and the proposed groundwater take from bore ID 31755 (Bore 620), which seeks to abstract up to 371m³/day and 135,500m³/year.

The applicant has also requested an extension of the lapse date associated with the drilling of bore ID 31755 (Bore 620) under consent LUC60459433. While the application does not specifically identify the relevant statutory basis for this request, an extension of a consent lapse period may be considered under section 125 of the Resource Management Act (RMA). The applicant seeks to extend the lapse date so that it aligns with the lapse duration of five years for the proposed groundwater take from bore ID 31755.

6.0 Specialist Assessment

6.1. Assessment of Water Quantity and the Justification Thereof

The applicant has provided a clear and appropriate assessment of water demand in Sections 3 and 4, and Appendix C of the Water Supply Concept Report (Attachment 11). The applicant has calculated that the proposed development will require approximately 1,136m³/day of water, supplied from:

- 765m³/day from the Pine Harbour Living Limited (PHILL) bulk water supply network;
- 115m³/day from existing consent WAT60276020 (Formosa Bore ID 20758); and
- 371m³/day (135,500m³/year) from the proposed take associated with Bore ID 31755 (620 bore).

The total proposed supply of 1,251m³/day exceeds the projected demand by approximately 10%, providing a reasonable allowance for operational variability, peak demand and future uncertainty. The adopted demand rate of 150L/person/day is considered reasonable for a residential development of this scale and is within the range of 140 to 170 liters per person per day, identified by Watercare as typically used in Auckland. The proposed use of water efficient fixtures and rainwater harvesting may further reduce potable water demand.

While no water use records have been provided for existing consent WAT60276020 since 2014, the applicant has identified a clear and justifiable future use for this allocation. I therefore accept that the proposed demand is generally consistent with the scale and nature of the development.

Initially, the applicant did not provide evidence demonstrating that PHILL was both able and willing to supply the proposed 765 m³/day (279,225 m³/year) required to service the development. In addition, the application lacked sufficient detail regarding the proposed staging of the development, including the timing and sequencing of the various development phases.

These matters were subsequently addressed in the applicant's Section 67 response dated 16 October 2026. The response included evidence confirming that PHILL is willing to supply the development's anticipated water demand of up to 765 m³/day. The applicant also advised that abstraction from ID 31755 will not be required until at least five years after development commences, in this explanation the applicant referenced a map with area highlighted in yellow, which is proposed to be the part of the development that will use water abstracted from the Formosa bore and proposed bore ID 31755.

Overall, I consider the proposed water allocation to be generally reasonable and justified. Based on the information available, the requested allocation does not appear excessive or inefficient, subject to appropriate consent conditions.

However, should the consent be granted, I offer the following comments on consent conditions.

Conditions

I generally agree with the applicant's proposed conditions (Conditions 224-274). However, I recommend:

- Consolidation of the groundwater takes into a single consent;
- Amendments to the Environmental and Water Efficiency Reporting requirements;
- Amendments to the consent duration and expiry provisions, with specific reference to bore ID 31755; and
- Surrender of the existing WAT60276020 consent should a consolidated water take consent be granted.

Additional conditions addressing outstanding environmental effects and information gaps are discussed further in this memo. My recommended conditions are set out in Section 9.0 of this Technical Memorandum.

6.2. Production bore capacity (Policy E2.3.7(g))

Formosa bore (Bore ID 20758)

The applicant does not seek an increase to the existing allocation authorised under consent WAT60276020 (300 m³/day and 42,000 m³/year). Historical airlift and aquifer testing undertaken on the bore indicate that it can supply volumes greater than the proposed abstraction requested by the applicant for this consent. Therefore, I am satisfied that Bore ID 20758 can supply the allocation proposed to be sourced from this bore.

Bore 620 (Bore ID 31755)

Limited information is available for Bore ID 31755 as the bore has not yet been drilled. The applicant relies on geophysical investigations and aquifer mapping to demonstrate that the bore will be capable of supplying the proposed allocation of 371 m³/day (135,500 m³/year).

The geophysical investigations identified the proposed bore location as a favourable groundwater target and estimated a potential yield of between 406 m³/day and 2,843 m³/day, with a predicted sustainable yield of approximately 1,279 m³/day. While these findings suggest that groundwater is likely to be intersected at the proposed location, I do not agree that geophysical investigations can be relied upon to determine bore performance, sustainable yield, or bore efficiency. Geophysics is useful for identifying potentially water bearing structures and favourable drilling locations, but the intersected aquifer hydraulics can only be confirmed through aquifer testing following bore construction.

In addition to the applicant's assessment, I have considered the yields of neighbouring bores within the same hydrogeological setting. The information shows that neighbouring bore airlift yields range from approximately 6 m³/day to 2,580 m³/day. This shows a significant variation in aquifer dynamics and demonstrates the heterogeneous nature of the fractured Greywacke / Waitemata aquifer system. It also demonstrates that bore yields can vary significantly over short distances.

The applicant provided a Section 67 response dated 16 October 2026 in an attempt to address this information gap. However, the response again relied heavily on the geophysical assessment, which predicted a potential yield of between 406 m³/day and 2,843 m³/day and a sustainable yield of approximately 1,279 m³/day. For the reasons outlined above, I maintain that while geophysics is a valuable tool for identifying favourable drilling targets, however it cannot be relied upon to estimate bore yield without confirmation through drilling and aquifer testing, this is not industry best practice.

The applicant also noted that Auckland Council has previously granted groundwater take consents where aquifer testing was undertaken following the granting of consent, citing consent WAT60466055 as an example. While this is correct, I consider each application must be assessed on its own merits and on the evidence available. In my view, decisions regarding the appropriateness of a proposed allocation should be informed by actual bore and aquifer data, including lithological conditions, demonstrated bore yields, and aquifer capacity. In the case of WAT60466055, seven of the ten nearest bores airlift yields showed that they were capable of producing the required water demand. In contrast, for the proposed take from Bore ID 31755, only one of the ten nearest bores showed airlift yields capable of producing the water volume sought by the applicant.

Accordingly, there is currently no direct evidence that shows that Bore ID 31755 can sustainably abstract 371 m³/day. This information gap is significant because Policy E2.3.7(7)(g) of the Auckland Unitary Plan requires consideration of whether the abstraction bore can abstract the quantity of water sought. While the applicant has demonstrated demand for the water and there is allocatable water available in the aquifer, groundwater availability alone does not demonstrate that the requested volume can be practically abstracted from the proposed bore.

Therefore, there is a clear risk associated with granting consent for the full allocation sought and subsequently (potentially after completing the development) establishing that Bore ID 31755 is incapable of producing the required volume of water, this will place the development in difficult water supply situation.

Because Bore ID 31755 forms a significant component of the development's long-term water supply strategy, confidence in the bore's production capability is important when assessing both the appropriateness of the allocation sought and the efficient use of the groundwater resource.

Should consent be granted, I recommend a condition requiring the consent holder to drill Bore ID 31755 and undertake a suitably designed aquifer test within the first five years of the commencement of consent, and prior to the development stage that relies on water from this bore (identified in yellow in figure 1 of the 16 October section 67 response). This would provide certainty regarding the bore's production capability and ensure that sufficient groundwater is available to meet the future water demand of the development, before the development occurs.

Conditions

I recommend that a condition of consent is included that requires the applicant to conduct aquifer testing on Bore ID 31755 following its construction and prior to exercise of the consent. The testing should include:

- a step-drawdown test to assess bore efficiency and pumping characteristics;
- a minimum 24-hour constant-rate pumping test to assess sustainable yield;
- monitoring of drawdown and recovery in the subject bore and, where practicable, nearby bores; and
- assessment by a suitably qualified hydrogeologist confirming the sustainable abstraction rate of the bore in an aquifer test report.

The aquifer test results should be used to validate the geophysical predictions and confirm that Bore ID 31755 is capable of sustainably supplying the proposed allocation. Due to this uncertainty before consenting, I have recommended a consent condition that allows the Council to review, and if necessary, amend the consented allocation withing two months of receiving the aquifer test report, if it is found that the bore cannot abstract the required amount of water to meet the consented quantities.

It is also important that this test is completed in the initial 5 years, should this consent be granted. The aquifer test should also occur before the development described in figure 1 of the section 67 report (highlighted in yellow) begin to occur, to assure water supply for the development.

6.3. Taking is within water availabilities listed in AUP(OP) Appendix 3, Table 1 (E2.2)

The current availability of the Beachlands Greywacke / Waitamata aquifer system is as follows:

Water Availability for Beachland Greywacke / Waitemata aquifer: 746,850 m^3/year	
Total water demand	
Consented allocation	598,000 m^3/year **
Permitted Activity Takes	8,000 m^3/year
AC model S14(3)(b)	4,542 m^3/year
Total water demand	**606,642 m^3/year**
Additional water demanded by applicant	135,500 m^3/year
Remaining availability	**808 m^3/year**

** Includes existing consent WAT60276020

Therefore, there is enough water available for the proposed application, according to current availability.

6.4. *Proposed take's impact on: Recharge to other aquifers (E.2.3 (7)(a)(i), groundwater settlement (Policy E.2.3(.7) (h)) and Surface-water features (E.2.3(.7) (b) & (c))*

Formosa bore (Bore ID 20758)

The abstraction from Bore ID 20758 (Formosa Bore) is not proposed to increase beyond the allocation authorized under consent WAT60276020. Therefore, no additional effects on aquifer recharge, groundwater settlement, or nearby surface water features are anticipated beyond those previously assessed and authorized. As such, I consider the effects of continuing the existing allocation to be no more than negligible.

Bore 620 (Bore ID 31755)

The applicant did not assess the potential effects of the proposed groundwater take on recharge to other aquifers, groundwater consolidation settlement, or nearby surface water features.

As part of the section 67 process, the applicant was asked to assess the proposed takes' effects on recharge to other aquifers, consolidation settlement and impacts on surface water features. In response, the applicant advised that sufficient groundwater is available within the aquifer to support the proposed take. While this addresses water availability, it does not directly address potential effects on aquifer recharge, land settlement, or surface water features.

To address this information gap, I reviewed available information in the area that the Council currently holds, including nearby bore logs, the proposed bore design for Bore ID 31755, and hydrogeological information from nearby groundwater take applications. Bore logs from the surrounding area indicate a geological order comprising Waitemata material followed by greywacke basement rock. For example, nearby bores (bore ID 30597 and 23230) intersect sandstone and mudstone sequences to depths of approximately 175-180 m (Waitemata Group), before encountering greywacke bedrock.

The proposed bore is designed to be cased to approximately 275 m depth, with groundwater abstraction occurring from the deeper Greywacke / Waitemata aquifer system. Therefore, the production zone will be separated from the ground surface by a significant thickness of consolidated, low-compressibility rock.

Given the depth of abstraction and the competent nature of the geological formations present, the proposed groundwater take is unlikely to result in measurable aquifer consolidation or land surface settlement. The Greywacke / Waitemata aquifer system is also the only recognised aquifer management unit expected to be intersected by the proposed bore. As no other aquifers are known to occur above or below the aquifer production zone, the proposed take is not expected to adversely affect recharge to other aquifers.

The applicant did not assess the potential effects of the proposed groundwater take on nearby surface water features. A review of GeoMaps indicates that the nearest permanent stream is located approximately 73 m south of the site. The stream elevation at this location is approximately 50 m RL, while groundwater levels in the nearest bore to the stream (Bore ID 23230) are approximately 5 m RL. This significant

difference in hydraulic head indicates a downward hydraulic gradient from the surface water features towards the underlying groundwater system.

Additionally, groundwater is proposed to be abstracted from Bore ID 31755 at a depth of at least 215m below mean sea level (275m of casing proposed to be installed). Accordingly, the proposed production zone is separated from the nearest surface water feature by more than 215m vertically and by approximately 73 m horizontally. Hence, the abstraction zone is separated from surface water features and shallow groundwater systems by a substantial thickness of relatively low-permeability Waitemata Group sediments and underlying greywacke geology.

Given the marked difference in hydraulic head between the closest surface water feature and the local groundwater table, together with the substantial vertical separation and the presence of low-permeability intervening geological materials, a direct hydraulic connection between the nearest surface water feature and the groundwater system targeted by Bore ID 31755 is considered unlikely. Consequently, any effects of the proposed groundwater take on nearby surface water features are expected to be negligible. Despite the limited response received, my review of the information available to the Council indicates that the proposed take is unlikely to adversely affect recharge to other aquifers, induce land surface settlement through aquifer consolidation, or impact nearby surface water features close to the site.

6.5. The impact in terms of saline intrusion and contamination

Although the applicant states in Section 9.3.4.9 of the Planning Assessment that the proposed groundwater take will not result in saline intrusion, no supporting hydrogeological assessment, monitoring data, or water quality evidence has been provided to validate this conclusion.

Under condition 11 of consent WAT60276020, the consent holder was required to undertake annual groundwater quality monitoring for indicators of saline intrusion. In addition, an initial baseline water quality sample was recommended to confirm that the groundwater was suitable for its intended use. Council records indicate that these monitoring requirements were not fulfilled, and no groundwater quality data has been provided or discussed as part of the current application.

Both Bore ID 20758 and Bore ID 31755 target the fractured Greywacke / Waitemata aquifer system. Fractured rock aquifers are inherently heterogeneous and can exhibit complex groundwater flow paths that are difficult to predict without supporting monitoring data. Given the proposed use of the groundwater for potable water supply and irrigation, it is important that the suitability of the abstracted groundwater is confirmed and that any changes in groundwater quality are identified as early as possible.

The absence of any saline intrusion and water quality monitoring information or assessment of effects in relation to these matters, was highlighted to the applicant as part of the section 67 assessment. In response, the applicant advised that sufficient groundwater is available within the aquifer to support the proposed take. While this addresses water availability, it does not directly address potential effects of the take on saline intrusion and water quality (E.2.3 (7)(d) or the likelihood that the take from bore ID 31755 would cause saline intrusion or other contamination. Additionally in a follow up 67 response dated 16 October 2026 the applicant concluded that saline intrusion risk associated with the water take can be addressed via monitoring conditions. I concur, however due to the nature of saline intrusion in a fractured

aquifer system, it would have been ideal, to have aquifer parameters to do a drawdown calculation to determine if the radius of influence from the proposed take, is likely to reach coast.

In the absence of historical groundwater quality monitoring data and given the close proximity of both production bores to the coast (both at distances of less than 1 km) I consider it appropriate that the consent includes conditions requiring baseline and ongoing groundwater quality monitoring, including monitoring for indicators of saline intrusion. This proposed monitoring will provide confidence that the groundwater remains suitable for its intended use and will enable any adverse changes in water quality to be identified and managed as early as possible.

This is particularly relevant given that the proposed take is proposing to take most of the remaining allocatable water in the aquifer system. The assessment of groundwater availability for the aquifer is based on maintaining residual groundwater throughflow to the coast, in order to protect against saline intrusion and maintain the long-term sustainability of the resource. Thus, continued groundwater quality monitoring is necessary to confirm that the proposed abstraction does not adversely affect aquifer water quality or lead to saline intrusion over time.

Condition

As discussed above, no groundwater quality monitoring data have been provided to demonstrate that the groundwater resource is currently suitable for its intended use or to establish the existing salinity characteristics of the aquifer. Accordingly, I recommend that groundwater quality monitoring and saline intrusion management conditions are included should consent be granted.

Specifically, I recommend that the consent conditions require the following:

- Prior to the commencement of groundwater abstraction under this consent, baseline groundwater quality samples must be collected from Bore ID 20758 and Bore ID 31755.
- The baseline samples must be analysed for a suite of parameters that demonstrate whether the abstracted water is suitable for potable water supply and monitors potential saline intrusion, and the results compared against the current New Zealand Drinking Water Standards and relevant Maximum Acceptable Values (MAVs).
- Groundwater quality samples must also be collected from both production bores on a six-monthly basis, during March and October of each year. These samples must be analysed for electrical conductivity, sulphate and chloride, the most common indicators of saline intrusion.
- During the first two years of the consent, interim groundwater quality trigger levels must be established using available monitoring data from comparable nearby groundwater takes and the baseline water quality results collected from the site.
- Following completion of the initial two-year monitoring period, permanent site-specific trigger levels must be established using the groundwater quality data collected from Bore ID 20758 and Bore ID 31755.

- Where any saline intrusion trigger level is exceeded, the consent holder must implement the saline intrusion response protocol specified in the consent conditions, including investigation, reporting, and any required management actions.

Given that there is large uncertainty surrounding the quality of water associated with the proposed abstraction, I also recommend that provisions should be made in the consent conditions that allows for the review of the allocation should it be found that the water quality is not fit for purpose or that saline intrusion is occurring.

6.6. Assessment of effects on other lawful bore water takes (E2.3. (7) (e) &(f)

Formosa bore (Bore ID 20758)

The proposed allocation for Bore ID 20758 remains unchanged from that authorized under Consent WAT60276020 (300 m³/day and 42,000 m³/year). As no increase in abstraction is proposed, the drawdown and bore interference effects associated with this take are expected to remain unchanged from those previously assessed and authorized. Therefore, no additional adverse effects on neighboring groundwater users are expected as a result of the replacement consent.

Bore 620 (Bore ID 31755)

The applicant has not undertaken a quantitative assessment of potential drawdown interference effects associated with the proposed abstraction from Bore ID 31755.

Section 4.2 of the Water Supply Concept Report (Attachment 11) states that the proposed bore will be drilled to a depth of approximately 600 m and cased to approximately 275 m, which is deeper than existing bores in the area.

On this basis, the applicant concludes that the proposed abstraction is unlikely to adversely affect neighbouring groundwater users. However, no hydrogeological analysis, aquifer testing, or monitoring data has been provided to demonstrate that the proposed bore is not hydraulically connected to surrounding groundwater users or that it would not lead to drawdown in neigbouring bores that will affect their established take. In the absence of such evidence, I do not consider it appropriate to conclude that interference effects will be negligible solely on the basis of bore depth.

The absence of neighboring drawdown interference effects for bore ID 31755 was raised with the applicant through the section 67 further information process. In response, the applicant advised that sufficient water is available within the aquifer to support the proposed take. While this may address the question of water availability, it does not address whether the take from bore ID 31755 would cause adverse interference effects on neighbouring groundwater users, such that it prevented them from exercising their lawfully established water takes.

Additionally in section 67 response dated 16 October 2026, the applicant again re-iterated their stance that due to the proposed depth of the bore no other bores are likely to be affected. As at least five of the ten closest bores are drilled to 180m or more (up to a depth of 246m), hydraulic connection is a possibility as there is not a significant distance between water takes. Hence, I am of the opinion that the applicant

did not provide any evidence that definitively shows that bore ID 31755 is not hydraulically connected to other groundwater takes close to the site.

Council records and GeoMaps indicate that at least 21 bores are located within a 1 km radius of Bore ID 31755. The underlying Greywacke / Waitemata aquifer system is highly fractured and heterogeneous, meaning groundwater flow is typically controlled by localised fracture networks rather than uniform aquifer properties. As a result, hydraulic connectivity between bores can be highly variable and difficult to predict without site-specific testing. This variability is reflected in available bore log data, which indicates neighbouring bore airlift yields ranging from approximately 6 m^3/day to 2,580 m^3/day. Such variation demonstrates the complex and heterogeneous nature of the aquifer system and limits the ability to reliably predict interference effects through conceptual assessment alone.

Given the absence of aquifer testing, there is currently insufficient information to determine the extent of drawdown that may result from the proposed abstraction or the degree to which neighbouring bores may be affected. I consider an aquifer pumping test is necessary to characterise the hydraulic properties of the aquifer and provide a sound basis for assessing interference effects with an appropriate analytical or numeric method. While aquifer testing can be used to assess bore yield, it can also be used to determined aquifer parameters such as transmissivity, storativity, drawdown response and hydraulic connectivity. These parameters are essential for calculating the extent of drawdown from the proposed pumping, and for evaluating potential effects on neighbouring groundwater users over a set time period.

Value would also be gained from monitoring nearby bores during the pumping test, where access can be obtained. Monitoring results from these “observation bores” would provide direct evidence of hydraulic connectivity and enable a more reliable assessment of the extent to which the proposed abstraction may influence groundwater levels in surrounding bores.

Following completion of aquifer testing, I recommend that the applicant undertake a drawdown interference assessment using the aquifer parameters derived from the pumping test. The assessment should evaluate potential effects on groundwater users within at least 1 km of Bore ID 31755 and should consider both predicted aquifer drawdown from the pumping well and in-well drawdown associated with existing authorised abstractions. The purpose of the assessment is to determine whether the proposed take could materially reduce the ability of neighbouring consent holders to exercise their authorised groundwater allocations, consistent with the requirements of Policies E2.3.7(7)(e) and E2.3.7(7)(f) of the Auckland Unitary Plan. This report should be reviewed and approved by the Council.

Given the scale of the proposed allocation and the number of nearby groundwater users, this information is critical to understanding the potential effects of the abstraction. Until such an assessment is undertaken, there remains uncertainty regarding the extent to which the proposed take may affect groundwater levels and bore performance in the surrounding area. The absence of an aquifer test and drawdown interference assessment means the extent of potential effects on neighbouring groundwater users remains uncertain. Without information on hydraulic connectivity or predicted drawdown, it is not possible to determine which nearby bores may be affected, or whether any effects would be less than minor. This uncertainty limits Council's ability to confidently identify potentially affected parties and assess the full extent of effects associated with the proposal.

Consequently, I have recommended a consent condition that allows the Council to review and if necessary, amend the allocation authorised from Bore ID 31755 following receipt and assessment of the aquifer test results and drawdown interference assessment, should the latter identify a greater degree of hydraulic connectivity than currently anticipated. This is to ensure that the final allocated volume does not result in unacceptable adverse interference effects on neighbouring groundwater users, to the extent their owners are prevented from exercising their lawfully established water takes. This, however, might impact the feasibility of water supply to the part of the development requiring water from bore ID 31755.

Therefore, the proposed aquifer test needs to be done within the first five years of the commencement of consent, and prior to the development stage that relies on water from this bore, as identified in figure 1 of the applicant's 16 October Section 67 response (the area highlighted in yellow). With the implementation of this condition Council will have the opportunity to amend the water take should it adversely effects on neighbouring bores to the point where they will not be able to use their lawfully established water supply, and the applicant would be in a better position to confirm if the water take is capable to supply the required water demand.

Condition

I recommend that a condition of consent be included that requires the applicant to conduct an aquifer pumping test following the construction of bore ID 31755 and prior to exercise of the allocation. The test should include:

- a step-drawdown test to assess bore efficiency and pumping characteristics;
- a minimum 24-hour constant-rate pumping test to assess sustainable yield;
- monitoring of drawdown and recovery in the subject bore and, where practicable, nearby bores; and
- assessment by a suitably qualified hydrogeologist confirming the aquifer parameters related to the aquifer test.
- Completion of a "*Neighboring bore interference effects assessment report*". This report should include: all bores within a 1km radius of the production bore, predicted drawdown in neighbouring bores, in-well drawdown in neighbouring bores from their own take, the volume of water remaining in each bore after pumping has occurred, and all assumption and limitations of the calculations.
- The "*Neighboring bore interference effects assessment report*" must be submitted to the Council for certification before the abstraction of water from bore ID 31755 commences.

It is also important that this test is completed in the initial 5 years, should this consent be granted. The aquifer test should also occur before the development described in the figure 1 of the section 67 response ,area highlighted in yellow, is started. This will assure water abstracted from bore ID 31755 will not adversely affect neighbouring bores.

6.7. *Extension of the lapse date of bore ID 31755*

I have no concerns regarding the extension of the lapse date of bore ID 31755 to align with the lapse date of the water take consent.

7.0 Section 67 Information Gap

At the time of writing this Memo I identified the following significant information gaps:

Description of Missing Information

7.1. **Bore ID 31755 Production Capability -** Bore ID 31755 has not been drilled or aquifer tested. While geophysical investigations indicate groundwater is likely present, no direct evidence has been provided demonstrating that the bore can sustainably abstract 371 m³/day (135,500 m³/year), as required by Policy E2.3.7(7)(g).

Risk: High

Why is this information needed:

Without this information, it is not certain that the calculated water demand for the proposed development can be met, with 30% of the demand planned to be supplied by the proposed bore. The applicant has not provided a contingency plan if Bore ID **31755** does not have the capability to sustainably abstract the quantities being sought.

7.2. **Drawdown and Neighbouring Bore Interference Effects -** No assessment of drawdown or interference effects has been undertaken for Bore ID 31755.

Risk: High

Why is this information needed:

Given the presence of at least 21 neighbouring bores within 1 km of Bore ID 31755, and the highly variable yields observed in the local fractured aquifer system, an aquifer pumping test and a neighbouring bore interference assessment are required to demonstrate compliance with Policies E2.3.7(7)(e) and (f), that neighbouring groundwater users are not adversely affected to the extent they are prevented from exercising their lawfully established water takes.

7.3. **Groundwater Quality and Saline Intrusion-** No groundwater quality monitoring data, baseline water quality assessment, or saline intrusion assessment has been provided. This is of particular importance given the scale of the proposed abstraction, the reliance on groundwater for potable supply and the proximity of the production bores to the coast.

Risk: Medium to High

Why is this information needed:

	As the proposed take is to be the potable water supply for the Beachlands South development, it is critical to ensure that the water quality is suitable for the proposed use. Both production bores are in relatively close proximity to the coast; therefore, there is a risk of saline intrusion. Furthermore, the proposed take may increase the risk of saline intrusion, potentially impacting water quality for all groundwater users in the area. Therefore, I consider it appropriate that ongoing monitoring is undertaken to provide an early warning system should the quality of the water supply change

8.0 Recommendation

Based on the information currently available, I do not have enough information to support the proposed groundwater take application at this stage. The applicant has generally demonstrated a legitimate demand for water associated with the proposed development, and the requested allocation is currently within the available groundwater allocation limits for the Beachlands Greywacke / Waitemata aquifer system.

However, several significant information gaps remain concerning the reliability of the proposed water supply; the production capability of Bore ID 31755; potential interference effects on neighbouring groundwater users from the proposed take at bore ID 31755; and groundwater quality and potential saline intrusion. These matters introduce significant uncertainty regarding the availability and long-term sustainability of the proposed take and whether it may have adverse effects on neighbouring groundwater users and the environment. Hence with available information, the effects of proposed take, especially from bore ID 31755, cannot be considered as less than minor on the receiving environment. The applicant has failed to address the request for further information under section 67 which may have addressed these gaps.

Should it be decided that the consent be granted, I recommend that the conditions detailed in section 9of this memo are imposed. These conditions will ensure that the resulting water take (which may not necessarily be what is currently being sought) is sustainable in the long term, and that the effects on the environment and neighbouring users are less than minor.

9.0 Proposed Conditions

I recommend the following set of conditions:

SPECIFIC CONDITIONS GROUNDWATER TAKE CONSENT WATxxx

Should consent be granted, I recommend the following conditions be imposed:

Activity in accordance with plans

1. This consent must be carried out in accordance with the documents and drawings and all supporting additional information submitted with the application, detailed below, and all referenced by Auckland Council ('the Council') as resource consent number WATxxx, including:

    - Beachlands South - Fast-track Approval Substantive Application, Assessment of Environmental Effects and Statutory Analysis", prepared by Unio Environmental, dated 24 September 2026, Reference 000005.
    - Draft Proposed Conditions – Beachlands South Fast Track Application, dated 24 September 2026.
    - Beachlands South Fast Track - Infrastructure Report, prepared by Harrison Grierson, dated 24 June 2026, Document REP001-A2515591.00.cjm
    - Beachlands South Fast-Track Substantive Application Water Supply Concept - Beachlands South, Beachlands Auckland", prepared by GWE Consulting Engineers, dated June 2026, Version V6, Reference J3021-1
    - A Section 67 -Request for Further Information Response document titled "Attach 0B2 S67 Response Table", prepared by UNIO Environmental, under the Groundwater take and Bore

Use of Consent

2. Under section 125 of the RMA, this consent lapses five years after the date it is granted unless:

    (a) The consent is given effect to; or

    (b) The Council extends the period after which the consent lapses.

3. The consent holder must pay the Council an initial consent compliance monitoring charge of $816 (inclusive of GST), plus any further monitoring charge or charges to recover the actual and reasonable costs incurred to ensure compliance with the conditions attached to this consent.

    Advice note:

    The initial monitoring deposit is to cover the cost of inspecting the site, carrying out tests, reviewing conditions, updating files, etc., all being work to ensure compliance with the resource consent(s). In order to recover actual and reasonable costs, monitoring of conditions, in excess of those covered by the deposit, should be charged at the relevant hourly rate applicable at the time. The consent holder will be advised of the further monitoring charge. Only after all conditions of the resource consent(s) have been met, will the Council issue a letter confirming compliance on request of the consent holder.

Commencement and duration of consent

4. The taking of water permit WAT***** must only commence upon surrender of existing consent WAT60276020, which is held by the applicant.

5. The consent holder must notify the Council within one week of the commencement of groundwater abstraction under consent WATxxx.

Advice Note:

The notification of the commencement of groundwater abstraction should be submitted to monitoring@aucklandcouncil.govt.nz.

6. The taking of water permit WATxxx expires on **31 May 2052**, unless it has lapsed, been surrendered, or been cancelled at an earlier date pursuant to the RMA.

Advice Note:

A regional consent, such as a groundwater take permit, is linked to the person or organisation listed as the consent holder, and does not automatically transfer to the new landowner when a property is sold.

A consent holder's interest may be transferred - in whole or in part - to another person or organisation for water take consents. The original consent holder remains responsible for compliance with the consent conditions and all related fees until the Council receives the completed and signed transfer form a Notice of Transfer of a resource consent. Further information on the notice application can be found in the link below:

https://www.aucklandcouncil.govt.nz/building-and-consents/resource-consents/making-change-to-resource-consent/Pages/transfer-resource-consent.aspx

Authorised Use

7. The take and use of groundwater from the Beachlands Greywacke / Waitemata aquifer is authorised in the manner set out below:

   (a) The take is from a 150mm diameter, 107mm deep bore (ID 20758) at map reference 1777853 mE, 5914738 mN, or a bore certified by the Council to be a replacement of the production bore.

   (b) The take is from a 200mm diameter, 600mm deep bore (ID 31755) at map reference 1778404 mE, 5913528 mN, or a bore certified by the Council to be a replacement of the production bore.

(c) The take must only be used for potable water supply to the proposed development and irrigation of a 5-hectare golf course hectares, on land legally described as Lot 2 DP 501271, Lot 100 DP 504488, Lot 4 DP 54105, Lot 9 DP 54105 and Lot 10 DP 54105 at 110 Jack Lachlan Drive and 620, 712, 758 and 770 Whitford-Maraetai Road, Beachlands.

Advice Note:

A replacement bore will require a resource consent application pursuant to s9(2) of the RMA.

Changes to the listed land use activities utilising the water take may require an application to change the conditions pursuant to s127 of the RMA.

Authorized quantities

8. The abstraction from bore ID 20758 (Formosa bore) must comply with the following:

(a) The total daily abstraction must not exceed 300 cubic metres.

(b) The total volume of water abstracted in each 12-month period, commencing 1 July of any year and ending 30 June of the following year, must not exceed 42,000 cubic metres.

9. The abstraction from bore ID 31755 (Boe 620) must comply with the following:

(a) The total daily abstraction must not exceed 371 cubic metres.

(b) The total volume of water abstracted in each 12-month period, commencing 1 July of any year and ending 30 June of the following year, must not exceed 135,500 cubic metres.

10. If any limits specified in **Conditions 8 or 9** are exceeded, the consent holder must provide the Council with a report detailing:

(a) The reason for the exceedance and the mitigation measures proposed to ensure future compliance.

(b) A timeframe for implementing the mitigation measures.

The report must be submitted to the Council within one (1) month of the identified exceedance.

Advice Note:

The exceedance notifications report should be submitted to monitoring@aucklandcouncil.govt.nz.

Contact details

11. Within 10 days of the consent being granted, the consent holder must provide to the Council, the details of a nominated contact person, including their full name, their role with respect to the consent (for example, consent holder, tenant, site manager), a valid email address and mobile phone number that the Council may contact if required, regarding water use data. The contact details must be kept up-to-date, and the Council must be notified of any changes within 10 working days of the change occurring.

Advice Note:

The contact person may be someone other than the consent holder, for example, a site manager or tenant. However, overall responsibility for compliance with consent conditions remains with the consent holder.

Bore construction for water level measurements

12. Provision at the top of both production bore ID 20758 and production bore ID 31755 (or a replacement bore certified by the Council), must be made and maintained so that a probe can be lowered vertically into the bores between the riser tube and casing, to measure the static water level/water level in the bores.

Advice Note:

Access to the wellhead for water level measurement can be achieved by having an access tube of at least 2 centimetres internal diameter extending from the top of the bore to the submersible pump. In order to keep out foreign matter, the tube should be fitted with an easily removed plug.

Bore construction for water quality sampling

13. Provision at the top of both production bore ID 20758 and production bore ID 31755 (or a replacement bore certified by the Council), must be made and maintained so that a sample of water can be collected from the bores for water quality analysis. A tap or hand valve must be fitted as close to the pump outlets as possible and before the water enters any storage tank or filter. The tap or valve must have at least 0.3 metre clearance above ground level or any other obstruction to allow a sample bottle to be filled.

Advice Note:

Access to the wellhead for water sampling can be achieved by having a tap or hand valve fitted as close to the pump outlet as possible and before the water enters any storage tank or filter. The tap

or valve should have at least 0.3m clearance above ground level or any other obstruction to allow a sample bottle to be filled.

Installation of water meter

14. Prior to exercise of this consent, a water meter with a visual tumbler display and an electronic pulse output connected to a data logger and telemetry device, must be installed, verified in-situ for accuracy and maintained at the outlet of both pumps (production bore ID 20758 and production bore ID 31755) to the satisfaction of the Council. The water meters and recording device or system must:

- Be fit for the purpose and water it is measuring;
- Measure the volume of water taken at 60-minute intervals, with an accuracy of +/- 5% of the actual volume taken;
- Transmit the volume of water taken in real time. The telemetry device must transmit logged data at intervals of no more than 60 minutes to the Council's Hydrotel water database (or to any replacement database required in writing by Council) in a format that is compatible with the Council systems;
- Be tamper-proof and sealed;
- Be installed (water meter) on the outlet pump;
- Have systems and equipment in place to ensure continued operation in the event of a power outage;
- Have backup storage;
- Be safely accessible;
- Be installed and maintained in accordance with the manufacture's specifications.

Prior to exercise of this consent, the consent holder must contact monitoring@aucklandcouncil.govt.nz, or to any preplacement email address identified in writing by the Council, to arrange set-up of the telemetry devices to ensure logged data is transmitting to the Council correctly. Water meter verification must be completed by a Suitably Qualified and Experienced Professional (SQEP) for meter installation and verification.

Advice Note:

The Council interprets a SQEP to be a person that has obtained a relevant NZQA recognised qualification in the verification and installation of water meters.

Verification of water meter/device accuracy

15. The water meters and any device or system used to record water take volume, must be verified in-situ as accurate by a SQEP at the following times:

- Prior to the exercise of this consent.
- Within 5 working days of the water meter being serviced or replaced.
- By 31 December of the fifth year from the commencement of consent, and thereafter at five yearly intervals.

The water meters, their verification and evidence of their accuracy must be in accordance with the Resource Management (Measurement and Reporting of Water Takes) Regulations 2020 (or any equivalent regulations that may replace them) and a copy of the verifications must be provided to the Council within 10 working days of the meter/devices being verified as accurate.

Water meter verification must be completed by a SQEP for meter installation and verification. The verification of the water meter must be to the installation specifications listed in **Condition 14.**

Advice Note:

The Council interprets a SQEP to be a person that has obtained a relevant NZQA recognised qualification in the verification and installation of water meters.

Water meter readings

16. Water meter measurements of water abstraction from the outlet of the pump from production bore ID 20758 and production bore ID 31755, must be recorded daily at 60-minute intervals, commencing before pumping starts for the day and finishing at the end of pumping for the day. Daily records of the measurements must be provided electronically to the Council by the end of the next day (unless otherwise agreed by the Council).

In the event of failure of the data logger, telemetry unit and/or associated electronic devices, the water meter must be read manually at daily intervals until the devices are repaired and records kept of the date, time and corresponding water meter reading. The Council must be notified of this problem within three working days of having identified the issue.

If no water is taken during any period, then the current meter reading must still be recorded.

Advice note:
For any issues with the submissions of compliance data or documentation, including access to the Water Use Data Management System, contact monitoring@aucklandcouncil.govt.nz.

Water level readings

17. Water levels in production bore ID 20758 and production bore ID 31755 must be measured twice a year in March and October of each year, and records kept of the date, time and corresponding water level for the production bore, in accordance with **Condition 18** below.

    The results of each water level reading must be submitted to the Council at monitoring@aucklandcouncil.govt.nz by no later than the 7th day of the following month in which the reading was undertaken.

18. The static water levels must be measured from the top of surface elevation, and must be recorded to the nearest 0.01 of a meter (nearest cm). Both bores must be monitored after pumping water levels have fully recovered to non-pumping levels. Recovery to non-pumping levels must be verified by taking a series of three or more water levels made over a half hour period that are all within 0.02m of each other and are not showing a rising or falling head. If there is a difference of more than 0.02m, then the bore must be allowed to recover further from any pumping, until the groundwater level has stabilised.

Water reporting

19. The following information must be entered, at the frequency and date specified, to the Council's *Water Use Data Management System* or to any replacement database identified in writing by the Council.

Information	**Frequency**	**Due Dates for reporting**
Water take meter readings, time and date	Daily	Daily
Water level readings Including time and date	Twice a year in March and October	The results of each water level reading must be submitted to the Council at monitoring@aucklandcouncil.govt.nz by no later than the 7th day of the following month in which the reading was undertaken.
Water quality data	Before commence ment of the consent,	The results of the sampling must be submitted to the Council at

	and once yearly in March	monitoring@aucklandcouncil.govt.nz within a month of receiving the laboratory results.
Saline intrusion monitoring	Twice a year in March and October	The results of the sampling must be submitted to the Council at monitoring@aucklandcouncil.govt.nz within a month of receiving the laboratory results.

Advice Note:

The web address for Council's on-line Water Use Data Management System is:

http://aklc.hydrotel.co.nz/hydrotel/cgi-bin/WudmsWebServer.cgi

Your WUDMS customer number is Pxxx for consent WATxxx, and the default password is 1234. For the link to work properly you need to ensure that the Council has your up-to-date email address for contact purposes. An on-line manual explaining how to enter and submit your water readings is available at the web address specified above.

For any issues with the submissions of compliance data or documentation, including access to the Water Use Data Management System, contact monitoring@aucklandcouncil.govt.nz.

Production bore water chemistry sampling

20. A water sample must be collected from production bore ID 20758 and production bore ID 31755, or a replacement bore certified by the Council, prior to the commencement of groundwater abstraction, and yearly thereafter in the month of March, and the samples analysed for the following parameters:

(a) Conductivity at 25°C (mS/m)

(b) Chloride (CI)

(c) Sulphate (SO_4)

(d) Temperature of water sample at the head of the bore

(e) pH

(f) Potassium (K)

(g) Silica (SiO_2)

(h) Nitrate nitrogen (NO_3-N)

(i) Total Alkalinity ($CaCO_3$)

(j) Calcium Hardness ($CaCO_3$)

(k) Magnesium Hardness ($CaCO_3$)

(l) Boron (B)

(m) Manganese (Mn)

(n) Sodium (Na)

(o) E.coli

(p) Total Coliform

(q) Enterococci

The bore purging, sample bottles and filling, sample transport and handling, laboratory measurements, data processing and quality assurance must be in accordance with "*National Environmental Monitoring Standards-Water Quality Part 1 sampling, Measuring, Processing and Archiving of Discrete Groundwater Quality Data*" (March 2019 or latest edition) at www.nems.org.nz, or the equivalent as approved in writing by the Council.

The water sample analysis results, along with a report detailing whether the abstracted water is of suitable quality for the proposed activity, must be submitted to the Council at monitoring@aucklandCouncil.govt.nz within 30 days of their receipt from the laboratory.

21. If any constituent analysed exceeds the applicable maximum acceptable value (MAV) or operational limit specified in the Water Services (Drinking Water Standards for New Zealand) Regulations 2022, or any subsequent amendment or replacement of those standards, the consent holder must:

(a) Notify the Council within a week of becoming aware of the exceedance.

(b) Undertake repeat sampling and analysis of the non-compliant constituent(s) at weekly intervals for a period of four consecutive weeks following receipt of the initial exceedance result.

(c) Provide the results of the repeat sampling programme to the Council within 20 working days of completion of the sampling programme.

(d) Where the repeat sampling confirms an ongoing exceedance of the relevant drinking water

standard, prepare and submit a Groundwater Quality Exceedance Report to the Council within two months of confirmation of the exceedance.

(e) The Groundwater Quality Exceedance Report must, as a minimum, include:

i. Identification of the constituent(s) exceeding the applicable drinking water standard;

ii. An assessment of the likely cause and source of the exceedance;

iii. An assessment of any risks associated with the continued use of the groundwater for potable supply purposes;

iv. Details of any proposed mitigation, management, treatment, infrastructure upgrades, or operational changes required to ensure the groundwater is suitable for its intended use; and

v. Where necessary, proposed amendments to the groundwater abstraction regime and/or monitoring programme.

(f) Any mitigation measures identified in the approved Groundwater Quality Exceedance Report must be implemented within a timeframe agreed to by Council.

The Council must be notified of exceedances of the relevant MAV values and the "Groundwater Quality Exceedance Report" submitted to monitoring@aucklandCouncil.govt.nz.

Should the water quality of abstracted water not be treatable to an acceptable standard for potable water usage, the Council at its discretion, may review the granted water allocations for the proposed use.

Saline intrusion water quality sampling

22. A water quality sample must be collected from production bore ID 20758 and production bore ID 31755 twice a year in October and March. The samples must be analysed for the following constituents:

- Electrical Conductivity at 25°C (mS/m)
- Chloride (Cl)
- Sulphate (SO4)
- Sodium (Na)

The samples must be collected from each of the production bores at the end of the daily pumping cycle before the pumps are switched off.

The bore purging, sample bottles and filling, sample transport and handling, laboratory measurements, data processing and quality assurance must be in accordance with "National Environmental Monitoring Standards-Water Quality Part 1 Sampling, Measuring, Processing and Archiving of Discrete Groundwater Quality Data" (March 2019 or latest edition) at www.nems.org.nz or the equivalent as approved in writing by the Council.

The results of the analyses must be submitted to the Council at monitoring@aucklandcouncil.govt.nz in a pdf digital format by no later than the 7th day of the following month in which the sample was collected.

Interim saline intrusion trigger levels

23. The interim saline intrusion trigger levels for key parameters for production bore ID 20758 and production bore ID 31755, are as follows:

- Electrical conductivity – 60 mS/m
- Chloride – 44 g/m^3
- Sulphate – 10 g/m^3

Final saline intrusion trigger levels

24. Within two years of the commencement of exercise of the consent, final saline intrusion trigger levels for production bore ID 20758 and production bore ID 31755 must be determined, based on the results of first two years of twice-yearly saline intrusion water quality sampling required under **condition 22** (baseline data). The final trigger levels must be calculated as the mean plus three standard deviations (SD) of the baseline data.

Advice Note:

The final saline intrusion trigger levels replace the Interim Trigger Levels.

Groundwater (saline intrusion trigger) exceedance report

25. If the water quality samples taken from production bore ID 20758 and production bore ID 31755, in accordance with **Condition 22** (Saline intrusion water quality sampling) exceed the set trigger levels specified in **Conditions 23 or 24**, then:

a) the Council must be notified as soon as possible and no later than five working days after

becoming aware of the exceedance;

b) sampling of the relevant production bore (or its replacement) must be undertaken weekly with the results reported to the Council within five working days of the sample being taken;

c) if any of the saline intrusion trigger levels are still being exceeded 20 working days after the initial breach, then within 40 working days of the initial breach, a Groundwater Saline Intrusion Trigger Exceedance Report prepared by a suitably qualified and experienced hydrogeological professional, must be submitted to the Council for written approval. The Report must:

   i. assess the reasons for and significance of the exceedance in terms of saline intrusion of the aquifer and any declining groundwater levels;

   ii. include a review of all available data, including groundwater levels, groundwater use and groundwater quality;

   iii. assess whether the exceedance was caused by the exercise of consent; and any proposed mitigation measures that may be required in the event that adverse environmental effects are identified. Such measures should consider a reduction of the pumping rate.

d) all recommendations specified in the Report (if such is required), and any other actions directed by the Council, must be implemented to the satisfaction of the Council and must continue for as long as the groundwater monitoring is considered to be indicative of saline intrusion and/or on-going declining groundwater levels by the Council.

The saline intrusion trigger levels may be changed if agreed to in writing by the Council. The Council reserves the right to review the allocation granted to the applicant should the initial sampling or follow-up sampling indicate that saline intrusion is occurring.

Aquifer pumping test

26. Prior to the use and any abstraction from Bore ID 31755 authorized by this consent, and before the start of the development highlighted in yellow in figure 1 of the section 67 response from the applicant dated 16 October 2026 and within, the consent holder must undertake a 24-hour duration constant rate aquifer test on Bore ID 31755 (or an alternative production bore approved in writing by the Council).. This aquifer test must be done The testing should include:

- a step-drawdown test to assess bore efficiency and pumping characteristics;
- a minimum 24-hour constant-rate pumping test to assess sustainable yield;

- monitoring of drawdown and recovery in the subject bore and, where practicable, nearby bores; and

- assessment by a suitably qualified hydrogeologist confirming the sustainable abstraction rate of the bore in an aquifer test report.

Neighboring bore interference effects assessment report

27. Within one month of completion of the aquifer pumping test, the consent holder must provide the Council with a report prepared by a Suitably Qualified and Experienced Professional (SQEP) in a hydrogeological field for certification. The report (Neighboring Bore Interference Effects Assessment Report) must include, but is not limited to:

    (a) Details of the aquifer test methodology and results;

    (b) Pumping rates, elapsed time data, and groundwater level measurements;

    (c) Groundwater level monitoring results from any observation bores;

    (d) Derived aquifer parameters, including transmissivity and storativity;

    (e) An assessment of the sustainable yield of the production bore, including whether it supports the consented groundwater take;

    (f) Identification of any measures required to align the consented allocation with the demonstrated sustainable yield (for example, drilling another bore); and

    (g) an assessment of drawdown interference effects resulting from the consented groundwater take on neighbouring bores.

    This report must include an assessment of the effects of the proposed water take from Bore ID 31755 in terms of:

    (a) drawdown effects on all neighbouring bores within a 1km radius of the production bore;

    (b) in-well drawdown in neighbouring bores from their own take;

    (c) the volume of water remaining in each bore after pumping has occurred; and

    (d) all assumption and limitations of the calculations.

28. If the aquifer test demonstrates that the sustainable yield of the production bore is less than that consented or that that drawdown interference effects on neighbouring bores are such that other groundwater users is limited in their ability to abstract their lawfully established water takes, then

the Council may review the rate and volume of abstraction authorised by this consent.

The aquifer test results and drawdown interference report must be submitted to the Council at monitoring@aucklandcouncil.govt.nz.

Water Use Efficiency and Environmental Monitoring Report

29. A Water Efficiency and Environmental Monitoring Report must be submitted to the satisfaction of the Council in December 2030, and at 5-year intervals thereafter.

The report must assess the water use over the previous reporting period against best practice with respect to the efficient use of water for the purpose consented. This report must include, but not be limited to:

(a) provision of annual summary of water usage in relation to the water consented.

(b) details of the progress on the development.

(c) Details of water use in relation to the development in the monitoring period up to the submission of the Water Use Efficiency and Environmental Monitoring Report.

(d) reasons why annual water use may have varied over the previous five years.

(e) comparison of the site's water use against industry best practice usage for the same activity.

(f) details of water quantities that are proposed to be used in the next five years.

(g) information demonstrating equipment and decision making (e.g., rainwater harvesting system and water saving measurements are implemented) and any changes planned for the coming five years.

(h) water conservation steps taken (e.g., leak detection).

(i) demonstrate the measures that have been implemented to ensure the abstraction limit is not breached, for example, sensors, alarms, shut off activation, etc., maintenance or contingency plan.

(j) a summary of all water level, water quality and saline intrusion data and how this data relates to the health of the aquifer system.

Review Condition

30. Pursuant to Section 128 of the RMA, the conditions of this consent may be reviewed by the Manager Resource Consents South at the Consent Holder's cost:

In December 2031 and subsequently at intervals of not less than five years thereafter, in order:

- To deal with any adverse effect on the environment which may arise or potentially arise from the exercise of this consent and which it is appropriate to deal with at a later stage or
- To vary the quantities, monitoring, operating and reporting requirements and performance standards in order to take account of information, including the results of previous monitoring and changed environmental knowledge, on: water availability, including alternative water sources; actual and potential water use; groundwater levels; efficiency of water use; groundwater quality; and the relationship of Māori with water.

Advice Note:

Under section 128 of the RMA the conditions of this consent may be reviewed by the Manager Resource Consents South at the consent holder's cost in the following circumstances:

To provide compliance with rules in any regional plan relating to use of water, water or air quality etc. (refer section 128(1) (b) of the RMA) that have been made operative since the commencement of consent.

To provide compliance with any relevant national environmental standard that has been made since the commencement of consent.

Lapse date extension to bore ID 31755

Condition 1: Bore location and construction
The bore is to be generally (within 10 m of the specified location) located and constructed as detailed below:

Name	Bore ID	NZTM Easting (mE)	NZTM Northing (mN)	Depth (m)
Beachlands South Limited Partnership	31755	1778404	5913528	600
Bore diameter (mm)	**Aquifer**	**Casing depth (m)**	**Casing material**	**Grouting**

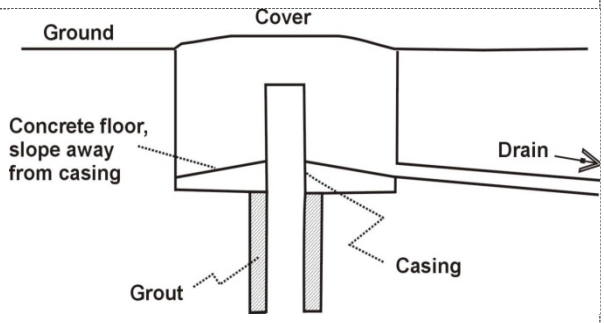
200	Beachlands Greywacke	275	Sch 40 Steel	275

Condition 2: Bore completion date
The bore must be completed within 30 days of the commencement of its construction.

Condition 3: Bore design, construction, maintenance, and record keeping
The bore must be constructed, maintained (periodically checking the integrity of the headworks), tested, and records kept (drilling log), in accordance with the application submitted and NZS 4411:2001, Environmental Standard for Drilling of Soil and Rock. Adequate provisions for groundwater water level measurement and water sampling must be provided at the bore head.

Advice note: Bore headworks

Bore headworks constructed in accordance with the diagram and explanation provided below will be considered to meet the NZS 4411:2001 Section 2.5.5.3-5.

Above ground	*Below ground*
• *The top of the casing shall extend at least 0.3m above the natural ground level or pump house floor, whichever is the lower* • *A concrete pad of 0.3m radius and 0.1m thick, graded to drain surface water away from the bore, is to be constructed around the bore head*	

Advice note: Water level measurement and water quality sampling

NZS 4411:2001 Section 2.5.5.7 (water level measurement) can be met by strapping a 20mm diameter (minimum) tube (polypipe) to the main riser, power and support stay for the pump, the provision of a hole in the headworks of a minimum of 20mm diameter and a removable, screw-type cap. Provision at the top of the bore for water quality sampling can be achieved by fitting a tap or hand valve as close to the pump outlet as possible and before the water enters any storage tank or filter. It should have at least 0.3 metre clearance above ground level or other obstruction to allow a sample bottle to be filled.

Condition 4: Water take consent
The abstraction of groundwater from Bore ID 31755 (other than for the aquifer pumping test) must not commence until a water take consent has been obtained by the consent holder for the proposed abstraction.

Condition 5: Bore identification
Bore identification number 31755 must be permanently affixed, in a clearly visible location and in a form that will remain legible, to the bore head structure.

Condition 6: Information to be supplied to the Council
The following information must be supplied to the Council, within 20 working days of completion of the bore:

a. the drilling log.

b. a digital photograph(s) legibly showing:

- the bore number affixed to the bore head structure;
- the length of the casing protruding above the concrete pad; and
- the concrete pad around the bottom of the bore head.

c. an annotated map, or aerial photograph, that accurately and clearly shows the physical location and coordinates for the bore.

d. the following as-built details for each bore –

Name	Bore ID	NZTM Easting (mE)	NZTM Northing (mN)	Depth (m)
	31755			
Bore diameter (mm)	**Aquifer**	**Casing depth (m)**	**Casing material**	**Grouting**

Advice note: Aerial Photograph

An aerial map can be downloaded from Auckland Council's web site if an aerial photograph is required.

Condition 7: Lapse date
The consent must lapse five years from the decision to grant unless given effect to prior to that date.

Advice Notes

Advice note 1: Email contact details

All information required by the Council in this consent can be sent to monitoring@aucklandcouncil.govt.nz.

Advice note 2: Drinking water standards

The consent holder is advised that groundwater supplied for human consumption should meet the requirements of the Drinking Water Standards for New Zealand (2022), the Health Act 1956, as amended by the Health (Drinking Water) Amendment Act 2007 (HDWAA) and any other Ministry of Health requirements, such as those contained in the Health (Drinking Water) Amendment Act 2007.

Advice note 3: Compliance with regional rules

There are regional rules that cover the ongoing use, maintenance, restoration, alteration, replacement or decommissioning of the bore which must be complied with. These rules are detailed in the Auckland Unitary Plan (Operative in Part).

Advice note 4: Avoiding contamination of aquifer

The consent holder is advised to install a non-return valve of acceptable NZ Standards on the proposed bore to prevent the backflow of water into the bore.

Advice note 5: Use of water

The taking and use of water is regulated by s14(3)(b) of the RMA and the Auckland Unitary Plan. If your proposed water take is not provided for by s14(3)(b) or by a permitted activity rule in the AUP(OP) then you require a resource consent to lawfully take and use water. See Chapter E7 of the AUP(OP).