

## **SUBDIVISION CONDITIONS – TWO LOT SUBDIVISION OF LOT 1002**

### **General conditions**

1. The subdivision and all associated activities shall be carried out in general accordance with the documents and drawings and all supporting additional information submitted with the application, detailed below, and all referenced by the council as resource consent numbers xxx.

Application Form and Assessment of Environmental Effects prepared by Purpose Planning, dated 6 July 2022.

<b>Drawing title and reference</b>	<b>Author</b>	<b>Revision</b>	<b>Date</b>
Proposed Subdivision (Step 1) Linwood Road / Dyke Road, Karaka Ref 8284 – drawing 1	Yeomans Survey Solutions	-	June 2022
Proposed Subdivision (Step 1) Linwood Road / Dyke Road, Karaka Ref 8284 – drawing 2	Yeomans Survey Solutions	-	June 2022

### **Lapsing of consent**

2. In accordance with clause 37(7) of Schedule 6 to the COVID-19 Recovery (Fast-Track Consenting) Act 2020, this consent lapses two years after the date it commences unless the consent is given effect to prior.

### **Monitoring**

3. The consent holder shall pay the council monitoring charges to recover the actual and reasonable costs incurred to ensure compliance with the conditions attached to this consent/s.

### **223 conditions**

4. The consent holder must submit a survey plan in accordance with the approved resource consent subdivision scheme plan entitled “*Proposed Subdivision (Step 1), Linwood Road / Dyke Road, Karaka*” dated June 2022. The survey plan must show all easements, cancellation of easements and any amalgamation conditions, required by this subdivision consent.

### **224c conditions**

5. The application for a certificate under section 224(c) of the RMA must be accompanied by certification from a professionally qualified surveyor or engineer that all the conditions of subdivision consent SUBxxxxxx have been complied with, and identify all those conditions that have not been complied with and are subject to a consent notice to be issued in relation to any conditions of this consent to which section 221 applies.

## **LANDUSE CONDITIONS - EARTHWORKS, CONTAMINATED LAND, VEGETATION REMOVAL, WATER & WASTEWATER TREATMENT PLANT**

### **General conditions**

6. The earthworks, land remediation, vegetation removal, water and wastewater treatment plant and all associated activities shall be carried out in general accordance with the documents and drawings and all supporting additional information submitted with the

application, detailed below, and all referenced by the council as resource consent numbers xxx.

Application Form and Assessment of Environmental Effects prepared by Purpose Planning, dated 6 July 2022.

<b>Drawing title and reference</b>	<b>Author</b>	<b>Revision</b>	<b>Date</b>
Karaka Subdivision Water & Wastewater Treatment Plant Site Layout – Irrigation Zones Drawing 2010203-L.004	Apex Environmental	A	7 July 2021
Karaka North Village Irrigation Field – Specimen Design Drawing 210203-P.001	Apex Environmental	A	11 November 2021
Karaka North Village Concept Layout Biological Reactor Tanks Drawing 210203-SKC.003	Apex Water	-	-
Karaka North Village Concept Layout Treated Wastewater Reservoir Drawing 210203-SKC.004	Apex Water	-	-
Karaka North Village Concept Layout Treated Water Reservoir Drawing 210203-SKC.005	Apex Water	-	-
Karaka North Village Concept Layout Wastewater Treatment Plant Building Drawing 210203-SKC.001	Apex Water	-	-
Karaka North Village Concept Layout Water Treatment Plant Building Drawing 210203-SKC.002	Apex Water	-	-
KWTP & KWWTP Site General Layout – Plan Drawing 200107 L000 Sheet 2/5	Apex Water	8	2 June 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 1/11 – Drawing 210912/37	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 2/11 – Drawing 210912/38	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 3/11 – Drawing 210912/39	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 4/11 – Drawing 210912/40	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 5/11 – Drawing 210912/41	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 6/11 – Drawing 210912/42	Greenwood Associates	-	1 March 2022

Karaka North Village Landscape Plan Set – Key Plan Set Stream 7/11 – Drawing 210912/43	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 8/11 – Drawing 210912/44	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 9/11 – Drawing 210912/45	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 10/11 – Drawing 210912/46	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 11/11 – Drawing 210912/47	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Water Treatment 1/2 – Drawing 210912/57	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Water Treatment 2/2 – Drawing 210912/58	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Planting Detail – Drawing 210912/59	Greenwood Associates	-	1 March 2022
Karaka North Village Cut and Fill Overall Plan – Drawing 2100	Calthom Consultants	F	27 June 2022
Karaka North Village Cut and Fill Part Plan Sheet 4 – Drawing 2104	Calthom Consultants	F	17 June 2022
Karaka North Village Cut and Fill Part Plan Sheet 12 – Drawing 2112	Calthom Consultants	F	27 June 2022
Karaka North Village Cut and Fill Part Plan Sheet 13 – Drawing 2113	Calthom Consultants	F	17 June 2022

<b>Report title and reference</b>	<b>Author</b>	<b>Revision</b>	<b>Date</b>
Karaka North Village- operational noise assessment for the on-site water treatment and wastewater treatment and disposal system, the community venue and activities in the Local Centre Zone	Styles Group	-	18 January 2022
Letter – On-site wastewater treatment and disposal and National Environmental Standards for Sources of Human Drinking Water	Apex Water	-	10 February 2022
Karaka North Development – Treated Wastewater Discharge Assessment	Babbage	Final 1	14 February 2022

Karaka North Village WWTP – Odour Assessment	Tonkin & Taylor	C	18 January 2022
Design Report Karaka North Village Water & Wastewater Treatment	Apex Environmental	3	8 February 2022
Water and Wastewater Treatment at Karaka North Village – Hazardous Substances and Industrial Trade Activity Assessment	Tonkin & Taylor	1.3	17 March 2022
Preliminary Environmental Site Investigation – 348 Linwood Road and 69A Dyke Road	Engeo	-	15 September 2021
Detailed Environmental Site Investigation – 348 Linwood Road and 69A Dyke Road	Engeo	-	21 October 2021
Remediation Action Plan and Site Management Plan – 348 Linwood Road and 69A Dyke Road	Engeo	-	21 January 2022
Arboricultural assessment – Karaka North Village Development	Peers Brown Miller	V4	5 March 2022
Geotechnical Investigation Report Proposed Karaka North Village Ref 150711-C	Riley Consultants	-	16 November 2021
Karaka North Village: archaeological assessment. Ref 19-1082	CFG Heritage	-	20 June 2022
Karaka North Village - Infrastructure Design Report for 327 Lot Subdivision	Calthom Consultants	B	27 June 2022
Residential Development 348 Linwood Road, Karaka North - Integrated Transport Assessment	Commute	-	14 March 2022
Residential Development 348 Linwood Road, Karaka North – Addendum Report	Commute	-	27 June 2022
Karaka North Village – Ecological Assessment – Ref 63179	Bioresearches	5	2 February 2022
Native Lizard Management Plan – Karaka North	Bioresearches	2	5 October 2021
Karaka North Village Stream Management Plan	Greenwood Associates	-	October 2021
Urban Design Assessment – Karaka North Village	Urbanism Plus	-	June 2022
Karaka North Village Stormwater Management Plan	Calthom Consultants	Final	20 September 2021

### Lapsing of consent

7. In accordance with clause 37(7) of Schedule 6 to the COVID-19 Recovery (Fast-Track Consenting) Act 2020, this consent lapses two years after the date it commences unless the consent is given effect to prior.

### **Monitoring**

8. The consent holder shall pay the council monitoring charges to recover the actual and reasonable costs incurred to ensure compliance with the conditions attached to this consent/s.

## **SPECIFIC CONDITIONS - EARTHWORKS, CONTAMINATED LAND AND VEGETATION REMOVAL**

### **Pre-commencement conditions**

#### **Notification of works**

9. The Team Leader, Southern Compliance Monitoring, shall be informed, in writing, at least five working days prior to the start date of the works authorised by this consent.

#### **Pre-start Meeting**

10. Prior to commencement of the earthworks activity, the consent holder is to arrange and conduct a pre-start meeting that:
  - a) is located on the site;
  - b) is scheduled not less than five days before the anticipated commencement of earthworks;
  - c) includes Auckland Council officer[s];
  - d) includes representation from the contractors who will be undertaking the works; and
  - e) invites representation of relevant iwi / mana whenua groups.

The meeting is to discuss the erosion and sediment control measures, the earthworks methodology and to ensure all relevant parties are aware of and familiar with the conditions of this consent.

A pre-start meeting must be held prior to the commencement of the earthworks activity in each period between October 1 and April 30 that this consent is exercised.

The following information is to be made available by the consent holder at the pre-start meeting:

- f) timeframes for key stages of the works authorised by this consent
- g) resource consent conditions
- h) approved Erosion and Sediment Control Plan
- i) approved Chemical Treatment Management Plan
- j) approved Construction Management Plan

#### *Advice Note:*

*To arrange the pre-start meeting please contact the Team Leader – Southern Compliance Monitoring. All additional information required by the Council should be provided two days prior to the meeting.*

*The consent holder is encouraged to engage with local Iwi to carry out cultural education of the contractor & staff, and discuss cultural monitoring procedures as part of the pre-commencement meeting.*

### **Site Blessing, cultural education and pre-commencement meeting**

11. Prior to commencement of the earthworks activity, the consent holder is to invite local Iwi to carry out a site blessing, carry out cultural education for the contractor and their staff, and attend a pre-commencement meeting to identify specific areas that require ongoing cultural monitoring.

### **Erosion and sediment control plan**

12. Prior to commencement of the earthworks activity on the site, a finalised Erosion and Sediment Control Management Plan (“ESCP”) is to be prepared and submitted to the Team Leader – Southern Monitoring for approval. No earthworks activity on the site is to commence until approval has been given by the Team Leader for the ESCP.

The ESCP is to contain sufficient detail to address the following matters:

- specific erosion and sediment control works (location, dimensions, capacity);
- supporting calculations and design drawings as necessary;
- catchment boundaries and contour information;
- details of construction methods;
- confirmation that the site is capable of managing the 20 year ARI rainfall event;
- timing and duration of construction and operation of control works (in relation to the staging and sequencing of earthworks)
- details relating to the management of exposed areas (e.g. grassing, mulching)
- monitoring and maintenance requirements.

The confirmed ESCP is to be implemented.

*Advice Note:*

*Where practicable, the consent holder is encouraged to utilize organic flocculant rather than chemical dosing.*

13. Prior to bulk earthworks commencing, a certificate signed by an appropriately qualified and experienced engineer is to be submitted to the Team Leader – Southern Monitoring to certify that the erosion and sediment controls have been constructed in accordance with the approved erosion and sediment control plan. The certified controls are to include the diversion bunds and the stabilised construction entrance, and, if necessary, any sediment retention / impoundment devices. Certification for these subsequent measures is to be supplied immediately on completion of their construction. The information supplied if applicable, is to include:

- a) contributing catchment areas;
- b) shape of structures (including dimensions);
- c) position of inlets/outlets; and
- d) stabilisation of the structures.

### **Chemical Treatment Management Plan**

14. Prior to the pre-commencement meeting, a Chemical Treatment Management Plan (CTMP) must be submitted for the written approval of the Team Leader – Southern Monitoring. The plan shall include as a minimum:

- a) Specific design details of the chemical treatment system based on a rainfall activated methodology for the site’s decanting earth bund;
- b) Monitoring, maintenance (including post storm) and contingency programme (including a record sheet);
- c) Details of optimum dosage (including assumptions);
- d) Results of initial chemical treatment trial;
- e) A spill contingency plan; and
- f) Details of the person or bodies that will hold responsibility for long term operation and maintenance of the chemical treatment system and the organisational structure which will support this system

### **Construction Management Plan**

15. At least 5 working days prior to the commencement of works on site, the consent holder shall submit to the Team Leader Monitoring South, a Construction Management Plan (CMP) for approval. The purpose of the CMP is to set out the management procedures and construction methods to be undertaken in order to avoid, remedy, or mitigate potential adverse effects arising from the construction period.

Contact details of the appointed contractor or project manager (24-hour contact details - phone number, e-mail, postal address). The location of a large notice board on the site visible from a public place that clearly identifies the name, telephone number, email and address for service of the Site Manager.

- (a) A general outline of the construction programme.
  - (b) Measures to be adopted to maintain areas of the site that are visible from public spaces and private property in a tidy condition in terms of rubbish disposal, storage and unloading of materials, etc.
  - (c) Measures to stockpile unearthed debris, preferably away from public roads and reserves, and their disposal.
  - (d) Plans showing areas where stockpiles, equipment (including contractor parking) will occur so that there is no obstruction of public spaces (e.g. roads).
  - (e) Plans showing the location of any site offices, staff facilities and staff car parking required during the construction period.
  - (f) Ingress and egress to and from the site for vehicles and construction machinery during the works period.
  - (g) Proposed hours of work on the site.
  - (h) An overview of measures that will be adopted to prevent unauthorised public access during the construction period.
  - (i) Procedures for controlling sediment run-off, dust, and the removal/ introduction of soil, debris, and materials associated with construction.
16. The CMP shall be implemented and maintained throughout the construction period. The CMP shall contain specific details relating to the construction and management of the approved works, including:
- (a) Dust mitigation/suppression measures to ensure that there is no airborne or deposited dust beyond the subject site as a result of the earthworks activity that is noxious, offensive or objectionable
  - (b) Procedures for ensuring that owners and /or occupants in the immediate vicinity of the construction area are given prior notice of the commencement of construction activities and are informed about the expected duration of works and potential effects of the works (e.g. noise associated with construction activities).
  - (c) Temporary protection measures that will be installed to ensure that there shall be no damage to public roads, footpaths, berms, kerbs, drains, reserves or other public assets as a result of the earthworks and construction activities.
  - (d) All necessary steps shall be taken to avoid unnecessary damage to other utility services, roading network or private property, and any damage shall be made good at the consent holder's expense.

No works on the subject site shall commence until written confirmation from the Team Leader, Monitoring South is provided that the CMP is satisfactory. The approved CMP shall be implemented for the duration of the entire works period.

### **Construction Traffic Management Plan**

17. Prior to the commencement of any works on the site, the consent holder shall submit to and have approved by the Council, a Construction Traffic Management Plan (CTMP). The CTMP shall be prepared in accordance with the Council's requirements for traffic management plans or CTMPs (as applicable) and New Zealand Transport Authority's Code of Practice for Temporary Traffic Management and shall address the surrounding environment including pedestrian and bicycle traffic. No construction activity shall

commence until the CTMP has been approved by the Council and all construction traffic shall be managed at all times in accordance with the approved CTMP.

### **Native Lizard Management**

18. Prior to the commencement of any vegetation removal works the Consent Holder must implement the approved Native Lizard Management Plan (NLMP). A Works Completion report shall be submitted to the Team Leader – Southern Monitoring, on completion of all vegetation removal.

### **During construction conditions**

#### **Earthworks**

19. The operational effectiveness and efficiency of all erosion and sediment control measures specifically required as a condition of resource consent or by the Erosion and Sediment Control Plan must be maintained throughout the duration of earthworks activity, or until the site is permanently stabilised against erosion.

#### **Advice Note:**

*As a guide, maintenance of the erosion and sediment control measures must seek to ensure that the accumulated sediment be removed from sediment retention devices prior to reaching 20% of its storage capacity. Sediment removed from treatment devices must be placed on stable ground where it cannot re-enter the device or be washed into any watercourse.*

*Where maintenance work is required to ensure the effectiveness of these erosion and sediment control measures, the record should include the date, time and details on the nature of any maintenance. The site manager (or equivalent) will need to ensure regular inspections of these measures, and particularly within 24 hours after any rainstorm event. Where it is identified that erosion and sediment control measures have become ineffective and maintenance is required, Council must be contacted (email [monitoring@aucklandcouncil.govt.nz](mailto:monitoring@aucklandcouncil.govt.nz)).*

20. Prior to the removal of any erosion and sediment control devices specifically required as a condition of resource consent, or diversion of completed areas to a Clean Water Diversion, written certification must be provided to Council by a suitably qualified and experienced person to confirm that all areas of bare earth have been permanently stabilised against erosion in accordance with GD05.

#### **Cultural monitoring**

21. The Consent Holder is to invite local Iwi to carry out cultural monitoring on site in accordance with the outcomes of the pre-commencement cultural education / meeting as required in Condition 10.

#### **Ensure construction and earthworks activities do not obstruct access**

22. There shall be no obstruction of access to public footpaths, berms, private properties, public services/utilities, or public reserves resulting from the construction and/or earthworks activity. All materials and equipment shall be stored within the subject site's boundaries.

#### **Ensure dust does not cause adverse effects**

23. There shall be no airborne or deposited dust beyond the subject site as a result of the earthworks that in the opinion of Council's Team Leader - Southern Monitoring, is noxious, offensive or objectionable.

#### **Accidental Damage**

24. There shall be no damage to public roads, footpaths, berms, kerbs, drains, reserves or other public assets as a result of the earthworks activity. In the event that such damage



does occur, Council's Team Leader - Southern Monitoring shall be notified within 24 hours of its discovery.

25. Any damaged footpath, kerb, crossing as a result of the construction work shall be repaired, reinstated or reconstructed in accordance with the Auckland Transport Code of Practice to the satisfaction of the Council's Manager Regulatory Engineering South. The costs of rectifying such damage and restoring the asset to its original condition will be met by the consent holder.

### **Silt Discharges**

26. All earthworks shall be managed to ensure that no debris, soil, silt, sediment or sediment-laden water is discharged beyond the subject site to either land, stormwater drainage systems, watercourses or receiving waters. In the event that a discharge occurs, works shall cease immediately and the discharge shall be mitigated and/or rectified to the satisfaction of Council's Team Leader - Southern Monitoring.

### **Deposition**

27. There shall be no deposition of earth, mud, dirt or other debris on any public road or footpath resulting from earthworks activity on the subject site. In the event that such deposition does occur, it shall immediately be removed. In no instance shall roads or footpaths be washed down with water without appropriate erosion and sediment control measures in place to prevent contamination of the stormwater drainage system, watercourses or receiving waters.
28. The site must be progressively stabilised against erosion at all stages of the earthworks activity and sequenced to minimise the discharge of contaminants to groundwater and/or surface water.

#### *Advice Note:*

*Interim stabilisation measures in accordance with this condition may include:*

- *the use of waterproof covers, geotextiles, or mulch;*
- *top-soiling and grassing otherwise bare areas of earth; and*
- *aggregate or vegetative cover that has obtained a density of more than 80% of a normal pasture sward.*

*It is recommended that you discuss any potential measures with the Council's monitoring officer who may be able to provide further guidance on the most appropriate approach to take. Please contact the Team Manager, Resource Consents Project Management. Alternatively, please refer to the Council's Technical Publication No. 90, 'Erosion and Sediment Control Guidelines for Land Disturbing Activities in the Auckland Region'.*

29. Immediately upon completion or abandonment of earthworks on the subject site, all areas of bare earth must be permanently stabilised to the satisfaction of the Council.

#### *Advice Note:*

*Should any earthworks be completed or abandoned, bare areas of earth associated with the works must be permanently stabilised against erosion. Measures may include:*

- o *The use of mulching or natural fibre matting.*
- o *Top-soiling, grassing and mulching of otherwise bare areas of earth.*
- o *Aggregate or vegetative cover that has obtained a density of more than 80% of a normal pasture sward.*

*The on-going monitoring of these measures is the responsibility of the consent holder. It is recommended that you discuss any potential measures with the Council's monitoring officer who will guide you on the most appropriate approach to take. Alternatively, please refer to Auckland Council Guidance Document 005, Erosion and Sediment Control Guide*

*for Land Disturbing Activities in the Auckland Region, June 2016, Incorporating Amendment 1 (GD05).*

### **Seasonal restrictions**

30. No earthworks are to be undertaken on the site between 30 April and 1 October in any year without the prior written approval of the Team Leader – Southern Monitoring at least two weeks prior to 30 April of any year. Revegetation/ stabilization is to be completed by 30 April in accordance with measures detailed in TP90 and any amendments to that document.

### **Including Unrecorded Archaeological Sites within the Cultural Heritage Inventory**

31. In the event that any unrecorded archaeological sites are exposed as a result of consented work on the site, then these sites shall be recorded by the consent holder for inclusion within the Auckland Council Cultural Heritage Inventory. The consent holder shall prepare documentation suitable for inclusion in the Cultural Heritage Inventory and forward the information to the Team Leader (for the Manager: Heritage Unit, heritageconsents@aucklandcouncil.govt.nz) within one calendar month of the completion of work on the site.

The consent holder shall also advise representatives from local Iwi Ngati Te Ata, Te Akitai Waiohau and Ngati Tamaoho upon the discovery of any unrecorded archaeological sites.

### **Protection of middens**

32. Any existing middens as identified in the archaeological report 'Karakā North Village: archaeological assessment' by CFG Heritage dated 20 June 2022 shall be located and fenced off and any earthworks located within 10m of the middens, shall be supervised by a suitably qualified archaeologist.

### **Advice Note**

*Heritage New Zealand Pouhere Taonga Act 2014*

*The Heritage New Zealand Pouhere Taonga Act 2014 (hereafter referred to as the Act) provides for the identification, protection, preservation and conservation of the historic and cultural heritage of New Zealand. All archaeological sites are protected by the provisions of the Act (section 42). It is unlawful to modify, damage or destroy an archaeological site without prior authority from Heritage New Zealand Pouhere Taonga. An Authority is required whether or not the land on which an archaeological site may be present is designated, a resource or building consent has been granted, or the activity is permitted under the Auckland Unitary Plan Operative in part (November 2016).*

*According to the Act (section 6) archaeological site means, subject to section 42(3) –*

*a) any place in New Zealand, including any building or structure (or part of a building or structure), that –*

*i. was associated with human activity that occurred before 1900 or is the site of the wreck of any vessel where the wreck occurred before 1900; and*

*ii. provides or may provide, through investigation by archaeological methods, evidence relating to the history of New Zealand; and*

*b) includes a site for which a declaration is made under section 43(1)*

*It is the responsibility of the consent holder to consult with Heritage New Zealand Pouhere Taonga about the requirements of the Act and to obtain the necessary Authorities under the Act should these become necessary, as a result of any activity associated with the consented proposals.*

*For information please contact the Heritage New Zealand Pouhere Taonga Northern Regional Archaeologist – 09 307 0413 / archaeologistMN@historic.org.nz.*

*Protected Objects Act 1975 –*

*Māori artefacts such as carvings, stone adzes, and greenstone objects are considered to be tāonga (treasures). These are taonga tūturu within the meaning of the Protected Objects Act 1975 (hereafter referred to as the Act).*

*According to the Act (section 2) taonga tūturu means an object that –*

- a) relates to Māori culture, history, or society; and*
- b) was, or appears to have been –*
  - i. manufactured or modified in New Zealand by Māori; or*
  - ii. brought into New Zealand by Māori; or*
  - iii. used by Māori; and*
- c) is more than 50 years old*

*The Act is administered by the Ministry of Culture and Heritage. Tāonga may be discovered in isolated contexts, but are generally found within archaeological sites. The provisions of the Heritage New Zealand Pouhere Taonga Act 2014 in relation to the modification of an archaeological site should be considered by the consent holder if tāonga are found within an archaeological site, as defined by the Heritage New Zealand Pouhere Taonga Act 2014.*

*It is the responsibility of the consent holder to notify either the chief executive of the Ministry of Culture and Heritage or the nearest public museum (for Auckland this is the Auckland War Memorial Museum), which shall notify the chief executive, of the finding of the taonga tūturu, within 28 days of finding the taonga tūturu; alternatively provided that in the case of any taonga tūturu found during the course of any archaeological investigation authorised by Heritage New Zealand Pouhere Taonga under section 48 of the Heritage New Zealand Pouhere Taonga Act 2014, the notification shall be made within 28 days of the completion of the field work undertaken in connection with the investigation.*

*Under section 11 of the Act, newly found taonga tūturu are in the first instance Crown owned until a determination on ownership is made by the Māori Land Court.*

### **Construction Noise**

33. All noise generating activities associated with the implementation of this resource consent on, or in the vicinity of, the subject site (which can include any demolition, earthworks and construction activities, and ancillary activities (such as deliveries, loading and unloading goods, transferring tools, etc) shall not exceed the noise limits stipulated within NZS 6803:1999 Acoustics – Construction Noise (or any subsequent revision), and may only be carried out:
- Monday to Saturday – between the hours of 7.00 am and 7.00 pm
  - Sundays and Public Holidays – No works

### **Geotechnical**

34. The construction of all earthworks including the placement and compaction of fill materials shall be supervised by a suitably qualified engineering professional. In supervising the works, the suitably qualified engineering professional shall ensure that they are constructed and otherwise completed in accordance with the approved plans forming part of the application.
35. Certification from a suitably qualified engineering professional responsible for supervising the works shall be provided to the Council's Team Leader Regulatory Engineering South confirming that the works for each stage have been completed in accordance with approved plans within ten (10) working days following completion of the respective stage. Written certification shall be in the form of a Geotechnical Completion Report, producer statement or any other form acceptable to Council.
36. All earthworks and excavation must be monitored and supervised on-site by a Supervising Engineer and in accordance with the requirements of the Riley Consultants Report titled

'Geotechnical Investigation Report Proposed Karaka North Village Corner Dyke and Linwood Roads, Karaka, ref 150711-C, dated 3<sup>rd</sup> November 2021. When the earthworks are completed an Engineer's Certificate and Geotechnical Completion Report must be provided to the satisfaction of the Council's Team Leader Regulatory Engineering South, certifying:

- a) That the works were undertaken in accordance with NZS4431 & NZS4404; AND
- b) The suitability of the filled ground and the original unfilled ground for the erection of light timber framed residential buildings or other consented uses; AND
- c) Recommendations for each lot, and as built records of earthworks and drainage; AND
- d) The extent to which settlement of the site is expected and its impact on future construction; AND
- f) Include a statement of professional opinion as to the suitability of the site for residential development or other forms of consented development.

### **Contamination**

37. Prior to any earthworks within 20m of the contamination hotspot areas identified in the Engeo report titled Detailed Environmental Site Investigation – 348 Linwood Road and 69A Dyke Road, Karaka, project reference 16861.000.000 dated 21/10/2021, remediation works in accordance with the approved Engeo Remediation Action Plan and Site Management Plan dated 20/10/2021 shall be implemented. Any changes to either of those plans must be approved in writing by the Team Leader Southern Monitoring, Auckland Council prior to implementation.
38. Contaminated soil removed from the site must be deposited at a lawful disposal site that holds a current consent to accept the relevant level of contamination.
39. The consent holder must ensure and document to Council's Team Leader - Southern Monitoring that the contamination level of any imported soil complies with the Council's cleanfill acceptance criteria.
40. If evidence of unexpected contamination is discovered during any earthworks, the consent holder must immediately cease works in the vicinity of the contamination, and notify and provide a contamination report to the satisfaction of the Team Leader Southern Monitoring, Auckland Council.
41. Within three months following completion of the remediation works the consent holder is to provide a site validation report ("SVR") to the satisfaction of the Team Leader Southern Monitoring, Auckland Council. Where applicable the SVR must include the following:
  - A summary of the works undertaken, including a statement whether the remediation work has been completed in accordance with the approved RAP/SMP;
  - Scaled plans (plan and elevation views) showing the location and containment details (if any) of any contaminated materials remaining on the site;
  - A summary of any validation and other testing undertaken, including tabulated analytical results, and interpretation of the results against the proposed land use criteria of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011;
  - Conditions of the final site ground surface;
  - Details of any complaints investigations made regarding the contamination remediation works on the site;
  - Details of any incidents related to on-site contamination and how each was resolved;
  - An on-going monitoring and management plan (if applicable).

*Advice Note:*

*When due to its age a building may contain asbestos-containing materials (“ACM”):*

- *A consent holder has obligations under relevant Regulations for the management and removal of asbestos, including a need to engage a person holding a WorkSafe NZ Certificate of Competence for restricted works involving asbestos, to confirm the presence or absence of any ACM.*
- *If any ACM is found, its removal or demolition must meet the Health and Safety at Work (Asbestos) Regulations 2016.*
- *Information on asbestos containing materials and the obligations may be found at [www.worksafe.govt.nz](http://www.worksafe.govt.nz).*

### **Tree Protection**

42. Vegetation alteration and removal shall implement the Stream Restoration Management Plan in accordance with conditions 43 to 54 below, to the satisfaction of the Council.
43. Prior to any works commencing on the site in the vicinity of any of the protected trees/vegetation, a meeting shall be held at the site to discuss all issues pertaining to the protection of the trees and to gain a common understanding of the relevant conditions of consent in that regard. Present at the meeting shall be;
  - The consent holder
  - The site foreman or project manager
  - The worksite supervisory arborist
  - The project landscape expert
44. Vegetation clearance works shall be undertaken in accordance with the general approach outlined in Section 6.0 of the Arboricultural Assessment by Peers Brown Miller, and the Stream Management Plan by Greenwood Associates, to the satisfaction of the Council. Tree removal shall be limited to dead or dying exotic trees and pest plants. The works arborist shall be informed and engaged to clearly mark trees to be retained (for example with tape or spray paint). A tree works strategy shall be provided to the works arborist by the tree removal contractor (prior to the start of works) to ensure all trees to be retained are adequately protected where tree removal is undertaken nearby to any tree proposed for retention.
45. Protective fencing shall be constructed as necessary to protect the root zone of any trees/ or groups of trees to be retained (for example with waratah standards & orange mesh) where earthworks are to be undertaken within or at the edge of the dripline of any such tree.
46. Any silt fences required as part of environmental controls shall involve the inclusion of filter socks and not be ‘toed in’ so as to avoid damage to the roots of those trees to be retained. A 1.0m offset shall be provided from the dripline of any tree or group of trees to be retained to ensure unnecessary excavation or canopy damage does not occur within the root zone of a retained tree. Where practical, silt fencing shall be incorporated into the required temporary fencing to avoid unnecessary disturbance.
47. Where a clear water diversion bund is required, this shall utilise material from beyond the dripline of any protected tree to avoid root disturbance. Ideally, as with silt fencing, a 1.0m setback shall be employed where space allows to the satisfaction of the Council.

48. Where further environmental control measures are required, these shall be approved and discussed by the worksite supervisory arborist prior to installation.
49. All tree removal and pruning works within 3 metres of full extent of clearance, where the clearance meets the retained vegetation, shall be undertaken by a suitably qualified arborist in accordance with best practice so as to avoid damage to any retained tree to the satisfaction of Council.
50. The worksite arborist shall be aware of and broadly oversee any excavations through the dripline of any trees or vegetation to be retained. Any scraping of soil within the driplines of trees within areas outside those identified in the Arboricultural Assessment by Peers Brown Miller shall be discussed and approved by the works arborist, prior to works commencing.
51. No machinery or equipment or materials shall be stored or deposited within the dripline area of any protected tree within the site.
52. If any pruning is to be undertaken in order to deliver materials, this pruning shall be kept to a minimum, discussed and approved by the appointed works arborist, and undertaken by a suitably experienced arborist.
53. No tracking or movement of equipment, trucks or machinery is to be undertaken within the rootzone of protected trees. A mulch accessway or track-mats shall be utilised in order to avoid damage to tree roots if movement is required within any protected rootzone to the satisfaction of the Council.
54. Compliance with all conditions of consent relating to tree protection shall be monitored by the works arborist - with the detail of each visit and communication being logged. The completed log shall be provided to the consent holder at the completion of the project to serve as a compliance report.

#### **Specific conditions – Discharge permit DISxxx**

55. In accordance with clause 37(7) of Schedule 6 to the COVID-19 Recovery (Fast-Track Consenting) Act 2020, Consent DISxxxxx lapses two years after the date it commences unless the consent is given effect to prior.
56. Any perched groundwater, or surface water encountered within the remediation excavation area requiring removal must be considered potentially contaminated, and therefore, for the protection of the human health and the environment, the impacted water must either be:
  - a. disposed of by a licenced liquid waste contractor; or
  - b. pumped to sewer, providing the relevant permits are obtained; or
  - c. discharged to the site's stormwater system or surface waters provided testing demonstrates compliance with the Australian and New Zealand Environment Conservation Council (ANZECC) Guidelines for Fresh and Marine Water Quality (2000) for protection of 80 percent of freshwater species, except for benzene where 95 per cent of species must apply.

### **SPECIFIC CONDITIONS - WATER & WASTEWATER TREATMENT PLANT**

#### **Pre-commencement conditions**

#### **Architectural and Landscape Plans**

57. Prior to the commencement of the water and wastewater treatment plant works, architectural and landscape detail drawings must be submitted to Council for written certification by the Council.

The finalised set of drawings must ensure that the buildings proposed architectural / landscape treatment is generally consistent with the plans and information referenced at condition 6.

#### **Notification of works**

58. The Team Leader, Southern Compliance Monitoring, shall be informed, in writing, at least five working days prior to the start date of the works authorised by this consent.

#### **Pre-start Meeting**

59. Prior to the commencement of the activity, the consent holder shall hold a pre-start meeting that:
- (a) Is located on the subject site;
  - (b) Is scheduled not less than five days before the anticipated commencement of earthworks;
  - (c) Includes representation from the Team Leader Monitoring South; and
  - (d) Includes representation from the contractors who will undertake the works.
  - (e) The meeting shall discuss the erosion and sediment control measures, the earthworks methodologies and shall ensure all relevant parties are aware of and familiar with the necessary conditions of this consent.

The following information shall be made available at the pre-start meeting:

- (f) Timeframes for key stages of the works authorised under this consent;
- (g) Resource consent conditions; and
- (h) Construction Management Plan.
- (i) Erosion and Sediment Control Plan

#### **Advice Note:**

*To arrange the pre-start meeting required by condition 59 please contact the Team Leader, Monitoring South at [monitoring@aucklandcouncil.govt.nz](mailto:monitoring@aucklandcouncil.govt.nz) or 09 301 01 01. The conditions of consent should be discussed at this meeting. All additional information required by the Council should be provided two days prior to the meeting.*

#### **Construction Management Plan**

60. At least 5 working days prior to the commencement of works on site, the consent holder shall submit to the Team Leader Monitoring South, a Construction Management Plan (CMP) for approval. The purpose of the CMP is to set out the management procedures and construction methods to be undertaken in order to avoid, remedy, or mitigate potential adverse effects arising from the construction period.

Contact details of the appointed contractor or project manager (24-hour contact details - phone number, e-mail, postal address). The location of a large notice board on the site visible from a public place that clearly identifies the name, telephone number, email and address for service of the Site Manager.

- (a) A general outline of the construction programme.
- (b) Measures to be adopted to maintain areas of the site that are visible from public spaces and private property in a tidy condition in terms of rubbish disposal, storage and unloading of materials, etc.
- (c) Measures to stockpile unearthed debris, preferably away from public roads and reserves, and their disposal.
- (d) Plans showing areas where stockpiles, equipment (including contractor parking) will occur so that there is no obstruction of public spaces (e.g. roads).

- (e) Plans showing the location of any site offices, staff facilities and staff car parking required during the construction period.
- (f) Ingress and egress to and from the site for vehicles and construction machinery during the works period.
- (g) Proposed hours of work on the site.
- (h) An overview of measures that will be adopted to prevent unauthorised public access during the construction period.
- (i) Procedures for controlling sediment run-off, dust, and the removal/ introduction of soil, debris, and materials associated with construction.

61. The CMP shall be implemented and maintained throughout the construction period. The CMP shall contain specific details relating to the construction and management of the approved works, including:

- (a) Dust mitigation/suppression measures to ensure that there is no airborne or deposited dust beyond the subject site as a result of the earthworks activity that is noxious, offensive or objectionable
- (b) Procedures for ensuring that owners and /or occupants in the immediate vicinity of the construction area are given prior notice of the commencement of construction activities and are informed about the expected duration of works and potential effects of the works (e.g. noise associated with construction activities).
- (c) Temporary protection measures that will be installed to ensure that there shall be no damage to public roads, footpaths, berms, kerbs, drains, reserves or other public assets as a result of the earthworks and construction activities.
- (d) All necessary steps shall be taken to avoid unnecessary damage to other utility services, roading network or private property, and any damage shall be made good at the consent holder's expense.

No works on the subject site shall commence until written confirmation from Council's Team Leader, Monitoring South is provided that the CMP is satisfactory. The approved CMP shall be implemented for the duration of the entire works period.

#### **Erosion and sediment control plan**

62. Prior to commencement of the earthworks activity on the site, a finalised Erosion and Sediment Control Management Plan ("ESCP") is to be prepared and submitted to the Team Leader – Southern Monitoring for approval. No earthworks activity on the site is to commence until approval has been given by the Team Leader for the ESCP.

The ESCP is to contain sufficient detail to address the following matters:

- specific erosion and sediment control works (location, dimensions, capacity);
- supporting calculations and design drawings as necessary;
- catchment boundaries and contour information;
- details of construction methods;
- confirmation that the site is capable of managing the 20 year ARI rainfall event;
- timing and duration of construction and operation of control works (in relation to the staging and sequencing of earthworks)
- details relating to the management of exposed areas (e.g. grassing, mulching)
- monitoring and maintenance requirements.

The confirmed ESCP is to be implemented.

#### **During construction conditions**

**Ensure construction and earthworks activities do not obstruct access**



63. There shall be no obstruction of access to public footpaths, berms, private properties, public services/utilities, or public reserves resulting from the construction and/or earthworks activity. All materials and equipment shall be stored within the subject site's boundaries.

**Ensure dust does not cause adverse effects**

64. There shall be no airborne or deposited dust beyond the subject site as a result of the earthworks that in the opinion of Council's Team Leader Southern Monitoring, is noxious, offensive or objectionable.

**Accidental Damage**

65. There shall be no damage to public roads, footpaths, berms, kerbs, drains, reserves or other public asset as a result of the earthworks activity. In the event that such damage does occur, Council's Team Leader Southern Monitoring shall be notified within 24 hours of its discovery.
66. Any damaged footpath, kerb, crossing as a result of the construction work shall be repaired, reinstated or reconstructed in accordance with the Auckland Transport Code of Practice to the satisfaction of the Council's Manager Regulatory Engineering South. The costs of rectifying such damage and restoring the asset to its original condition will be met by the consent holder.

**Silt Discharges**

67. All earthworks shall be managed to ensure that no debris, soil, silt, sediment or sediment-laden water is discharged beyond the subject site to either land, stormwater drainage systems, watercourses or receiving waters. In the event that a discharge occurs, works shall cease immediately and the discharge shall be mitigated and/or rectified to the satisfaction of Council's Team Leader Southern, Monitoring.

**Deposition**

68. There shall be no deposition of earth, mud, dirt or other debris on any public road or footpath resulting from earthworks activity on the subject site. In the event that such deposition does occur, it shall immediately be removed. In no instance shall roads or footpaths be washed down with water without appropriate erosion and sediment control measures in place to prevent contamination of the stormwater drainage system, watercourses or receiving waters.
69. Immediately upon completion or abandonment of earthworks on the subject site, all areas of bare earth must be permanently stabilised to the satisfaction of the Council.

*Advice Note:*

*Should any earthworks be completed or abandoned, bare areas of earth associated with the works must be permanently stabilised against erosion. Measures may include:*

- o The use of mulching or natural fibre matting.*
- o Top-soiling, grassing and mulching of otherwise bare areas of earth.*
- o Aggregate or vegetative cover that has obtained a density of more than 80% of a normal pasture sward.*

*The on-going monitoring of these measures is the responsibility of the consent holder. It is recommended that you discuss any potential measures with the Council's monitoring officer who will guide you on the most appropriate approach to take. Alternatively, please refer to Auckland Council Guidance Document 005, Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region, June 2016, Incorporating Amendment 1 (GD05).*

### **Acoustic design**

70. The selection, design and installation of mechanical plant on site, including any emergency generator, must be overseen by a suitably qualified acoustic expert during the design stages of the project. This is to ensure the permitted noise levels specified in Condition 75 can be complied with at all times.

### **Post-construction conditions**

#### **Vehicle crossing width**

71. The vehicle crossing servicing the water and wastewater treatment plant shall be 5.2m wide at the boundary of Lot 4004.

#### **Implementation and maintenance of approved landscape design**

72. No later than the first planting season after the final commissioning and operation of the water and wastewater treatment plant, the consent holder must implement the landscape and fencing design surrounding the plant in accordance with the landscape plans approved under condition 6 and thereafter retain and maintain this landscaping.

#### **Maintenance of treatment plant**

73. On completion of the final commissioning of the water and wastewater treatment plant, the consent holder shall engage the services of a suitably qualified person to be responsible for the day to day operational and maintenance requirements of the plant.

#### **Acoustic assessment**

74. The consent holder must provide evidence to Council that the design recommendations of the acoustics expert have been implemented, within two months of the operation of both the water and wastewater treatment plants.

#### **Noise levels**

75. The noise (rating) level and maximum noise level from the water and wastewater treatment plant site must not exceed the levels in the table below, when measured and assessed at the notional boundary of any site in the Mixed Rural Zone, Rural Coastal Zone or Residential Single House Zone.

<b>Noise source</b>	<b>Timeframe</b>	<b>Noise rating level</b>
Fixed mechanical plant and processes or noise sources that operate continuously or on an automated basis	Monday to Saturday 7am – 10pm Sunday 9am – 6pm	40 dB LAeq
	All other times	30 dB LAeq 55 dB LAFmax
All other activities, including vehicle movements, deliveries and inspections.	Monday to Saturday 7am – 10pm Sunday 9am – 6pm	55 dB LAeq
	All other times	45 dB LAeq 75 dB LAFmax

### **Hazardous substances conditions**

#### **HSW-HS certification**

76. The consent holder must provide a copy of:

- A Location Certification for sulphuric acid storage; and
- Stationary Container Compliance Certification for the sodium hydroxide and acetic acid tanks.

Certification must be issued by an authorised Compliance Certifier to the Council prior to the activity becoming operational.

### **Emergency Response Planning**

77. A hazardous substances emergency response plan shall be prepared for the site and submitted to the Council prior to commission.

#### *Advice note*

*Such a plan may be incorporated into the Environmental Management Plan required for the permitted ITA activity. It shall include a detailed as-built site layout showing the location of hazardous substances to be stored, and emergency response equipment. The plan shall specify when and how it will be tested, reviewed and updated, as necessary.*

### **Industrial or Trade Activity conditions**

#### **Site management**

78. The site must be operated and managed in accordance with an Environmental Management Plan to ensure the risks from the site are managed appropriately.

The EMP must include the following:

- identification of the specific activities conducted on the site;
- the identification of potential contaminants associated with these activities;
- methods used to prevent identified contaminants contacting stormwater runoff as far as practicable and methods to manage environmental risks from site activities;
- a Spill Response Plan (which includes the provision that all spills over 20 litres, or any spill of Environmentally Hazardous Substances that has entered the stormwater system, a water-body or has contacted unsealed ground, shall be reported immediately to the Auckland Council's 24 Hour Pollution Hotline (09-377-3107));
- an up-to-date and accurate site drainage plan showing the location of all site catchpits, treatment devices and the discharge point(s) of the site stormwater system;
- an appropriate auditing programme to ensure site performance with all components of the site Environmental Management Plan;
- methods for providing and recording staff training.

The Environmental Management Plan must be kept on site and accessible at all times.

79. The Environmental Management Plan must be reviewed and updated annually from the date of granting of this consent, to ensure all components of the Environmental Management Plan are still relevant.

#### **Spill Kits & Emergency Equipment**

80. Sufficient suitable spill kits and emergency equipment must be maintained on site at all times.

#### **Discharge of Hazardous Substances**

81. Any incidents resulting in the discharge of hazardous substances or wastewater to the environment must be reported to the Council of within 24 hours of incident occurring.

### **SUBDIVISION CONSENT – FULL DEVELOPMENT**

## **General conditions**

82. The subdivision and all associated activities shall be carried out in general accordance with the documents and drawings and all supporting additional information submitted with the application, detailed below, and all referenced by the council as resource consent numbers xxx.

Application Form and Assessment of Environmental Effects prepared by Purpose Planning, dated 6 July 2022.

<b>Drawing title and reference</b>	<b>Author</b>	<b>Revision</b>	<b>Date</b>
Proposed Subdivision (Step 2) Linwood Road / Dyke Road – Karaka Ref 8284 – drawing 1	Yeomans Survey Solutions	-	June 2022
Proposed Subdivision (Step 2) Linwood Road / Dyke Road – Karaka Ref 8284 – drawing 2	Yeomans Survey Solutions	-	June 2022
Proposed Subdivision (Step 2) Linwood Road / Dyke Road – Karaka Ref 8284 – drawing 3	Yeomans Survey Solutions	-	June 2022
Proposed Subdivision (Step 2) Linwood Road / Dyke Road – Karaka Ref 8284 – drawing 4	Yeomans Survey Solutions	-	June 2022
Proposed Subdivision (Step 2) Linwood Road / Dyke Road – Karaka Ref 8284 – drawing 5	Yeomans Survey Solutions	-	June 2022
Proposed Subdivision (Step 2) Linwood Road / Dyke Road – Karaka Ref 8284 – drawing 6	Yeomans Survey Solutions	-	June 2022
Proposed Subdivision (Step 2) Linwood Road / Dyke Road – Karaka Ref 8284 – drawing 7	Yeomans Survey Solutions	-	June 2022
Proposed Subdivision (Step 2) Linwood Road / Dyke Road – Karaka Ref 8284 – drawing 8	Yeomans Survey Solutions	-	June 2022
Proposed Subdivision (Step 2) Linwood Road / Dyke Road – Karaka Ref 8284 – drawing 9	Yeomans Survey Solutions	-	June 2022
Proposed Subdivision (Step 2) Linwood Road / Dyke Road – Karaka Ref 8284 – drawing 10	Yeomans Survey Solutions	-	June 2022
Karaka North Village Landscape Plan Set – Te Aranga Design Principles – Drawing 210912/1	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Scope / Extend of Consent Plan – Drawing 210912/2	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Masterplan – Drawing 210912/3	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Sheet Index Plan – Drawing 210912/4	Greenwood Associates	-	1 March 2022

Karaka North Village Landscape Plan Set – Landscape Plan 1/15 – Drawing 210912/5	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Landscape Plan 2/15 – Drawing 210912/6	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Landscape Plan 3/15 – Drawing 210912/7	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Landscape Plan 4/15 – Drawing 210912/8	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Landscape Plan 5/15 – Drawing 210912/9	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Landscape Plan 6/15 – Drawing 210912/10	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Landscape Plan 7/15 – Drawing 210912/11	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Landscape Plan 8/15 – Drawing 210912/12	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Landscape Plan 9/15 – Drawing 210912/13	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Landscape Plan 10/15 – Drawing 210912/14	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Landscape Plan 11/15 – Drawing 210912/15	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Landscape Plan 12/15 – Drawing 210912/16	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Landscape Plan 13/15 – Drawing 210912/17	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Landscape Plan 14/15 – Drawing 210912/18	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Landscape Plan 15/15 – Drawing 210912/19	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Plant Palette 1/11 – Drawing 210912/20	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Plant Palette 2/11 – Drawing 210912/21	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Plant Palette 3/11 – Drawing 210912/22	Greenwood Associates	-	1 March 2022

Karaka North Village Landscape Plan Set – Plant Palette 4/11 – Drawing 210912/23	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Plant Palette 5/11 – Drawing 210912/24	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Plant Palette 6/11 – Drawing 210912/25	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Plant Palette 7/11 – Drawing 210912/26	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Plant Palette 8/11 – Drawing 210912/27	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Plant Palette 9/11 – Drawing 210912/28	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Plant Palette 10/11 – Drawing 210912/29	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Plant Palette 11/11 – Drawing 210912/30	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set SEA 1/6 – Drawing 210912/31	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set SEA 2/6 – Drawing 210912/32	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set SEA 3/6 – Drawing 210912/33	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set SEA 4/6 – Drawing 210912/34	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set SEA 5/6 – Drawing 210912/35	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set SEA 6/6 – Drawing 210912/36	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 1/11 – Drawing 210912/37	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 2/11 – Drawing 210912/38	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 3/11 – Drawing 210912/39	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 4/11 – Drawing 210912/40	Greenwood Associates	-	1 March 2022

Karaka North Village Landscape Plan Set – Key Plan Set Stream 5/11 – Drawing 210912/41	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 6/11 – Drawing 210912/42	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 7/11 – Drawing 210912/43	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 8/11 – Drawing 210912/44	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 9/11 – Drawing 210912/45	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 10/11 – Drawing 210912/46	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 11/11 – Drawing 210912/47	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Wetland & Riparian 1/9 – Drawing 210912/48	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Wetland & Riparian 2/9 – Drawing 210912/49	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Wetland & Riparian 3/9 – Drawing 210912/50	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Wetland & Riparian 4/9 – Drawing 210912/51	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Wetland & Riparian 5/9 – Drawing 210912/52	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Wetland & Riparian 6/9 – Drawing 210912/53	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Wetland & Riparian 7/9 – Drawing 210912/54	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Wetland & Riparian 8/9 – Drawing 210912/55	Greenwood Associates	-	1 March 2022

Karaka North Village Landscape Plan Set – Key Plan Set Wetland & Riparian 9/9 – Drawing 210912/56	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Water Treatment 1/2 – Drawing 210912/57	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Water Treatment 2/2 – Drawing 210912/58	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Planting Detail – Drawing 210912/59	Greenwood Associates	-	1 March 2022
Title page Drawing 0000	Calthom Consultants	F	27 June 2022
Drawing Register Drawing 0001	Calthom Consultants	F	27 June 2022
Drawing Register Drawing 0002	Calthom Consultants	F	27 June 2022
Drawing Register Drawing 0003	Calthom Consultants	F	27 June 2022
Drawing Register Drawing 0004	Calthom Consultants	F	27 June 2022
Proposed Contours Overall Plan Drawing 2000	Calthom Consultants	F	27 June 2022
Proposed Contours Part Plan - Sheet 1 Drawing 2001	Calthom Consultants	F	16 June 2022
Proposed Contours Part Plan - Sheet 2 Drawing 2002	Calthom Consultants	F	16 June 2022
Proposed Contours Part Plan - Sheet 3 Drawing 2003	Calthom Consultants	F	16 June 2022
Proposed Contours Part Plan - Sheet 4 Drawing 2004	Calthom Consultants	F	16 June 2022
Proposed Contours Part Plan - Sheet 5 Drawing 2005	Calthom Consultants	F	16 June 2022
Proposed Contours Part Plan - Sheet 6 Drawing 2006	Calthom Consultants	F	16 June 2022
Proposed Contours Part Plan - Sheet 7 Drawing 2007	Calthom Consultants	F	16 June 2022
Proposed Contours Part Plan - Sheet 8 Drawing 2008	Calthom Consultants	F	16 June 2022
Proposed Contours Part Plan - Sheet 10 Drawing 2010	Calthom Consultants	E	15 March 2022
Proposed Contours Part Plan - Sheet 11 Drawing 2011	Calthom Consultants	F	27 June 2022
Proposed Contours Part Plan - Sheet 12 Drawing 2012	Calthom Consultants	F	27 June 2022
Proposed Contours Part Plan - Sheet 13 Drawing 2013	Calthom Consultants	F	16 June 2022
Cut And Fill Overall Plan Drawing 2100	Calthom Consultants	F	27 June 2022
Cut And Fill Part Plan - Sheet 4 Drawing 2104	Calthom Consultants	F	17 June 2022
Cut And Fill Part Plan - Sheet 12 Drawing 2112	Calthom Consultants	F	27 June 2022
Cut And Fill Part Plan - Sheet 13 Drawing 2113	Calthom Consultants	F	17 June 2022



Earthworks Reference Plan Drawing 2200	Calthom Consultants	E	27 June 2022
Earthworks Cross Sections - Sheet 7 Drawing 2207	Calthom Consultants	E	17 June 2022
Earthworks Cross Sections - Sheet 8 Drawing 2208	Calthom Consultants	E	17 June 2022
Erosion And Sediment Control Plan Overall Plan Drawing 2300	Calthom Consultants	C	27 June 2022
Erosion And Sediment Control Plan - Sheet 4 Drawing 2304	Calthom Consultants	C	27 June 2022
Roading Overall Plan Drawing 3000	Calthom Consultants	F	27 June 2022
Roading Part Plan - Sheet 1 Drawing 3001	Calthom Consultants	F	17 June 2022
Roading Part Plan - Sheet 2 Drawing 3002	Calthom Consultants	E	15 March 2022
Roading Part Plan - Sheet 3 Drawing 3003	Calthom Consultants	F	17 June 2022
Roading Part Plan - Sheet 4 Drawing 3004	Calthom Consultants	F	17 June 2022
Roading Part Plan - Sheet 5 Drawing 3005	Calthom Consultants	F	17 June 2022
Roading Part Plan - Sheet 6 Drawing 3006	Calthom Consultants	F	17 June 2022
Roading Part Plan - Sheet 7 Drawing 3007	Calthom Consultants	E	15 March 2022
Roading Part Plan - Sheet 8 Drawing 3008	Calthom Consultants	F	17 June 2022
Roading Part Plan - Sheet 10 Drawing 3010	Calthom Consultants	E	15 March 2022
Roading Part Plan - Sheet 11 Drawing 3011	Calthom Consultants	F	27 June 2022
Roading Part Plan - Sheet 12 Drawing 3012	Calthom Consultants	F	27 June 2022
Roading Part Plan - Sheet 13 Drawing 3013	Calthom Consultants	F	17 June 2022
Roading Part Plan - Sheet 15 Drawing 3015	Calthom Consultants	F	17 June 2022
Roading Long Sections - Sheet 1 Drawing 3101	Calthom Consultants	C	17 June 2022
Roading Long Sections - Sheet 2 Drawing 3102	Calthom Consultants	D	17 June 2022
Roading Long Sections - Sheet 3 Drawing 3103	Calthom Consultants	C	17 June 2022
Roading Long Sections - Sheet 4 Drawing 3104	Calthom Consultants	C	17 June 2022
Roading Long Sections - Sheet 5 Drawing 3105	Calthom Consultants	C	17 June 2022
Roading Long Sections - Sheet 6 Drawing 3106	Calthom Consultants	C	17 June 2022
Roading Long Sections - Sheet 7 Drawing 3107	Calthom Consultants	C	17 June 2022
Roading Long Sections - Sheet 8 Drawing 3108	Calthom Consultants	C	17 June 2022

Roading Long Sections - Sheet 9 Drawing 3109	Calthom Consultants	C	17 June 2022
Roading Long Sections - Sheet 10 Drawing 3110	Calthom Consultants	C	17 June 2022
Roading Details Drawing 3300	Calthom Consultants	B	15 March 2022
Roading Cross Sections - Sheet 2 Drawing 3302	Calthom Consultants	D	15 March 2022
Roading Cross Sections - Sheet 3 Drawing 3303	Calthom Consultants	D	15 March 2022
Roading Cross Sections - Sheet 4 Drawing 3304	Calthom Consultants	C	15 March 2022
Roading Details Sheet 1 Drawing 3305	Calthom Consultants	B	15 March 2022
Roading Details Sheet 2 Drawing 3306	Calthom Consultants	B	15 March 2022
Stormwater Overall Plan Drawing 4000	Calthom Consultants	C	27 June 2022
Stormwater Part Plan - Sheet 1 Drawing 4001	Calthom Consultants	C	17 June 2022
Stormwater Part Plan - Sheet 2 Drawing 4002	Calthom Consultants	C	17 June 2022
Stormwater Part Plan - Sheet 3 Drawing 4003	Calthom Consultants	C	17 June 2022
Stormwater Part Plan - Sheet 4 Drawing 4004	Calthom Consultants	C	17 June 2022
Stormwater Part Plan - Sheet 5 Drawing 4005	Calthom Consultants	C	17 June 2022
Stormwater Part Plan - Sheet 6 Drawing 4006	Calthom Consultants	C	17 June 2022
Stormwater Part Plan - Sheet 7 Drawing 4007	Calthom Consultants	C	17 June 2022
Stormwater Part Plan - Sheet 8 Drawing 4008	Calthom Consultants	C	17 June 2022
Stormwater Part Plan - Sheet 10 Drawing 4010	Calthom Consultants	B	15 March 2022
Stormwater Part Plan - Sheet 11 Drawing 4011	Calthom Consultants	C	27 June 2022
Stormwater Part Plan - Sheet 12 Drawing 4012	Calthom Consultants	C	27 June 2022
Stormwater Part Plan - Sheet 13 Drawing 4013	Calthom Consultants	C	17 June 2022
Stormwater Long Sections - Sheet 1 Drawing 4101	Calthom Consultants	B	15 March 2022
Stormwater Long Sections - Sheet 2 Drawing 4102	Calthom Consultants	C	17 June 2022
Stormwater Long Sections - Sheet 3 Drawing 4103	Calthom Consultants	C	17 June 2022
Stormwater Long Sections - Sheet 4 Drawing 4104	Calthom Consultants	B	15 March 2022
Stormwater Long Sections - Sheet 5 Drawing 4105	Calthom Consultants	B	15 March 2022
Stormwater Long Sections - Sheet 6 Drawing 4106	Calthom Consultants	B	15 March 2022

Stormwater Long Sections - Sheet 7 Drawing 4107	Calthom Consultants	B	15 March 2022
Stormwater Long Sections - Sheet 8 Drawing 4108	Calthom Consultants	B	15 March 2022
Stormwater Long Sections - Sheet 9 Drawing 4109	Calthom Consultants	B	15 March 2022
Stormwater Long Sections - Sheet 10 Drawing 4110	Calthom Consultants	C	17 June 2022
Stormwater Long Sections - Sheet 11 Drawing 4111	Calthom Consultants	C	17 June 2022
Stormwater Long Sections - Sheet 12 Drawing 4112	Calthom Consultants	B	15 March 2022
Stormwater Long Sections - Sheet 13 Drawing 4113	Calthom Consultants	C	17 June 2022
Stormwater Long Sections - Sheet 14 Drawing 4114	Calthom Consultants	C	17 June 2022
Stormwater Long Sections - Sheet 15 Drawing 4115	Calthom Consultants	B	15 March 2022
Stormwater Long Sections - Sheet 16 Drawing 4116	Calthom Consultants	C	17 June 2022
Stormwater Long Sections - Sheet 17 Drawing 4117	Calthom Consultants	B	15 March 2022
Stormwater Long Sections - Sheet 18 Drawing 4118	Calthom Consultants	C	17 June 2022
Stormwater Long Sections - Sheet 19 Drawing 4119	Calthom Consultants	C	17 June 2022
Stormwater Long Sections - Sheet 22 Drawing 4122	Calthom Consultants	C	17 June 2022
Stormwater Long Sections - Sheet 23 Drawing 4123	Calthom Consultants	B	15 March 2022
Stormwater Long Sections - Sheet 24 Drawing 4124	Calthom Consultants	B	15 March 2022
Stormwater Long Sections - Sheet 25 Drawing 4125	Calthom Consultants	B	15 March 2022
Stormwater Long Sections - Sheet 26 Drawing 4126	Calthom Consultants	B	15 March 2022
Stormwater Long Sections - Sheet 27 Drawing 4127	Calthom Consultants	C	17 June 2022
Stormwater Long Sections - Sheet 28 Drawing 4128	Calthom Consultants	B	15 March 2022
Stormwater Long Sections - Sheet 32 Drawing 4132	Calthom Consultants	B	15 March 2022
Stormwater Long Sections - Sheet 33 Drawing 4133	Calthom Consultants	B	15 March 2022
Stormwater Long Sections - Sheet 34 Drawing 4134	Calthom Consultants	B	15 March 2022
Stormwater Details - Sheet 1 Drawing 4301	Calthom Consultants	B	15 March 2022
Stormwater Details - Sheet 2 Drawing 4302	Calthom Consultants	B	15 March 2022
Overland Flowpath Reference Plan Drawing 4500	Calthom Consultants	C	27 June 2022
Overland Flowpath Part Plan - Sheet 1 Drawing 4501	Calthom Consultants	C	17 June 2022

Overland Flowpath Part Plan - Sheet 2 Drawing 4502	Calthom Consultants	C	17 June 2022
Overland Flowpath Part Plan - Sheet 4 Drawing 4504	Calthom Consultants	C	27 June 2022
Wetland 1 Detail Plan Drawing 4505	Calthom Consultants	C	17 June 2022
Dam Spillway and Fish Passage Channel Drawing 4508	Calthom Consultants	C	15 March 2022
OLFP Longitudinal Section - Sheet 1 Drawing 4521	Calthom Consultants	C	17 June 2022
OLFP Longitudinal Section - Sheet 3 Drawing 4523	Calthom Consultants	C	17 June 2022
OLFP Longitudinal Section - Sheet 4 Drawing 4524	Calthom Consultants	B	15 March 2022
OLFP Longitudinal Section - Sheet 6 Drawing 4526	Calthom Consultants	B	15 March 2022
OLFP Longitudinal Section - Sheet 7 Drawing 4527	Calthom Consultants	B	15 March 2022
OLFP Longitudinal Section - Sheet 9 Drawing 4529	Calthom Consultants	B	15 March 2022
10 Year Catchment Overall Plan Drawing 4600	Calthom Consultants	C	27 June 2022
100 Year Catchment Overall Plan Drawing 4610	Calthom Consultants	C	27 June 2022
Stormwater Standard Engineering Details - Sheet 1 Drawing 4701	Calthom Consultants	B	15 March 2022
Stormwater Standard Engineering Details - Sheet 2 Drawing 4702	Calthom Consultants	B	15 March 2022
Stormwater Standard Engineering Details - Sheet 3 Drawing 4703	Calthom Consultants	B	15 March 2022
Stormwater Standard Engineering Details - Sheet 4 Drawing 4704	Calthom Consultants	B	15 March 2022
Stormwater Standard Engineering Details - Sheet 5 Drawing 4705	Calthom Consultants	B	15 March 2022
Stormwater Standard Engineering Details - Sheet 6 Drawing 4706	Calthom Consultants	B	15 March 2022
Stormwater Standard Engineering Details - Sheet 7 Drawing 4707	Calthom Consultants	B	15 March 2022
Stormwater Standard Engineering Details - Sheet 8 Drawing 4708	Calthom Consultants	B	15 March 2022
Wastewater Overall Plan Drawing 5000	Calthom Consultants	C	27 June 2022
Wastewater Part Plan - Sheet 1 Drawing 5001	Calthom Consultants	C	17 June 2022
Wastewater Part Plan - Sheet 2 Drawing 5002	Calthom Consultants	B	15 March 2022

Wastewater Part Plan - Sheet 3 Drawing 5003	Calthom Consultants	C	17 June 2022
Wastewater Part Plan - Sheet 4 Drawing 5004	Calthom Consultants	C	17 June 2022
Wastewater Part Plan - Sheet 5 Drawing 5005	Calthom Consultants	C	17 June 2022
Wastewater Part Plan - Sheet 6 Drawing 5006	Calthom Consultants	C	17 June 2022
Wastewater Part Plan - Sheet 7 Drawing 5007	Calthom Consultants	C	17 June 2022
Wastewater Part Plan - Sheet 8 Drawing 5008	Calthom Consultants	C	17 June 2022
Wastewater Part Plan - Sheet 10 Drawing 5010	Calthom Consultants	-	15 March 2022
Wastewater Part Plan - Sheet 11 Drawing 5011	Calthom Consultants	C	27 June 2022
Wastewater Part Plan - Sheet 12 Drawing 5012	Calthom Consultants	C	27 June 2022
Wastewater Part Plan - Sheet 13 Drawing 5013	Calthom Consultants	C	17 June 2022
Wastewater Details - Sheet 1 Drawing 5301	Calthom Consultants	C	15 March 2022
Wastewater Standard Engineering Details - Sheet 2 Drawing 5702	Calthom Consultants	B	15 March 2022
Wastewater Standard Engineering Details - Sheet 3 Drawing 5703	Calthom Consultants	B	15 March 2022
Wastewater Standard Engineering Details - Sheet 4 Drawing 5704	Calthom Consultants	B	15 March 2022
Wastewater Standard Engineering Details - Sheet 5 Drawing 5705	Calthom Consultants	B	15 March 2022
Wastewater Standard Engineering Details - Sheet 6 Drawing 5706	Calthom Consultants	B	15 March 2022
Wastewater Standard Engineering Details - Sheet 7 Drawing 5707	Calthom Consultants	B	15 March 2022
Water Supply Overall Plan Drawing 6000	Calthom Consultants	C	27 June 2022
Water Supply Part Plan - Sheet 1 Drawing 6001	Calthom Consultants	C	17 June 2022
Water Supply Part Plan - Sheet 2 Drawing 6002	Calthom Consultants	C	17 June 2022
Water Supply Part Plan - Sheet 3 Drawing 6003	Calthom Consultants	C	17 June 2022
Water Supply Part Plan - Sheet 4 Drawing 6004	Calthom Consultants	C	17 June 2022
Water Supply Part Plan - Sheet 5 Drawing 6005	Calthom Consultants	C	17 June 2022
Water Supply Part Plan - Sheet 6 Drawing 6006	Calthom Consultants	C	17 June 2022

Water Supply Part Plan - Sheet 7 Drawing 6007	Calthom Consultants	C	17 June 2022
Water Supply Part Plan - Sheet 8 Drawing 6008	Calthom Consultants	C	17 June 2022
Water Supply Part Plan - Sheet 10 Drawing 6010	Calthom Consultants	B	15 March 2022
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Water Supply Part Plan - Sheet 12 Drawing 6012	Calthom Consultants	C	17 June 2022
Water Supply Part Plan - Sheet 13 Drawing 6013	Calthom Consultants	C	27 June 2022
Water Supply Standard Engineering Details - Sheet 1 Drawing 6701	Calthom Consultants	B	15 March 2022
Water Supply Standard Engineering Details - Sheet 2 Drawing 6702	Calthom Consultants	B	15 March 2022
Water Supply Standard Engineering Details - Sheet 3 Drawing 6703	Calthom Consultants	B	15 March 2022
Water Supply Standard Engineering Details - Sheet 4 Drawing 6704	Calthom Consultants	B	15 March 2022
Water Supply Standard Engineering Details - Sheet 5 Drawing 6705	Calthom Consultants	B	15 March 2022
Water Supply Standard Engineering Details - Sheet 6 Drawing 6706	Calthom Consultants	B	15 March 2022
Water Supply Standard Engineering Details - Sheet 7 Drawing 6707	Calthom Consultants	B	15 March 2022
Water Supply Standard Engineering Details - Sheet 8 Drawing 6708	Calthom Consultants	B	15 March 2022
Water Supply Standard Engineering Details - Sheet 9 Drawing 6709	Calthom Consultants	B	15 March 2022
Water Supply Standard Engineering Details - Sheet 10 Drawing 6710	Calthom Consultants	B	15 March 2022

<b>Report title and reference</b>	<b>Author</b>	<b>Revision</b>	<b>Date</b>
Arboricultural assessment – Karaka North Village Development	Peers Brown Miller	V4	5 March 2022
Karaka North Village: archaeological assessment. Ref 19-1082	CFG Heritage	-	20 June 2022
Karaka North Village – Ecological Assessment – Ref 63179	Bioresearches	5	2 February 2022

Karaka North Village Economic Impact Overview – Ref 51945.11	Property Economics	-	June 2022
Geotechnical Investigation Report Proposed Karaka North Village Ref 150711-C	Riley Consultants	-	16 November 2021
Karaka North Development – Life Cycle GHG Assessment and Climate Risk Review Ref 12556058	GHD	Final	22 October 2021
Landscape Design Report - Karaka North Village Development	Greenwood Associates	-	Undated
Landscape Values Assessment – Karaka North Village – Assessment of proposed landscape architectural design of the site against 'Karaka North Landscape Management Plan'	Greenwood Associates	Final	15 December 2021
Landscape Values Assessment Addendum	Greenwood Associates	00	3 July 2022
Preliminary Environmental Site Investigation – 348 Linwood Road and 69A Dyke Road	Engeo	-	15 September 2021
Detailed Environmental Site Investigation – 348 Linwood Road and 69A Dyke Road	Engeo	-	21 October 2021
Remediation Action Plan and Site Management Plan – 348 Linwood Road and 69A Dyke Road	Engeo	-	21 January 2022
Provisional approval of Karaka North Village Stormwater Management Plan under Auckland Council Regionwide Stormwater Network Discharge Consent (DIS60069613)- Reference NDC-2019-002	Auckland Council	-	15 November 2021
Karaka North Village Stormwater Management Plan	Calthom Consultants	Final	20 September 2021
Karaka North Village Stream Management Plan	Greenwood Associates	-	October 2021
Urban Design Assessment – Karaka North Village	Urbanism Plus	-	June 2022
Native Lizard Management Plan – Karaka North	Bioresearches	2	5 October 2021
Karaka Village – Development and Document Summary	Hornabrook Macdonald Lawyers	-	24 November 2021
Existing Dam Review Proposed Karaka North Village	Riley Consultants	J	7 March 2022
Karaka North Village - Infrastructure Design Report for 327 Lot Subdivision	Calthom Consultants	B	27 June 2022

Residential Development 348 Linwood Road, Karaka North - Integrated Transport Assessment	Commute	-	14 March 2022
Residential Development 348 Linwood Road, Karaka North – Addendum Report	Commute	-	27 June 2022
Karaka North Village – Landscape Project History	Greenwood Associates	-	March 2022

### **Lapsing of consent**

83. In accordance with clause 37(7) of Schedule 6 to the COVID-19 Recovery (Fast-Track Consenting) Act 2020, this consent lapses two years after the date it commences unless the consent is given effect to prior.

### **223 conditions**

#### **Staging**

84. The subdivision may be carried out in 11 stages, as follows:

- **Stage 1:** The completion of the freehold subdivision to create individual titles for Lots 1051-1053, Lot 3001, 3002 & 3006 Residents Society Lots, Lots 7001 & 7003, Lot 20000 Village Green, Lots 4002 & 4004 (Karaka Village Water Limited Utility Lots to be held in the same computer register) and vesting of proposed Lots 2001-2005 (roads) and Lot 9003 (drainage reserve).
- **Stage 2:** The completion of the freehold subdivision to create individual titles for Lots 1054-1056 and vesting of proposed Lots 2006-2008 (roads).
- **Stage 5:** The completion of the freehold subdivision to create individual titles for Lots 447-526 and vesting of proposed Lots 2012-2013 (roads).
- **Stage 6:** The completion of the freehold subdivision to create individual titles for Lots 527-550, 913-916 and 1057, and vesting of proposed Lots 2014-2015 (roads).

Lot 5007 (jointly owned access lot) is to be held as to 2 undivided one-half shares by the owners of Lots 529-530 as tenants in common in those shares and that individual computer registers are issued accordingly.

- **Stage 7:** The completion of the freehold subdivision to create individual titles for Lots 551-588 and vesting of proposed Lots 2016-2017 (roads).
- **Stage 8:** The completion of the freehold subdivision to create individual titles for Lots 1058-1059 and 589-604, and vesting of proposed Lot 2018 (road).
- **Stage 9:** The completion of the freehold subdivision to create individual titles for Lots 1060-1061 and 605-619, and vesting of proposed Lot 2019 (road).
- **Stage 10:** The completion of the freehold subdivision to create individual titles for Lots 1062-1064, 620-633 and 911, and vesting of proposed Lot 2020 (road) and Lot 10001 (recreation reserve). Lot 10001 shall only vest in Council as a park if an unconditional agreement for the sale and purchase of that lot exists prior to the consent holder's



request for the survey plan to be approved under s223 of the RMA. If no such agreement exists, Lot 10001 will remain as a balance lot held by the consent holder.

- **Stage 11:** The completion of the freehold subdivision to create individual titles for Lots 1065-1066 and 634-652, and vesting of proposed Lot 2021 (road).
- **Stage 16:** The completion of the freehold subdivision to create individual titles for Lots 801-860 and vesting of proposed Lots 2027-2030 (roads).
- **Stage 17:** The completion of the freehold subdivision to create individual titles for Lots 861-887, 898-910 and 7004, and vesting of proposed Lot 2031 (road).

### **Sequence of subdivision**

85. Stage 1 must be undertaken first.

In order to ensure physical access and infrastructure connectivity can be achieved through the completion of prior stage(s), subsequent stages must be undertaken on the below basis:

- Each of stages 2, 5, 8 and 9 of the subdivision can only be undertaken concurrently or subsequent to stage 1.
- Stage 16 of the subdivision can only be undertaken concurrently or subsequent to stage 5.
- Each of stages 6 and 10 of the subdivision can only be undertaken concurrently or subsequent to stage 2.
- Stage 17 of the subdivision can only be undertaken concurrently or subsequent to stage 16.
- Each of stages 7 and 11 of the subdivision can only be undertaken concurrently or subsequent to stage 6.

### **Survey plan approval**

86. The consent holder shall submit to Council for approval pursuant to Section 223 of the Resource Management Act 1991 a Land Transfer Plan in accordance with the approved scheme plan of subdivision.

The proposed easements (party wall, maintenance, access, right of way, right to drain, underground service, overland flowpath) shown on the approved subdivision scheme plan are to be shown as a Memorandum of Easement on the survey plan and are to be duly granted or reserved. The consent holder must meet the costs for the preparation, review, and registration of the easement instruments on the relevant computer registers (records of title).

- Easements in gross in favour of the Auckland Council to drain water over all overland flowpaths. As-built plans and details to confirm that all services/overland flows are entirely within the easements to be created.
- Existing Right of Way easements shown on LT 560058 are to be surrendered (in whole or part) where appropriate as the subdivision progresses and the Right of Way easements become redundant.

87. The survey plan shall be approved if it is in accordance with the plans referenced in condition 82 above. A survey plan can be submitted for all, or for individual stages subject to this approved resource consent.

## **224c conditions**

### **Section 224(c) compliance conditions (all stages)**

88. Prior to the completion of each stage, a certificate pursuant to section 224(c) of the RMA will not be issued until:

- a) conditions 89 to 132 have been met to the satisfaction of the Council and at the consent holder's expense; and
- b) the conditions of the underlying Lot 1002 subdivision SUBxxxxxxx are satisfied.

### **Engineering Plan Requirements and Approvals**

89. Prior to the commencement of the relevant construction work, the consent holder shall submit one PDF version of complete engineering plans (including engineering calculations and specifications) to the Team Leader Regulatory Engineering South for approval. Details of the registered engineer who will act as the consent holder's representative for the duration of the development shall also be provided with the application for Engineering Plan Approval.

The engineering plans shall include the information regarding the following engineering works:

- Design and details of any retaining walls in the road reserve or parks reserves or adjacent to the reserve(s), and any other structures in the reserves.
- Design detail including pipe sizing, cross sections and long sections for stormwater infrastructure. Public stormwater reticulation, including manholes and pipes, should be located within the berm. However, the final location shall be confirmed in consultation with other service providers, Auckland Transport and Auckland Council's Development Engineer.
- Detailed design of all roads to be vested in the Council including intersections, parking, vehicle crossings, pedestrian crossings and footpaths. In particular, compound corners, where required shall be adopted throughout the development. All roads shall be designed in accordance with Auckland Transport's Code of Practice (ATCOP) with modifications to enable a rural environment (i.e. cattle stops, fencing and kerbs).
- Detailed design of all street lighting, street furniture and other structures/facilities on the roads to be vested in Auckland Transport (including traffic calming devices, tree pits, bioretention devices and safety measurements, marking and street signs etc.) shall be designed in accordance with Auckland Transport's Code of Practice (ATCOP).
- Visibility assessment of all proposed roads; in particular the visibility at intersections and forward visibility around bends must be designed in accordance with Auckland Transport's Code of Practice (ATCOP).
- Planting and landscaping of the circus (including any sculpture to be owned and maintained by the consent holder or its assigns).
- Pavement and surfacing for all proposed roads, parking areas, footpaths and pedestrian crossing points must be designed in accordance with Auckland Transport's Code of Practice (ATCOP).

- A road safety audit shall be undertaken on the proposed Linwood Road and Dyke Road roundabout design by a suitably qualified independent consultant. The findings of the safety audit shall be used to guide the detailed design of the roundabout.
- Detailed design of the Linwood Road speed reduction threshold treatment.
- Detailed design of the stormwater system and devices for the management of both quantity and quality of the stormwater runoff. The stormwater system and devices shall be designed in general accordance with the approved Karaka North Village Stormwater Management Plan dated 20 September 2021 by Calthom Consultants, (unless subsequently modified by agreement between the Consent Holder and Council).
  - Confirmation of all development areas to distinguish between a Coastal Receiving Environment Catchment and a Stream Receiving Environment Catchment.
  - All impervious areas within the road reserve of a Coastal Receiving Environment Catchment are treated for water quality through a swale device adopting the BPO approach in the Stormwater Management Plan.
  - All impervious areas within the road reserve a Stream Receiving Environment Catchment are treated through a vested bioretention device, and / or the use of a passive permeable paving system sized to meet the 16.27mm/m<sup>2</sup> detention and 5mm/m<sup>2</sup> retention.
  - Pipes appropriately sized to accommodate 10% AEP flows – relevant calculations to be provided.
  - The proposed stormwater system shall be designed to identify health and safety risks for the public, operating personnel, contractor and Council employees.
  - The proposed stormwater system shall have an asset life of a minimum of 50 years.
- Details of the stormwater discharge outlets including engineered erosion protection measures designed in accordance with Council's Technical Publication Number 10 (TP10).
- Details confirming that the maximum depth and velocity of overland flows in roads will meet the Austroads standards.

As part of the application for Engineering Plan Approval, a registered engineer shall:

- Certify that all public roads and associated structures/facilities or access ways have been designed in accordance with the Auckland Transport's Code of Practice (ATCOP).
- Certify that the proposed stormwater system or devices proposed have been designed in accordance with the Council's Code of Practice for Land Development and Subdivision: Chapter 4 - Stormwater.
- Provide a statement that the proposed infrastructure has been designed for the long-term operation and maintenance of the asset.

- Confirm that all practical measures are included in the design to facilitate safe working conditions in and around the asset.

**Advice Note:**

*If the Engineering Plan Application (EPA) drawings require any permanent traffic and parking restrictions e.g. broken yellow lines, then the development will require Traffic Control Committee (TCC) resolutions from Auckland Transport. The consent holder is expected to prepare and submit a resolution report to Traffic Control Committee for this.*

*The water and wastewater network and treatment plant are privately owned and managed, therefore do not form part of Engineering Plan Approval. Building Consent will be required prior to the construction of the water and wastewater infrastructure.*

**Engineering Plan Approval – Landscape requirements**

90. At Engineering Plan Approval stage, the consent holder shall submit detailed landscaping plans for stormwater swales, stormwater wetlands to vest, bioretention pits, street trees and street gardens in roads to vest, for approval by Council's Parks Planning Team Leader. In particular the plans shall:

- Be prepared by a suitably qualified landscape architect.
- Show all planting including details of intended species, location, plant sizes at time of planting and likely heights on maturity, tree pit specifications, the overall material palette, location of street lights and other service access points.
- Ensure that species are able to maintain appropriate separation distances from paths, roads, street lights and vehicle crossings in accordance with the Auckland Transport Code of Practice.
- Include planting methodology.
- Include a Landscape Maintenance Plan for all planting and landscaping, which must include:
  - Vegetation maintenance policies for the proposed planting, in particular details of maintenance methodology and dates / frequencies.
  - Details of watering, weeding, trimming, cultivation, pest and disease control, checking of stakes and ties, pruning and other accepted horticultural operations to ensure normal and healthy plant establishment and growth.

**Public Stormwater System**

91. An Engineering Completion Certificate certifying that all public stormwater pipes, wetlands, swales and individual stormwater connections have been constructed in accordance with the approved Engineering Plan and shall be provided in support of the section 224(c) application.

*Advice Note:*

*As-built documentation for all assets to be vested in the Council required by these conditions shall be in accordance with the current version of the Council's 'Development Engineering As-built Requirement' (currently Version 1.2). A valuation schedule for all asset to be vested in the Council are to be included as part of the as-built documentation. (<https://www.aucklandcouncil.govt.nz/building-and-consents/engineering-approvals/Documents/engineering-as-built-requirements.pdf>)*

### **Water and Wastewater Certification**

92. A Certificate of Completion shall be provided for completion of Water and Wastewater in support of the 224(c) application for the approved consent. The certificate shall confirm ready and available supply of potable water, and confirmation the wastewater treatment plant is ready and available to accept wastewater inflow. No dwellings in the development are to be occupied until this Certificate of Completion has been provided to the Council.

#### *Advice Note:*

*As stated in the Infrastructure Management Plan for Karaka North Village, water and wastewater services will be provided by Karaka Village Water Limited and its successors or assigns, and for the purposes of this condition, the certificate of completion will be issued by Karaka Village Water Limited and its successors or assigns.*

### **Water and Wastewater assets in vested road**

93. Prior to the issue of 224c certification, a legal agreement shall be prepared and executed between the Consent Holder (or nominated entity) and Auckland Transport to document the terms and conditions that provides the basis for Karaka Village Water Limited to reticulate, own and maintain its reticulation pipes that sit within the vested road.

### **Electricity supply**

94. The consent holder shall provide and install an underground electricity supply system to service each residential lot generally as shown on the approved plans. The system shall be installed in accordance with the requirements of the relevant network utility operator. The consent holder shall provide certification from the network utility operator that the system has been installed in accordance with their requirements in support of the section 224(c) application to Team Leader Regulatory Engineering (South).

### **Telecommunications services**

95. The consent holder shall provide and install an underground telecommunications system to service each lot generally as shown on the approved plans. The system shall be installed in accordance with the relevant network utility operator. The consent holder shall provide certification from the network utility operator that the system has been installed in accordance with their requirements in support of the section 224(c) application to Council's Team Leader Regulatory Engineering (South).

### **Operation and Maintenance Manual for the Public Stormwater Management Devices**

96. The consent holder shall engage a suitably qualified and experienced engineering professional who shall prepare an Operation and Maintenance Manual for all stormwater devices, setting out the principles for the general operation and maintenance for the stormwater system, outlet channel and the associated management devices. The Operation and Maintenance Manual shall be submitted to the Council's Team Leader Regulatory Engineering South for approval. The Operation and Maintenance plan is to include:

- a detailed technical data sheet
- all the requirements as defined within the Stormwater Management Device Design Guidelines Manual (TP 10);
- details of who will hold responsibility for short-term and long-term maintenance of the stormwater devices
- a programme for regular maintenance and inspection of the stormwater system
- a programme for the collection and disposal of debris and sediment collected by the stormwater management device or practices
- a programme for post storm maintenance
- a programme for inspection and maintenance of outfall erosion

- general inspection checklists for all aspects of the stormwater system, including visual check of roadside catch pits, recharge pits and outfalls
- a programme for inspection and maintenance of vegetation, if any, associated with the stormwater devices
- recommended on-going control methodology to eradicate established pests and invasive weeds from both terrestrial and aquatic areas

### **Flood Report**

97. Prior to the application for the section 224c certificate, the consent holder must provide a Stormwater Report prepared by an appropriately qualified engineer to the satisfaction of Council's Team Leader Regulatory Engineering South identifying:

- The 1% AEP flood level for the site and the surrounding road reserves;
- A layout plan of the overland flow paths for the site and the adjacent land along the boundary in accordance with the approved EPA before Section 223 approval;
- The overland flow path plan shall include as built cross sections of all roads including the ponding areas with levels before overtopping;
- As built longitudinal plan and cross sections shall be provided for overland flow path locations;
- The minimum floor level of all habitable buildings must be at least 150mm for flows below 2m<sup>3</sup> per second and 100 mm deep (where unobstructed flows exist between the building and the road) and where flows exceed this, the minimum floor level of habitable buildings must be increased to at least 500mm. This may be enforced through a consent notice on the property unless the building consents have already been issued;
- No buildings, structures or other obstructions are to be erected in the overland flow paths without prior written permission from the Council; and
- Where either existing or proposed overland flow paths cross lot boundaries, the consent holder is to provide the Council with plans to accompany easement(s) to be registered in favour of the Council. Any easement documentation is to be prepared by the consent holder's lawyers to the satisfaction of the Council's solicitors. All costs are to be at the consent holder's expense. The terms of these easements must prevent buildings, structures or other obstructions being erected in the overland flow path, and must require the land owner to maintain, weed and clean the overland flow paths to ensure an unobstructed flow of stormwater.

#### *Advice Note:*

*The intention of the easement(s) is for the consent holder to provide finished contours that will enable OLFPs to be contained in the roads. However, this is not always possible and cannot be confirmed until site works are complete and surveyed.*

### **Road and Traffic Conditions**

98. All proposed roads (including any upgrades to existing Linwood Road shown within the stage boundaries) and ancillary facilities such as street lighting and traffic calming devices if any, marking, street signs, and street furniture to be vested in Council shall be constructed in accordance with the approved Engineering Plans to the satisfaction of Council's Team Leader Regulatory Engineering South.

99. An Engineering Completion Certificate certifying that all proposed roads and the ancillary structures on the roads to be vested in Auckland Council have been constructed in accordance with the approved Engineering Plans shall be provided in support of the section 224c application.

100. All Road Assessment and Maintenance Management (RAMM) as-built plans and data for the new roads shall be provided with the section 224(c) application. This shall be inclusive of kerb lines, cesspits, footpaths, intersection control devices, pavement marking, street lighting, street furniture, street names, directional signs and landscaping etc.
101. A report from an appropriately qualified and registered electrician shall be supplied with the Section 224(c) application. The report shall certify that all street lights have complied with the relevant safety standards and that they are connected to the network and are operational.

#### **Linwood Road speed calming threshold treatment**

102. Prior to the issue of 224c certificate for stages 8 or 9, whichever occurs first, the consent holder shall implement the Linwood Road threshold treatment to reduce vehicle speeds approaching from the West, as detailed in the Integrated Transport Assessment by Commute.

#### **Street Lighting**

103. The consent holder must design and install street lighting in accordance with the Auckland Transport Code of Practice (ATCOP) Chapter 19 requirements.

#### **Installation of Signage and Road Markings**

104. The consent holder must install all street signs (in accordance with the street names approved by a Resolution of the Franklin Local Board), road signs and road markings [New Zealand Transport Agency's (NZTA) Traffic Control Devices (TCD) Manual which includes the Manual of Traffic Signs and Markings (MOTSAM)], associated with the road development to the satisfaction of Council's Team Leader Regulatory Engineering South and in accordance with the street signage standards for public roads.

#### **Temporary Turning Heads and Road Markings**

105. Prior to the issue of 224c certificate for stage 7, temporary road markings shall be provided at the Road 3 and Road 3B intersection to alert road users on Road 3B to give way to traffic along Road 3.
106. Prior to the issue of 224c certificate for stage 16, temporary road markings shall be provided at the Road 7 and Road 8 intersection to alert road users on Road 8 to give way to traffic along Road 7.
107. Prior to the issue of 224c certificate for stage 11, a temporary turning head compliant with AT TDM standards shall be constructed at the western end of Road 4.
108. Prior to the issue of 224c certificate for stage 17, a temporary turning head compliant with AT TDM standards shall be constructed at the north-western end of Road 8.

#### **Approval of Traffic Control Committee**

109. The consent holder is required to submit a resolution report for approval by the Auckland Transport Traffic Control Committee to legalise all new and proposed changes to road markings, signage and traffic control devices. A copy of the resolution by the Traffic Control Committee must be submitted with the application for the certificate pursuant to section 224(c) of the Resource Management Act. The consent holder is to engage an Auckland Transport nominated contractor to carry out consultation with the affected landowners (if any) and to prepare the resolution report for the Traffic Control Committee (TCC) approval in order to legalise the proposed changes at the cost of the consent holder.

*Advice Notes:*

*Auckland Transport approval for changes to the road reserve or for new road reserve is made through its Traffic Control Committee (“TCC”) resolutions.*

*The consent holder needs to contact Auckland Transport to initiate the resolution process at least 6 weeks prior to any works in the road reserve. No installation or any road markings will be permitted before the resolution has been approved by the Auckland Transport Traffic Control Committee.*

### **Landscaping – Street Planting**

110. Prior to the issue of the section 224(c) certificate the street landscaping shall be implemented in accordance with the approved plans and to the following specifications to the satisfaction of Council’s Parks Planning Team Leader as follows:

- Good quality topsoil, free of stones and clay lumps, shall be retained from the site for use on the street. All grassed and planted areas shall be developed and completed with a minimum topsoil depth of 100mm;
- All areas of the street that have been grassed must have a 90 percent strike rate, in a mowable condition, and be weed and rubbish free.
- The street shall be cleared of any construction material, rubbish and surplus soil, and shall be maintained in a neat and tidy condition.
- Should site factors preclude compliance with any of these conditions, the Parks Planner must be advised in writing as soon as practicable and, in any case, prior to planting, and an alternative soil improvement methodology proposed to the satisfaction of the Advisor.
- Grassing shall only be undertaken when the weather is suitable i.e. mild, dull and moist, and when the ground is moist and workable. Where delays occur in the agreed programme which prevents areas being planted, the consent holder shall inform the Parks Planner immediately.

111. Prior to the issue of the section 224(c) certificate for each stage, the consent holder shall undertake and complete the works in accordance with the approved streetscape plans and the relevant Auckland Council Code of Practice or Specification at its sole cost, to the satisfaction of Council’s Parks Planning Team Leader.

112. Prior to the issue of the 224(c) certificate, the consent holder will provide to Council’s Development Engineer and Parks Consents Planning Team Leader as built plans for landscape works (hard and soft) within the drainage and utility reserves and streets in CAD and pdf form including the following details;

- Asset names.
- All finished hard and soft landscape asset locations and type, and any planted areas must be shown to scale with the square metres of planting, species and number of plants.

### **Maintenance Landscaping**

113. The street trees and landscape planting (excluding grassed berms), must be maintained to the standard required by this consent and subsequent approvals to the satisfaction of the Council’s Team Leader Regulatory Engineering South for the following periods after the section 224(c) certificate has been issued by the Council:

- 12 months for all street trees, landscaping and reserves (excluding grass mowing). Any faults, defects or damage to any of these works must be remedied at the consent holder's cost. Rubbish removal and repair or replacement required as a result of third party damage will not be the responsibility of the Consent Holder.



A bond ('maintenance bond') will need to be provided by the Consent Holder to ensure compliance with this condition. The bond amount must be 1.5x the contracted rate of any maintenance works. The bond will not be released until the consent holder provides evidence to the satisfaction of the Council that these requirements have been met.

#### **Linwood Road screening planting**

114. Prior to the issue of 224c certificate for stage 1, the consent holder shall implement the Linwood Road screening planting of English upright oak trees along the Linwood Road boundary (west of road 1), as shown on the landscape plans by Greenwood Associates.

#### **Open space planting**

115. Prior to the issue of 224c certificate for stage 1, the consent holder shall implement the private open space planting within Lots 3001 and 3002, as shown on the landscape plans by Greenwood Associates.

#### **Incorporated Society**

116. Prior to the issue of 224c certificate for the first stage of subdivision under this consent, the consent holder shall provide confirmation from their solicitor that an Incorporated Society has been established that is intended to own, operate and maintain the open space areas identified in the Karaka North masterplan and held in Lots 3001 and 3002 on the scheme plan. The Constitution of the Incorporated Society shall provide for levying of members from time to time to adequately finance future maintenance requirements of the open space areas.

#### *Advice Note*

*For the avoidance of doubt, Lots 3001 and 3002 will be progressively transferred to the Society's ownership as the development progresses, and that at the time of incorporation of the Society, no landholdings will be owned by the Society.*

#### **Geotechnical Completion Report**

117. A Geotechnical Completion Report by a suitably qualified and Registered Engineer shall be provided to Council with the 224c application for each stage in accordance with the "Auckland Council Code of Practice for Land Development and Subdivision Section 2.6". The report shall confirm the stability of the land for residential development including any special conditions/requirements to be met for any future development on the site. The Geotechnical Completion Report shall also include all associated as-built plans for earthworks and subsoil drains and a Statement of Professional Opinion on Suitability of the Land for building construction in accordance with Schedule 2A of that Code of Practice.

#### *Advice Note:*

*The findings of this Geotechnical Completion Report may necessitate the requirement for a consent notice on the residential lots in respect to future development of a dwelling.*

#### **Street names**

118. The consent holder is to submit a road naming application for the proposed new roads for approval by the Franklin Local Board prior to lodgement of the survey plan for the associated stage.

#### *Advice Note:*

*The road naming application should supply suggested street names (one preferred plus two alternative names in each case) and include evidence of meaningful consultation with local iwi groups.*

#### **Bonds**

### **Landscaping Bonds**

119. Prior to the issue of the 224(c) certificate, and in accordance with section 108(2)(b) of the RMA, an unconditional, on demand bond will be entered into where any landscape works required by the conditions of this consent have not been completed in accordance with the approved plans at the Council's discretion. The bond amount shall be 1.5 x the contracted rate of any outstanding works and shall be agreed in consultation with the Parks Planning Team Leader prior to lodging the bond. The liability of the consent holder shall not be limited to the amount of the bond. The bond shall be released upon the completion of the bonded works.

120. Prior to the issue of the 224(c) certificate, and in accordance with section 108(2)(b) of the RMA, the consent holder will provide the Council a refundable bond in respect of the maintenance of the landscaping works required by the conditions of this consent. The maintenance bond will be held for a period of one year from the issue of a practical completion certificate. The amount of the bond will be 1.5 x the contracted rate for maintenance and shall be agreed in consultation with the Parks Planning Team Leader. The bond shall be released upon the completion of the maintenance period to the satisfaction of Council.

### **Uncompleted works bonds**

121. Prior to lodgement of the section 224(c) certification and in accordance with section 108(2)(b) of the RMA, a refundable bond must be entered into by the consent holder where any works required by the conditions of this consent have not been completed in accordance with the approved plans. The bond amount will be 1.5x the cost of any outstanding works and will be agreed in consultation with the Council's Consent Planning Team Leader prior to lodging the bond. The bond shall be refunded upon the completion of the bonded works.

### **Post-construction conditions**

#### **Legal**

#### **Consent notices**

122. The consent holder shall register with the Registrar-General of Land a consent notice, under section 221 of the RMA, against the computer registers (certificates of title) for the specified lots. The consent notice shall record that conditions (123-132) are to be complied with on a continuing basis.

#### **Vehicle crossings around intersections**

123. A Consent Notice pursuant to section 221 of the RMA shall be registered on the Certificates of Title for Lots 452, 453, 455, 456, 462, 463, 534-536, 599-601, 616, 617, 624, 626, 911, 627-629, 632-634, 636-638, 641, 642, 914, 842, 874-878, 862, 863, 864, 867-871, 880-883 and 898 stating that the location of any future vehicle crossings to service the lot must be positioned in accordance with the consented location shown on the approved drawings titled Karaka North Village Roading Part Plan – Sheets 1 to 15, being drawing numbers 3001 to 3015 by Calthom Consultants.

#### **Dwelling ventilation**

124. A Consent Notice pursuant to section 221 of the RMA shall be registered on the Certificate of Title for Lot 7001, stating that for all future dwellings within 40m of Lot 1001 LT 560058, all habitable rooms of dwellings located on the first floor or higher shall be designed, constructed and maintained to ensure that they have adequate cooling and fresh air supply to meet the requirements of AUP standard E25.6.10.(3).

### **Building platforms**

125. A Consent Notice pursuant to section 221 of the RMA shall be registered on the Certificates of Title for Lots 447-488, 493-506, 517-526, 634-652, 801-825, 827-837, 849-853, 861-870, 872-873, 877-878, 882-883, 887, 899, 902, 904, 907 and 909-910 stating that all future dwellings and associated improvements must be located wholly within the building platform as shown on the approved drawings titled Proposed Subdivision (Step 2) Linwood Road / Dyke Road - Karaka – drawing numbers 1 to 10 by Yeomans Survey Solutions.

### **Screen of trees along Linwood Road**

126. A Consent Notice pursuant to section 221 of the RMA shall be registered on the Certificates of Title for Lots 622, 623, 625 and 626-645 stating that the screen of English upright oak trees planted along the southern boundary of the lot shall be retained and maintained in perpetuity.

### **Geotechnical**

127. A Consent Notice pursuant to section 221 of the RMA shall be registered on the Certificates of Title for any residential lots which are recommended for specific engineering investigation or design as outlined in the Geotechnical Completion Report required by these conditions to ensure that the conditions set out in that report are complied with on a continuing basis. All buildings are to be designed and constructed in accordance with the recommendations of a suitably qualified engineer that is familiar with the site constraints and the contents and recommendations of the various geotechnical reports for the site.

### **Minimum Floor Level**

128. A Consent Notice pursuant to section 221 of the RMA shall be registered on the Certificates of Title for Lots identified in the stormwater report stating that the design and construction of any building on the lot is to have a habitable floor level as per the requirements of the stormwater report under condition 97 of this resource consent.

### **Access onto Linwood Road**

129. A Consent Notice pursuant to section 221 of the RMA shall be registered on the Certificates of Title for Lots 589-595, 605-611 and 7001 stating that adequate space on-site must be provided to allow vehicles to enter and exit onto Linwood Road in a forward facing direction.

### **No access onto Linwood Road**

130. A Consent Notice pursuant to section 221 of the RMA shall be registered on the Certificates of Title for Lots 622, 623 and 625-645 stating that direct vehicular access onto Linwood Road is prohibited.

### **Sewer System – Consent Notice**

131. A Consent Notice pursuant to section 221 of the RMA shall be registered on the Certificates of Title for all Lots (excluding utility lots) stating that a low-pressure sewer system is adopted for this development and to ensure that the following conditions are complied with on a continuing basis:

*“A low-pressure sewer system has been adopted for the Affected Lots which requires installation of a private sewer grinder pump and storage tank. The private sewer grinder pump shall be of progressive cavity type, with grinder mechanisms designed specifically for domestic pressure sewer system application and be rated for continuous operation at 58 m head. Tanks shall be designed to AS/NZS1546.1 and have a minimum emergency storage volume of 660l above the pump operating level. Pump Control panel shall be*

*fitted with a suitable emergency generator connection. Alternative specifications to those set out above shall be agreed upon by the Consent Holder and Karaka Village Water Limited prior to issue of this consent notice. The private on-property equipment shall also comply with the requirements for privately owned pressure sewer equipment and materials as set out in the Watercare Code of Practice for Land Development and Subdivision. Commercially available examples of grinder pumps that are deemed to meet the above performance specifications at the time of the consents being granted are:*

- (a) the “E/One Extreme Series”, distributed by Ecoflow Ltd;*
- (b) the “Aquatec Pressure Sewer System” distributed by Oasis Clearwater Ltd; and*
- (c) the “Mono InviziQ Pressure Sewer system” distributed locally by NOV Mono Pumps NZ Ltd.*

*The registered owner of the Affected Lots is responsible for the funding, installation and ongoing maintenance and operation of the private sewer grinder pump and storage tank. All sewer infrastructure between the boundary kit and the dwelling is the responsibility of the registered proprietor.”*

Advice Note: The performance specifications and commercially available examples referred to in the above Consent Notice are to be reviewed throughout the design process to ensure that the most up to date pump information (and any other relevant details that become apparent) are provided for and confirmed in writing by Karaka Village Water Limited, prior to the issue of this consent notice.

### **Stormwater Management**

132. A Consent Notice pursuant to section 221 of the RMA shall be registered on the Certificates of Title for all Lots (excluding utility lots) confirming the stormwater mitigation requirements for coastal and stream catchments and to ensure that the following conditions are complied with on a continuing basis:

For lots in the Stream Receiving Environment Catchments as identified in the approved Engineering Plan Approval required under Condition 89:

*“Private stormwater mitigation devices (i.e retention tank for roofs and permeable paving or bioretention device for paved areas) must be established on each of the lots in general accordance with the approved Karaka North Village Stormwater Management Plan dated 20 September 2021 by Calthom Consultants (unless subsequently modified by agreement between the Consent Holder and Council).*

- All paved areas are treated through a bioretention device, or the use of a passive permeable paving system sized to meet the 5mm/m<sup>2</sup> retention (infiltration).*
- All Roof areas are treated through a stormwater reuse tank sized to meet a minimum of 5mm/m<sup>2</sup> retention (reuse) or 2,000 litres, whichever is the greater.*

*These are required to control stormwater runoff from all impermeable roof areas and paved areas on the Lot prior to discharging to the public stormwater system. The owner must operate, monitor and maintain the management systems in accordance with the conditions below and must not modify or remove the retention system without express written approval of Auckland Council:*

- Regular maintenance (no less than once every two years) of the stormwater management system (including the permeable driveway for all lots) must be carried out by the owner as required to ensure efficient operation; and*

- *Auckland Council may at any time upon prior written notice by its officers, employees, agents or contractors enter the property; to inspect or test the stormwater management system and; to inspect the owner's records in relation to the operation, monitoring and maintenance of the system.*
- *Auckland Council may, by notice in writing, instruct the owner to carry out any actions or works in relation to the operation, monitoring and maintenance of the stormwater management system. If the owner fails to carry out those actions or works within 7 working days of receiving Auckland Council's Notice, Auckland Council may carry out said work itself and enter the property to execute the work. Council may recover all costs of carrying out said work from the owner."*

For lots in the Coastal Receiving Environment Catchments as identified in the approved Engineering Plan Approval required under Condition 89:

*"A private stormwater mitigation device (i.e retention tank for roofs) must be established on each of the lots in general accordance with the approved Karaka North Village Stormwater Management Plan dated 20 September 2021 by Calthom Consultants (unless subsequently modified by agreement between the Consent Holder and Council).*

- *All Roof areas are to be diverted through a stormwater reuse tank sized to meet a minimum of 5mm/m<sup>2</sup> retention (reuse) or 2,000 litres, whichever is the greater.*

*The tank is required to control stormwater runoff from all roof areas on the Lot prior to discharging to the public stormwater system. The owner must operate, monitor and maintain the tank in accordance with the conditions below and must not modify or remove the retention system without express written approval of Auckland Council:*

- *Regular maintenance (no less than once every two years) of the stormwater management system must be carried out by the owner as required to ensure efficient operation; and*
- *Auckland Council may at any time upon prior written notice by its officers, employees, agents or contractors enter the property; to inspect or test the stormwater management system and; to inspect the owner's records in relation to the operation, monitoring and maintenance of the system; and*
- *Auckland Council may, by notice in writing, instruct the owner to carry out any actions or works in relation to the operation, monitoring and maintenance of the stormwater management system. If the owner fails to carry out those actions or works within 7 working days of receiving Auckland Council's Notice, Auckland Council may carry out said work itself and enter the property to execute the work. Council may recover all costs of carrying out said work from the owner."*

## **REGIONAL CONDITIONS - DAMMING OF WATER, FISH PASSAGE**

### **General conditions**

133. The construction of the fish passage and dam improvement works shall be carried out in general accordance with the documents and drawings and all supporting additional information submitted with the application, detailed below, and all referenced by the council as resource consent numbers REGxxx.

Application Form and Assessment of Environmental Effects prepared by Purpose Planning, dated 6 July 2022.

<b>Drawing title and reference</b>	<b>Author</b>	<b>Revision</b>	<b>Date</b>
Dam Spillway and Fish Passage Channel Drawing 4508	Calthom Consultants	C	15 March 2022

<b>Report title and reference</b>	<b>Author</b>	<b>Revision</b>	<b>Date</b>
Geotechnical Investigation Report Proposed Karaka North Village Ref 150711-C	Riley Consultants	-	16 November 2021
Existing Dam Review Proposed Karaka North Village	Riley Consultants	J	7 March 2022
Karaka North Village - Infrastructure Design Report	Calthom Consultants	E	20 March 2022
Karaka North Village – Ecological Assessment – Ref 63179	Bioresearches	5	2 February 2022

### **Lapsing of consent**

134. In accordance with clause 37(7) of Schedule 6 to the COVID-19 Recovery (Fast-Track Consenting) Act 2020, this consent lapses two years after the date it commences unless the consent is given effect to prior.

### **Monitoring**

135. The consent holder shall pay the council monitoring charges to recover the actual and reasonable costs incurred to ensure compliance with the conditions attached to this consent/s.

### **Pre-commencement conditions**

#### **Notification of works**

136. The Team Leader, Southern Compliance Monitoring, shall be informed, in writing, at least five working days prior to the start date of the works authorised by this consent.

#### **Pre-start Meeting**

137. Prior to the commencement of the activity, the consent holder shall hold a pre-start meeting that:

- (a) Is located on the subject site;
- (b) Is scheduled not less than five days before the anticipated commencement of earthworks;
- (c) Includes representation from the Team Leader Monitoring South; and
- (d) Includes representation from the contractors who will undertake the works.
- (e) The meeting shall discuss the erosion and sediment control measures, the earthworks methodologies and shall ensure all relevant parties are aware of and familiar with the necessary conditions of this consent.

The following information shall be made available at the pre-start meeting:

- (f) Timeframes for key stages of the works authorised under this consent;
- (g) Erosion and Sediment Control Plan
- (h) Resource consent conditions; and
- (i) Construction Management Plan.

#### **Advice Note:**

*To arrange the pre-start meeting required by condition 137 please contact the Team Leader, Monitoring South at [monitoring@aucklandcouncil.govt.nz](mailto:monitoring@aucklandcouncil.govt.nz) or 09 301 01 01. The conditions of consent should be discussed at this meeting. All additional information required by the Council should be provided two days prior to the meeting.*

### **Construction Management Plan**

138. At least 5 working days prior to the commencement of works on site, the consent holder shall submit to the Team Leader Monitoring South, a Construction Management Plan (CMP) for approval. The purpose of the CMP is to set out the management procedures and construction methods to be undertaken in order to avoid, remedy, or mitigate potential adverse effects arising from the construction period.

Contact details of the appointed contractor or project manager (24-hour contact details - phone number, e-mail, postal address). The location of a large notice board on the site visible from a public place that clearly identifies the name, telephone number, email and address for service of the Site Manager.

- (a) A general outline of the construction programme.
- (b) Measures to be adopted to maintain areas of the site that are visible from public spaces and private property in a tidy condition in terms of rubbish disposal, storage and unloading of materials, etc.
- (c) Measures to stockpile unearthed debris, preferably away from public roads and reserves, and their disposal.
- (d) Plans showing areas where stockpiles, equipment (including contractor parking) will occur so that there is no obstruction of public spaces (e.g. roads).
- (e) Plans showing the location of any site offices, staff facilities and staff car parking required during the construction period.
- (f) Ingress and egress to and from the site for vehicles and construction machinery during the works period.
- (g) Proposed hours of work on the site.
- (h) An overview of measures that will be adopted to prevent unauthorised public access during the construction period.
- (i) Procedures for controlling sediment run-off, dust, and the removal/ introduction of soil, debris, and materials associated with construction.

139. The CMP shall be implemented and maintained throughout the construction period. The CMP shall contain specific details relating to the construction and management of the approved works, including:

- (a) Dust mitigation/suppression measures to ensure that there is no airborne or deposited dust beyond the subject site as a result of the earthworks activity that is noxious, offensive or objectionable
- (b) Procedures for ensuring that owners and /or occupants in the immediate vicinity of the construction area are given prior notice of the commencement of construction activities and are informed about the expected duration of works and potential effects of the works (e.g. noise associated with construction activities).
- (c) Temporary protection measures that will be installed to ensure that there shall be no damage to public roads, footpaths, berms, kerbs, drains, reserves or other public assets as a result of the earthworks and construction activities.
- (d) All necessary steps shall be taken to avoid unnecessary damage to other utility services, roading network or private property, and any damage shall be made good at the consent holder's expense.

No works on the subject site shall commence until written confirmation from the Team Leader, Monitoring South is provided that the CMP is satisfactory. The approved CMP shall be implemented for the duration of the entire works period.

### **Erosion and sediment control plan**

140. Prior to commencement of fish passage and dam improvement works, a finalised Erosion and Sediment Control Management Plan (“ESCP”) is to be prepared and submitted to the Team Leader – Southern Monitoring for approval. No earthworks activity for the works is to commence until approval has been given by the Team Leader for the ESCP.

The ESCP is to contain sufficient detail to address the following matters:

- ensure no sediment is released into the stream during construction;
- specific erosion and sediment control works (location, dimensions);
- supporting calculations and design drawings as necessary;
- details of construction methods;
- timing and duration of construction and operation of control works (in relation to the staging and sequencing of earthworks)
- details relating to the management of exposed areas (e.g. grassing, mulching)
- monitoring and maintenance requirements.

The confirmed ESCP is to be implemented.

### **Final spillway design**

141. Prior to the commencement of works, a final spillway plan and design shall be prepared and certified by a suitability qualified geotechnical engineer. The final design shall detail the extents of the spillway constructed with concrete, rip rap, or reinforced planting.

142. A suitably qualified civil engineer shall confirm that the final design is capable of conveying the 10 year and 100 year stormwater flows from the consented subdivision.

### **During construction conditions**

#### **Works methodology**

143. All fish passage and dam improvement works are to be carried out in accordance with the methodology as detailed in section 6.6 of the Infrastructure Design Report by Calthom Consultants.

#### **Ecologist supervision**

144. All fish passage, rock placement and dam improvement works are to be carried out with input and guidance from a suitably qualified freshwater ecologist, to ensure construction works are carried out in an appropriate manner and the fish passage is completed in accordance with fish passage design guidelines.

#### **Ensure construction and earthworks activities do not obstruct access**

145. There shall be no obstruction of access to public footpaths, berms, private properties, public services/utilities, or public reserves resulting from the construction and/or earthworks activity. All materials and equipment shall be stored within the subject site’s boundaries.

#### **Ensure dust does not cause adverse effects**

146. There shall be no airborne or deposited dust beyond the subject site as a result of the earthworks that in the opinion of the Team Leader Southern Monitoring, is noxious, offensive or objectionable.

#### **Accidental Damage**



147. There shall be no damage to public roads, footpaths, berms, kerbs, drains, reserves or other public asset as a result of the earthworks activity. In the event that such damage does occur, the Team Leader Southern Monitoring shall be notified within 24 hours of its discovery.
148. Any damaged footpath, kerb, crossing as a result of the construction work shall be repaired, reinstated or reconstructed in accordance with the Auckland Transport Code of Practice to the satisfaction of the Council's Manager Regulatory Engineering South. The costs of rectifying such damage and restoring the asset to its original condition will be met by the consent holder.

### **Silt Discharges**

149. All earthworks shall be managed to ensure that no debris, soil, silt, sediment or sediment-laden water is discharged beyond the subject site to either land, stormwater drainage systems, watercourses or receiving waters. In the event that a discharge occurs, works shall cease immediately and the discharge shall be mitigated and/or rectified to the satisfaction of the Team Leader Southern, Monitoring.

### **Deposition**

150. There shall be no deposition of earth, mud, dirt or other debris on any public road or footpath resulting from earthworks activity on the subject site. In the event that such deposition does occur, it shall immediately be removed. In no instance shall roads or footpaths be washed down with water without appropriate erosion and sediment control measures in place to prevent contamination of the stormwater drainage system, watercourses or receiving waters.
151. Immediately upon completion or abandonment of earthworks on the subject site, all areas of bare earth must be permanently stabilised to the satisfaction of the Council.

#### *Advice Note:*

*Should any earthworks be completed or abandoned, bare areas of earth associated with the works must be permanently stabilised against erosion. Measures may include:*

- o The use of mulching or natural fibre matting.*
- o Top-soiling, grassing and mulching of otherwise bare areas of earth.*
- o Aggregate or vegetative cover that has obtained a density of more than 80% of a normal pasture sward.*

*The on-going monitoring of these measures is the responsibility of the consent holder. It is recommended that you discuss any potential measures with the Council's monitoring officer who will guide you on the most appropriate approach to take. Alternatively, please refer to Auckland Council Guidance Document 005, Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region, June 2016, Incorporating Amendment 1 (GD05).*

### **Tree removal**

152. The proposed tree removal on the dam embankment, located within the proposed spillway channel, shall be supervised by a geotechnical engineer and arborist, to provide input as to the removal methodology and treatment of tree roots. This is due to the potential for a deep root system, to ensure works are appropriately carried out.
153. All remaining trees on the embankment shall be checked for tree health and to assess any signs of seepage effects.

### **Post-construction conditions**

### Monitoring and surveillance

154. A monitoring and surveillance regime shall be developed and implemented in accordance with NZSOLD guidelines, that is commensurate with the low PIC of the dam.

This would cover aspects including:

- Regular inspection by the Consent Holder (including scope/frequency) and procedures following flood events (e.g. inspecting spillway for signs of damage and/or maintenance required).
- The dam is to be routinely inspected every quarter by the Consent Holder and after major storm events. If damages were to be noted in these inspections or other observation of concern with respect to dam safety, then advice from a dam engineer should be sought.
- As part of routine inspection, condition of the trees and signs of seepage will need to be checked detailed in the Existing Dam Review by Riley Consultants dated 7 March 2022.
- A visual inspection of the constructed fish passage is to be carried out to ensure it can operate as designed.
- No formal intermediate or comprehensive dam safety review is required for this structure.

### **REGIONAL CONDITIONS – DISCHARGE TO AIR AND DISCHARGE TO LAND**

#### General conditions

155. The discharge of contaminants into air and land shall 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 the council as resource consent numbers DISxxx.

Application Form and Assessment of Environmental Effects prepared by Purpose Planning, dated 6 July 2022.

<b>Drawing title and reference</b>	<b>Author</b>	<b>Revision</b>	<b>Date</b>
Karaka Subdivision Water & Wastewater Treatment Plant Site Layout – Irrigation Zones Drawing 2010203-L.004	Apex Environmental	A	7 July 2021
Karaka North Village Irrigation Field – Specimen Design Drawing 210203-P.001	Apex Environmental	A	11 November 2021
Karaka North Village Concept Layout Biological Reactor Tanks Drawing 210203-SKC.003	Apex Water	-	-
Karaka North Village Concept Layout Treated Wastewater Reservoir Drawing 210203-SKC.004	Apex Water	-	-
Karaka North Village Concept Layout Treated Water Reservoir Drawing 210203-SKC.005	Apex Water	-	-
Karaka North Village Concept Layout Wastewater Treatment Plant Building Drawing 210203-SKC.001	Apex Water	-	-

Karaka North Village Concept Layout Water Treatment Plant Building Drawing 210203-SKC.002	Apex Water	-	-
KWTP & KWWTP Site General Layout – Plan Drawing 200107 L000 Sheet 2/5	Apex Water	8	2 June 2022
Wastewater Part Plan - Sheet 13 Drawing 5013	Calthom Consultants	C	17 June 2022
Wastewater Details - Sheet 1 Drawing 5301	Calthom Consultants	C	15 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 1/11 – Drawing 210912/37	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 2/11 – Drawing 210912/38	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 3/11 – Drawing 210912/39	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 4/11 – Drawing 210912/40	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 5/11 – Drawing 210912/41	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 6/11 – Drawing 210912/42	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 7/11 – Drawing 210912/43	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 8/11 – Drawing 210912/44	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 9/11 – Drawing 210912/45	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 10/11 – Drawing 210912/46	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Stream 11/11 – Drawing 210912/47	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Water Treatment 1/2 – Drawing 210912/57	Greenwood Associates	-	1 March 2022
Karaka North Village Landscape Plan Set – Key Plan Set Water Treatment 2/2 – Drawing 210912/58	Greenwood Associates	-	1 March 2022

Karaka North Village Landscape Plan Set – Planting Detail – Drawing 210912/59	Greenwood Associates	-	1 March 2022
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Report title and reference	Author	Revision	Date
Karaka North Development – Treated Wastewater Discharge Assessment	Babbage	Final 1	14 February 2022
Karaka North Village WWTP – Odour Assessment	Tonkin & Taylor	C	18 January 2022
Design Report Karaka North Village Water & Wastewater Treatment	Apex Environmental	3	8 February 2022
Water and Wastewater Treatment at Karaka North Village – Hazardous Substances and Industrial Trade Activity Assessment	Tonkin & Taylor	1.3	17 March 2022

### Lapsing of consent

156. Consent DISxxxxxx expires thirty-five years from the date of commencement unless it has been surrendered or been cancelled at an earlier dates pursuant to the RMA.

### Monitoring

157. The consent holder shall pay the council monitoring charges to recover the actual and reasonable costs incurred to ensure compliance with the conditions attached to this consent/s.

### Treatment process and discharge facilities

158. The wastewater treatment process at the wastewater treatment plant and physical discharge facilities shall be designed, operated and maintained, and receiving environment monitoring shall be, in general accordance with the information provided with the application.

### Monitoring and access

159. The Council shall be provided access to the water and wastewater treatment plant and discharge facilities at all reasonable times for the purpose of carrying out monitoring procedures, inspections, surveys, investigations, tests, measurements or take samples while adhering to the consent holder's health and safety policies.

## SPECIFIC CONDITIONS – DISCHARGE TO AIR

### Wastewater Treatment Plant Discharge performance standards

160. Beyond the boundary of Lot 4004, there shall be no odour and/or dust caused by the discharges, which in the opinion of an enforcement officer, is the cause of a noxious, dangerous, offensive or objectionable effect.

161. Beyond the boundary of Lot 4004 there shall be no hazardous air pollutant, caused by discharges, which is present at a concentration that causes, or is likely to cause adverse effects to human health, ecosystems or property.

162. The wastewater treatment activities shall be operated, maintained, supervised, monitored and controlled by the consent holder to ensure that all emissions authorised by this consent are maintained at the minimum practicable level.

### **Enclosure and extraction of odour sources**

163. At a minimum the following must be enclosed and mechanically ventilated to an Odour Control Unit:

- headworks screens;
- sludge storage tanks and skips;
- sludge dewatering equipment; and
- wastewater sump.

The ventilation system is to be designed and operated to avoid fugitive emissions of odour from the ventilated sources or ventilation system.

### **Odour control unit performance**

164. All Odour Control Units used to treat mechanically ventilated air shall incorporate either:

- one or more carbon adsorber units designed, constructed, operated and maintained in accordance with this consent; or
- one or more biofilters designed, constructed, operated and maintained in accordance with this consent.

165. All carbon adsorber units shall be designed, constructed, maintained and operated in accordance with the following:

- In-line duct heating shall be provided on the inlet side of each adsorber unit to ensure that the temperature of the saturated air to the OCU can be raised to achieve reduced humidity to prevent moisture entrainment and optimal adsorption in the activated carbon bed. The capacity of heaters used for this purpose shall be sufficient to reduce the relative humidity of the maximum design inlet air flow to no greater than 70% from 100% at 20 degrees Celsius.
- The absorptive media shall comprise activated carbon that is steam activated and impregnated with sodium hydroxide or potassium hydroxide, potassium iodide or copper oxide.
- The depth of adsorptive media shall be such that the minimum residence time of airflow through the media is no less than 3 seconds at the maximum design airflow.
- The gas velocity of airflow through the adsorptive media shall be no greater than 0.2 m/s except with the prior approval of the Council where the manufacturer recommended gas velocity is greater than 0.2 m/s (in which case gas velocity through the activated carbon shall not exceed the manufacturer recommended gas velocity).
- The adsorptive media shall be evenly distributed in the bed so that no bypassing or short circuiting of inlet airflow occurs.
- The media is to be replaced as soon as practicable (and no later than within one month) where testing conducted in accordance with Condition 172 indicates that saturation may occur within two months of testing.

166. All biofilters shall be designed, constructed, maintained and operated in accordance with the following:

- The Empty Bed Residence Time at the maximum design airflow shall be no less than 72 seconds;
- Bed media shall be visibly damp below the surface with a moisture content of generally between 50% and 70% on a dry weight basis;
- The media pressure drop, measured at the exit from the air distribution system, shall be no greater than 150mm water gauge;
- Even distribution of air flow through the filter bed;

- There shall be no bypass of untreated air around the sides of or through fissures in the filter bed;
- An operating pH, in the bed media between the surface and to a depth of 600mm, in the range of between 5 and 8.

#### **Avoidance of anaerobic process conditions**

167. The anoxic balance tank and anoxic tank processes shall be controlled to ensure that anaerobic conditions are avoided in each tank.

168. The DO concentration in any aeration tanks shall not remain below 0.1 ppm for more than 12 consecutive hours.

169. If the DO concentration in an aeration tank is less than 0.2 ppm for more than 8 consecutive hours the consent holder shall notify the Council within 24 hours and investigate and determine the cause and take the action necessary to ensure the compliance limits are not breached. The consent holder shall document each trigger level exceedance and investigation and provide summaries in the annual report and provide to the Council within 48 hours of a request.

170. Membrane filter tanks shall be maintained in an aerobic state at all times.

#### **Monitoring**

171. The Consent Holder shall monitor and record operational parameters of WWTP units as follows:

- Continuous flow metering of all influent flows to the WWTP;
- Continuous monitoring of Dissolved oxygen concentration in each aeration tank;
- Continuous monitoring of Oxidation-reduction potential in the anoxic balance tank and each anoxic tank; and
- Continuous monitoring of operation of fans of the mechanical ventilation system.

The data shall link to the wastewater treatment plant SCADA system with alarms to indicate alert level exceedances as set out in the Operations and Maintenance Manual. All data, including flow records, shall be recorded for a minimum of five years and provided to the Council within 48 hours of a request.

172. The Consent Holder shall monitor and record operational parameters of the air ventilation system and OCUs as follows:

- Vacuum pressure in the enclosed headspace of mechanically ventilated odour sources on a weekly basis.
- For carbon adoption units:
  - Temperature and relative humidity of air inflow to and outflow from each inline duct heater on at least a weekly basis;
  - Saturation of the adsorptive media on at least a monthly basis;
- For biofilters:
  - A visual and olfactory assessment of the condition of the biofilter bed media, including moisture content and the potential for short circuiting, cracking or clogging of the bed, on at least a weekly basis;
  - (ii) Pressure drop across biofilter media bed, measured at post the air distribution system, on at least a weekly basis;

- (iv) A gravimetric determination of biofilter medium moisture content on a monthly basis for the first six months operation then six monthly thereafter; and
- (v) The pH of the biofilter medium on a six-monthly basis.

A log shall be maintained of the results of monitoring conducted in accordance with this condition. The log shall be made available to the Council on request.

173. Prior to commissioning of the WWTP, the consent holder shall install and thereafter operate and maintain a meteorological monitoring station at or within 500 m of the WWTP site to record wind speed, wind direction, ambient air temperature and relative humidity. At a minimum:

- The monitoring station shall include an ultrasonic anemometer or equivalent measurement device capable of measuring wind speeds at a resolution of no greater than 0.1 m/s and capable of measuring wind direction at a minimum wind speed of no greater than 0.1 m/s.
- Weather parameters shall be measured continuously, at a frequency of not more than 1-minute intervals and recorded as 10-minute averages
- 10-minute averaged meteorological data shall be retained in the form of an electronic record for a minimum of five years. Meteorological data shall be provided to the Council within 48 hours of a request.
- The monitoring station shall be calibrated in accordance with the manufacturers' recommendations for each instrument, with the documentation of the calibration retained and shall be provided to the Council within one week of a request.

#### **Operator availability**

174. An appropriately trained wastewater operator will be available twenty-four hours a day and seven days per week to respond to any plant contingencies that may cause an adverse odour nuisance effect outside the site boundary.

#### **Preventative maintenance**

175. The consent holder shall implement a system of scheduling, undertaking and documenting preventative maintenance on all equipment critical to the effective operation of the odour control systems and other plant processes that affect odour as set out in the Operations and Maintenance Manual. An updated copy of the maintenance schedule shall be provided with the annual report each year. Information which demonstrates compliance with this shall be provided to the Council within 5 working days of a request.

#### **Power outages**

176. The following management measures for power outages shall be implemented:

- A power outage alarm system shall be installed and maintained which provides electronic notification of (via SMS and email at a minimum) of any loss of mains power supply to the wastewater treatment plant.
- The consent holder shall maintain a generator on site that is configured to automatically start upon loss of mains power supply. The generator shall be of sufficient capacity to power all aeration systems, recycle pumps, odour control and air extraction systems, at a minimum.
- The alarm system, Dissolved oxygen probe and supporting data telemetry system shall be powered by an uninterruptable power supply with a minimum 4-hour battery life.

#### **Critical spares**

177. The consent holder shall implement the following, such that the equipment critical to the effective operation of the Wastewater treatment plant, Odour control units and air

extraction system and ongoing compliance with the conditions of this consent is operational as soon as practicable and no later than 24 hours after any failure or outage:

- hold onsite or maintain reliable access to spare equipment critical to the effective operation of the Wastewater treatment plant, Odour control units and air extraction system and ongoing compliance with the conditions of this consent; and
- retain staff or contractors capable of installation and maintenance of the equipment.

### **Air discharge management procedures**

178. The consent holder shall within 3 months of the operation of the wastewater treatment plant provide to the Council for certification, an Operations and Maintenance Manual. The Operations and Maintenance Manual shall in adequate detail accurately record all monitoring, management and operational procedures, methodologies and contingency plans required to comply with the conditions of this consent.

At a minimum, the Operations and Maintenance Manual shall include:

- An overview description of wastewater treatment plant processes and activities and associated sources of odour and other air contaminants;
- Identification of potential odour sources (including potential fugitive odour sources), risks of odour impacts associated with each source and procedures for minimising risks as far as practical.
  - For each odour source and emission control system, this is to include identification of key process operating parameters for odour management, how these will be monitored, alert level thresholds, and procedures to respond to alert level exceedances.
  - Procedures for scheduling, undertaking and documenting preventative maintenance on all equipment critical to the effective operation of each odour source and emission control system.
  - Identification of critical spares and procedures to ensure availability of critical spares.
  - Contingency procedures for each emergency, plant breakdown, equipment failure and malfunction scenario that could result in an increase in emissions to air.
- Procedures for implementing the monitoring requirements of this consent.
- Training and induction of personnel operating the wastewater treatment plant.
- Procedures for responding to and investigating complaints relating to odour or other air contaminants emitted from the wastewater treatment plant.
- Roles and responsibilities of personnel for implementing the requirements set out in the Operations and Maintenance Manual.
- Contact details of key personnel including after hours.
- Procedures for reviewing and/or improving the Operations and Maintenance Manual.

The Operations and Maintenance Manual shall be reviewed and updated at least once every two years.

### **Annual reporting**

179. The consent holder shall provide to the Council a written report by 30-June each year for the activities authorised. At a minimum the report shall:

- Assess compliance with each condition of this resource consent.
- Analyse and provide reasons for any non-compliance or difficulties in achieving compliance with the conditions of this resource consent.
- Summarise the result of monitoring conducted in the preceding 12 months in accordance with Conditions 171 and 172 and compare with the results of the previous annual reporting period.
- Describe preventative maintenance completed in the preceding 12 months in accordance with Condition 175, provide reasons for any non-completion of



scheduled maintenance and provide the maintenance schedule for the up-coming year.

- Describe any works that have been undertaken to improve the environmental performance of the OCUs or ventilation system in the preceding 12 months or that are proposed to be undertaken in the up-coming year to improve or that may affect the environmental performance of the OCUs or ventilation system.
- Identity and detail that location of critical spares maintained in accordance with Condition 177.
- Summarise any complaints received in relation to discharges to air, the results of any investigations and corrective actions taken in response.
- Describe any changes to the procedures of the OMM implemented in the preceding 12 months that may influence discharges to air from the wastewater treatment plant and reasons for the changes.

### **Notification of potential non-compliance**

180. The consent holder shall notify the Council as soon as practicable, and as a minimum requirement within 24 hours, of the consent holder becoming aware of any accidental discharge, mechanical failure, or other circumstances which has resulted in, or is likely to result in, a breach of any condition of this consent.

181. The consent holder shall, within 7 days of the incident occurring, provide a written report to the Council, identifying the condition breached, possible causes, steps undertaken to remedy the effects of the incident and measures that will be undertaken to ensure future compliance.

### **Complaint response**

182. The consent holder shall maintain a log of all complaints (including those received via third parties including the Council) regarding odour. The consent holder shall notify the Council of each complaint as soon as practicable. The complaint log shall be made available to the Council at all reasonable times on request. The consent holder shall record the following details in the complaint log:

- Time and type of complaint including details of the incident, e.g. duration, location and any effects noted;
- Name, address and contact phone number of the complainant (if provided);
- The weather conditions at the time of incident and including the data collected from the weather station required by this consent;
- The likely cause of the complaint and the response made by the consent holder including any corrective action undertaken if applicable;
- Future actions proposed as a result of the complaint, if applicable; and
- The response from the consent holder to the complainant.

### **Review of conditions**

183. The Council may, within one month following each anniversary of commencement of this consent, serve notice on the consent holder under section 128(1) of the Resource Management Act 1991, of its intention to review the conditions of this resource consent for the following purposes:

- Deal with any significant adverse effects on the environment arising from the exercise of the consent which was not foreseen at the time the application was considered and which is appropriate to deal with at the time of the review.
- Consider the adequacy of conditions which prevent nuisance and adverse effects beyond the boundary of the Site, particularly if regular or frequent complaints have been received and validated by an enforcement officer.
- Consider developments in control technology and management practices that would enable practical reductions in the discharge of contaminants to air.

- Alter the monitoring requirements, including requiring further monitoring, or increasing or reducing the frequency of monitoring.

## **SPECIFIC CONDITIONS – DISCHARGE TO LAND**

### **Discharge to irrigation field**

#### **Rate of Discharge to Irrigation Field**

184. The total volume of treated wastewater discharged to the irrigation field shall not exceed 850m<sup>3</sup>/day.
185. The rate of application shall not exceed 20 millimetres per day in any part of the land application area.
186. Should soil moisture monitoring, as specified by Condition 217 indicate that the soil of one or more of the individual zones within the irrigation field is at risk of becoming waterlogged before irrigation commences, these individual irrigation zones shall be isolated and treated wastewater shall be diverted to the other irrigation zones, or alternatively to the infiltration trenches. No treated wastewater irrigation shall commence into the isolated zones until the soil moisture content, as specified by Condition 217 indicates that the soil moisture levels are suitable for irrigation.
187. The discharge shall only be treated domestic and commercial wastewater as described in the consent application and as detailed within the Karaka North Village Water and Wastewater Treatment Design Report (Ref:210203).
188. The land application area shall be designed in general accordance with the figure in Appendix 1 of the Karaka North Village Water and Wastewater Design Report (Ref:210203)] by Apex Environmental.
189. The land application area shall not be used:
- For roading whether sealed or unsealed;
  - As a hardstanding area;
  - For erecting buildings or any non-effluent system structures; or
  - For activities that require intensively managed grass surfaces (e.g. grass tennis courts, bowling greens and golf tees and greens)
190. The land application area shall be planted with grass, shrubs, trees or a fodder crop species and can be grazed by cattle or sheep or mowed.
191. The total nitrogen loading in the land application area shall not exceed 220 kilograms of nitrogen per hectare per year. The calculated nitrogen loading shall be included as an item within the Condition 207 annual report.
192. A buffer zone of a minimum of ten metres shall be maintained between the discharge of wastewater in the land application area and any surface water body, stormwater channel and/or pond.
193. The consent holder shall submit the detailed design of the irrigation field to the Council before installation. The detailed design shall include, at a minimum:
- A final layout of the overall irrigation field and irrigation zones;
  - A layout showing buffer distances from watercourses, buildings, bores and other features requiring buffer separation from the irrigation drip lines;

- A landscape plan, highlighting planting, paths, fencing, gates and other landscape features within the irrigation field including suitable grass species; and
- Details of the sub-surface irrigation system design, including dripline depth, emitter type, emitter spacing and lateral spacing.

194. The land application pasture area shall be planted with grass species that have roots that typically extend in excess of 300mm below the ground surface.

**Performance Monitoring:**

195. The consent holder shall give the Council no less than 10 working days' notice of the first exercise of this consent.

196. Prior to the exercise of this consent, the consent holder shall install a flow meter, at a location approved by the Council, to record the daily volume of wastewater discharged to the land application area. A record of the volume of wastewater discharged daily to the land application area shall be kept by the consent holder at all times. The consent holder shall forward the record for the previous year to the Council upon request.

197. Prior to the exercise of this consent, the consent holder shall establish adequate facility and access for wastewater quality sampling of the treated wastewater before the wastewater discharges to the land application area. This shall be at the minimum:

- A manual valve located within the treatment plant compound;
- Located post the last treatment step but prior to discharge to either the irrigation field or infiltration trench; and
- Installed in a position accessible from ground level but no higher than 1.5m.

198. Within one month of the first exercise of this consent, the consent holder shall supply the Council with a Producer Statement/Certificate of Compliance from a suitably qualified person, certifying that the wastewater treatment plant and land application areas have been constructed as required by this consent.

199. The consent holder shall provide as-built plans and aerial photos of the treatment and land application system to the Council prior to the exercise of this consent, and when any substantive changes are made to the land application system. These shall include the following:

- Plans of the treatment system;
- Plans of the land application area clearly showing all the irrigation zones; and
- Details of the area of each zone, the maximum volumes of wastewater that can be discharged to each zone (m<sup>3</sup>/day), the duration of discharge (hours) and daily frequency of each zone application.

**Groundwater Monitoring**

200. The consent holder shall establish a control piezometer up-gradient of all land application areas at least six months prior to exercising this consent and begin groundwater monitoring in accordance with Condition 202 of this consent.

201. The consent holder shall establish a down-gradient piezometer at least six months prior to exercising this consent. and begin groundwater monitoring in accordance with Condition 202 of this consent.

202. The piezometers shall be installed in accordance with the methods given in New Zealand Standard 4411:2001, "*Environmental Standard for Drilling of Soil and Rock*". The

consent holder shall confirm the exact location of the piezometers with the Council prior to installation. A bore log shall be forwarded to the Council for each of the piezometers installed in accordance with Conditions 200 and 201 of this consent. Each log shall clearly indicate the depth of the bore and the depth to groundwater.

203. The consent holder shall investigate and forward a written report to the Council within 15 working days of receiving notice of an exceedance if any of the following are met:

- The down-gradient monitoring bores have a nitrate-nitrogen concentration greater than 5 mg/L; and/or
- The down-gradient monitoring bores have an Escherichia coli of 10cfu/100mLs or more.

The report shall outline the likely reasons for the exceedance and methods to reduce the adverse effect.

204. Following the commissioning of the treatment and land application system, the consent holder shall obtain representative samples (for submission to the council and inclusion within the Annual Report referenced in Condition 207), of the treated effluent and test for the following parameters.

Parameters	Monitoring Frequency
Total nitrogen Nitrate-nitrogen Ammoniacal nitrogen Carbonaceous 5-day biochemical oxygen demand (cBOD5) Total suspended solids Total phosphorus Escherichia coli pH	Monthly

**Compliance Limits**

205. The effluent from the wastewater treatment system immediately prior to discharge to the land application area shall comply with the following criteria:

Parameters	12-month median shall not exceed
Total Nitrogen [mg/L]	5
cBOD5 [mg/L]	5
Total Suspended Solids [mg/L]	4
Total Phosphorus [mg/L]	2
Escherichia-coli [CFU/100mL]	2

206. If the treated effluent from the wastewater treatment system exceeds the limits set in Condition 205 above, the consent holder shall investigate and provide an explanation of the potential causes and corrective actions of the exceedance within 15 working days of obtaining the monitoring results.

207. The consent holder shall prepare and, if requested by Council, forward an annual report in writing to the Council by 30 June each year. The annual report shall cover the preceding 12-month period (from 1 April the preceding year until 31 March of the current

year) and shall report on compliance with this consent. As a minimum, the report shall include:

- A summary of the year's monitoring results, in context of the previous years' results;
- A summary of the volumes of treated wastewater discharged to land, including;
- A summary of the quality of treated wastewater discharged to land;
- A summary of the volumes of treated wastewater discharged to the irrigation field;
- A summary of the volumes of treated wastewater discharged to the infiltration trench;
- A summary of the soil moisture monitoring data and irrigation zone availability
- The calculated nitrogen loading to the irrigation field
- A summary of all analytical results from the monitoring bores or piezometers and an interpretation of the groundwater quality results, particularly with regard to the discharge of treated wastewater;
- Comments on compliance with this consent
- A summary of any complaints received, the validity of each complaint and the corrective action taken;
- A summary of any malfunctions or breakdowns and the corrective action taken; and
- Any other issues considered relevant by the consent holder.

208. At all times the consent holder shall provide to Council, on request, the most up-to-date Operations and Management Manual.

209. A maintenance service contract, which provides for the operation and servicing of the treatment and land application systems shall be entered into with an appropriately qualified contractor prior to the exercising of this consent. The contract shall include a requirement to ensure that the treatment and land application system is operated and managed in accordance with the Operations and Management Manual prepared in accordance with Condition 234 of this consent.

**General:**

210. All analysis carried out in connection with this consent shall be performed by a laboratory that meets ISO 17025 standards, or otherwise as specifically approved by the Council.

211. No ponding or surface run-off of effluent shall occur on the irrigation field as a result of the exercise of this consent.

212. No sludge or grease is permitted to be discharged to land or water.

**Soil Monitoring**

213. Following the first discharge from the WWTP, the Consent Holder shall engage a suitably qualified and competent individual to take composite soil sampling on an annual basis from four representative locations, selected at their discretion within the irrigation fields. Once the development has been fully utilised and at design capacity for a minimum period of two years, subject to Auckland Council approval, soil monitoring frequency may be reduced to once every three years if results indicate soil composition has not been impacted by irrigation discharge. Soil monitoring shall be undertaken by a suitably qualified and experienced person, who shall provide advice to the Consent Holder if results indicate the soil quality has deteriorated because of the WWTP discharge.

214. The soil samples shall be analysed for the following parameters:

- pH
- Exchangeable potassium
- Exchangeable calcium

- Exchangeable sodium
- Exchangeable magnesium
- Exchangeable sodium percentage
- Cation exchange capacity
- Sulphate-S
- Phosphate retention (anion storage capacity)
- Olsen phosphorus
- Total nitrogen
- Sodium absorption ratio

215. All sample analyses shall be undertaken by an IANZ accredited or equivalent laboratory. All methods shall be appropriate for the sample analyses undertaken.

### **Soil Moisture**

216. Following the first discharge from the WWTP, and on an annual basis, an independent, suitably qualified, and experienced, soil scientist shall be engaged to assess the soil conditions and collect samples for soil hydraulic conductivity (Ksat and K40) from four representative locations within the irrigation fields. The location of the sampling sites shall be recorded on an accurate, scaled map of the wastewater irrigation fields. The findings of the assessment along with any recommended remedial actions, shall be forwarded to Council. Once the development has been fully utilised and at design capacity for a minimum period of two years, subject to Council approval, the soil monitoring frequency may be reduced to once every three years if results indicate soil conditions have not been impacted by irrigation discharge. Soil monitoring shall be undertaken by a suitably qualified and experienced person, who shall provide advice to the Consent Holder if results indicate the soil quality has deteriorated because of the WWTP discharge.

### **Irrigation Management**

217. At least three months prior to the discharge of wastewater, the Consent Holder shall provide to Auckland Council an 'Irrigation Management Plan' (IMP). The IMP shall be prepared by a suitably qualified and experienced person(s). This IMP shall include at a minimum:

- An overview description of the irrigation system
- A description of the irrigation system functionality
- Details of the irrigation system design, including:
  - Depth of the irrigation laterals
  - Materials of construction
  - Design flowrates and pressures
  - Types of emitters
- Details of the acceptable plant species within the irrigation field
- A methodology for monitoring soil moisture levels to estimate suitability for irrigation
- A map of the irrigation field highlighting the following:
  - The individual irrigation zones
  - The area of each irrigation zone
  - The location of key equipment and monitoring points
- Maximum allowable application rates, as dictated by this consent
- Maximum allowable nutrient loading to each zone, as dictated by this consent
- An emergency response plan detailing responses to emergency scenarios

218. The following minimum buffer distances shall be maintained at all times for the irrigation of the Karaka North development wastewater irrigation:

- At least 5 m from all external property boundaries

- All least 20 m from all watercourses
- At least 50 m from any water take or groundwater bore

### **Discharge to Rapid Infiltration trench**

#### **Specific conditions**

219. The treated wastewater compliance monitoring point for the purpose of monitoring compliance with Conditions 220 and 223 shall be at a point within the treatment plant compound, immediately following the final wastewater treatment plant treatment step.

#### **Discharge Limits**

220. The consent holder shall ensure that the quality of the treated wastewater at the treated wastewater compliance monitoring point does not exceed the limits as set out below:

<b>Parameters</b>	<b>Median</b>
Total Nitrogen (mg/L)	5
Ammoniacal Nitrogen (mg/L)	2
cBOD5 (mg/L)	5
Total Suspended Solids (mg/L)	4
Total Phosphorus (mg/L)	2
Escherichia-coli (cfu/100mL)	2

221. For the purposes of condition 220, to determine compliance with median limits no more than 6 samples out of any 12 consecutive monthly samples shall exceed the specified limit.

222. Prior to the exercise of this consent, the consent holder shall install a flow meter, at a location approved by the Council, to record the daily volume of wastewater discharged to the infiltration trench. A record of the volume of wastewater discharged daily to the land application area shall be kept by the consent holder at all times. The consent holder shall forward the record for the previous year to the Council upon request.

#### **Treated Wastewater Monitoring (Immediately After Wastewater Treatment Plant)**

223. The consent holder shall continuously monitor treated wastewater discharge flows and volume, with data linked to the wastewater treatment plant SCADA system. In addition, the Consent Holder shall take 24-hour flow proportioned samples of the treated wastewater on a monthly basis from the treated wastewater compliance monitoring point, for the purposes of determining compliance with Condition 224. All wastewater quality analyses shall be undertaken by an IANZ accredited or equivalent laboratory. All methods used shall be appropriate for the wastewater analyses undertaken.

224. The consent holder shall take 24-hour flow proportioned samples (taken in accordance with Condition 223) of the treated wastewater on a monthly basis from the treated wastewater compliance monitoring point and analyse for the parameters set out below.

<b>Parameters</b>	<b>Unit</b>
Total Nitrogen	(mg/L)
Ammoniacal Nitrogen	(mg/L)
Nitrate Nitrogen	(mg/L)
Nitrite Nitrogen	(mg/L)
Soluble cBOD5	(mg/L)
Total Suspended Solids	(mg/L)
Dissolved Reactive Phosphorus	(mg/L)
Total Phosphorus	(mg/L)

Escherichia-coli	(cfu/100mL)
Temperature	°C
Electrical Conductivity	□S/cm
Total Residual Chlorine	(mg/L)
pH	-

## Receiving Environment Monitoring Programme

### Monitoring of Whangamaire Stream

225. The consent holder shall undertake water quality monitoring at the general locations specified below:

- Whangamaire Stream upstream of the land application area at Glassons Bridge
- Whangamaire Stream downstream of the land application area and discharge from rapid infiltration trench.

226. The sample sites shall be confirmed with the Council at least three months prior to the exercise of this consent.

227. For a period of at least 12 months prior to commencement of wastewater discharge, the Consent Holder shall take surface water quality samples on a quarterly basis at two locations within the unnamed stream present on Site (Source and LwrStr) and the Whangamaire Stream estuary (UppEs and LowEs), as identified in the Babbage report titled Karaka North Development Treated Wastewater Discharge Assessment dated 14 February 2022. The purpose of this sampling is to establish a baseline of stream quality prior to the commencement of the development discharges.

228. Following the first discharge from the WWTP, the Consent Holder shall obtain surface water quality samples on a quarterly basis at the same locations within the unnamed stream and the Whangamaire Stream estuary. Once the development has been fully utilised and at design capacity for a minimum period of 2 years the in-stream monitoring frequency may be reduced to every 3 years, provided that results indicate no significant change in surface water quality has resulted from the discharge. Water quality monitoring shall be undertaken by a suitably qualified and experienced person, who shall provide advice to the Consent Holder if results indicate the water quality has deteriorated because of the WWTP discharge.

229. After a period of 2 years, subject to Council approval, the in-stream monitoring frequency may be reduced to an annual basis, provided that results indicate no significant change in surface water quality has resulted from the discharge.

230. All surface water quality samples shall be tested for the following parameters:

- pH
- Total Suspended Solids
- Total ammoniacal nitrogen
- Nitrate-nitrogen
- Nitrite-nitrogen
- Total nitrogen
- Dissolved reactive phosphorous
- Total phosphorous
- Escherichia coli
- Soluble cOBD5



All sample analyses shall be undertaken by an IANZ accredited or equivalent laboratory. All methods shall be appropriate for the sample analyses undertaken.

### **Discharge Volume**

231. The discharge to the rapid infiltration trench shall not exceed a maximum volume of 850m<sup>3</sup> of treated wastewater per day.

### **Discharge Location**

232. The discharge location shall be to land via rapid infiltration trench alongside the unnamed tributary of the Whangamarie Stream as shown in Figure 5 of the Karaka North Village Water and Wastewater Treatment Design report Ref 210203

### **Discharge Monitoring**

233. The consent holder shall monitor the flow rate of treated wastewater discharged to the infiltration trench (prior to the discharge location) and shall record the total daily discharge volume.

### **Operations and Management Plan**

234. Prior to the commencement of the discharge of treated wastewater, the consent holder shall prepare an Operations and Management Plan (**OMP**). The objective of the OMP is to provide a framework for the operation and management of the WWTP and discharge facilities to ensure compliance with the conditions of consent. The OMP shall be submitted to the Council for certification that it is consistent with the requirements of this condition. The OMP shall be reviewed and updated every three years by the consent holder and as required as a result of any significant changes in WWTP and discharge facilities' operation or management that could affect the quality and quantity of the discharge. An electronic copy of the OMP shall be provided to the Council within 10 working days of a request to do so.

#### **As a minimum, the OMP shall include:**

- A full description of the entire treatment and land application system, including a site map showing the location of the treatment system and the land application area and sampling sites;
- A description and schedule of the routine inspection, monitoring and maintenance procedures to be undertaken to ensure operation of the WWTP and discharge facilities, complies with this consent;
- A description of the sampling location/s and methodology for sampling the treated wastewater discharge;
- A schedule of the critical aspects of the WWTP and the detailed response and contingency plans to remedy any possible variations from normal plant operation that could potentially affect discharge quality;
- Details of contingency plans and procedures to address a critical power or equipment failure at the WWTP;
- Procedures for recording routine maintenance and all major repairs that are undertaken;
- The consent holder's chain of command, responsibility and notification protocols;
- A description of odour mitigation measures at the site;
- The means of receiving and dealing with any complaints; and
- Procedures for continuous reviewing and improving of the manual.

235. Any improvement or review of the OMP shall be consistent with the objective of the OMP and submitted to the Council for certification.

### **Riparian Planting**

236. Riparian planting to be carried out on top of and down slope of the infiltration trench shall be in general accordance with the Greenwood Associates Plans (210912/48-56) in condition 155.

**Monitoring of Ecology**

237. For a period of at least 12 months prior to commencement of the discharge from the treatment plant, the Consent Holder shall undertake a surface water ecology survey each season at two locations within the unnamed stream present on Site (Source and LwrStr) and the Whangamaire Stream estuary (UppEs and LowEs). The purpose of this sampling is to establish a baseline of stream ecology prior to the commencement of the development discharges.

238. Following the commencement of the discharge, the Consent Holder shall conduct ecology surveys on a yearly basis, during spring, at two locations within the unnamed stream present on Site (Source and LwrStr) and the Whangamaire Stream estuary (UppEs and LowEs). Once the development has been fully utilised and at design capacity for a minimum period of 2 years, subject to council approval, the in-stream monitoring frequency may be reduced to once every three years if results indicate the ecological community has been unaffected by the discharge. Ecological monitoring shall be undertaken by a suitably qualified and experienced person, who shall provide advice to the Consent Holder if results indicate the water quality has deteriorated because of the WWTP discharge.

239. All surface water ecology surveys shall, as a minimum, meet the following requirements:

- Provide an assessment of fish and macroinvertebrate communities, physical habitat quality, macrophytes and periphyton
- Shall be undertaken by person(s) suitably qualified in freshwater ecology
- Shall not be undertaken within two weeks of a flood event
- Shall report on any significant trends observed over time

**REGIONAL CONDITIONS – STORMWATER DIVERSION AND DISCHARGE FOR RURAL ZONED LAND**

**General conditions**

240. The stormwater diversion and discharge for rural zoned land shall 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 the council as resource consent numbers DISxxx.

Application Form and Assessment of Environmental Effects prepared by Purpose Planning, dated 6 July 2022.

<b>Report title and reference</b>	<b>Author</b>	<b>Revision</b>	<b>Date</b>
Karaka North Village Stormwater Management Plan	Calthom Consultants	Final	20 September 2021
Karaka North Village - Infrastructure Design Report for 327 Lot Subdivision	Calthom Consultants	B	27 June 2022

**Lapsing of consent**

241. Consent DISxxxxxx expires thirty-five years from the date of commencement unless it has been surrendered or been cancelled at an earlier dates pursuant to the RMA.

## **Monitoring**

242. The consent holder shall pay the council monitoring charges to recover the actual and reasonable costs incurred to ensure compliance with the conditions attached to this consent/s.

## **SPECIFIC CONDITIONS**

243. All impervious areas within rural zoned land must include stormwater systems and mitigation devices for the management of quantity and / or quality of the stormwater runoff, designed in general accordance with the approved Karaka North Village Stormwater Management Plan dated 20 September 2021 by Calthom Consultants, (unless subsequently modified by agreement between the Consent Holder and Council).

244. The following parameters shall be adopted for impervious areas within a Stream Receiving Environment Catchment.

- All impervious areas within the road reserve are treated through a vested bioretention device, and / or the use of a passive permeable paving system sized to meet the 16.27mm/m<sup>2</sup> detention and 5mm/m<sup>2</sup> retention.
- All impervious areas within private lots are treated through a vested bioretention device, to meet the 16.27mm/m<sup>2</sup> detention.
- All paved areas on private lots are treated through a bioretention device, or the use of a passive permeable paving system sized to meet the 5mm/m<sup>2</sup> retention (infiltration).
- All roof areas on private lots are treated through a stormwater reuse tank sized to meet a minimum of 5mm/m<sup>2</sup> retention (reuse) or 2,000 litres, whichever is the greater.

245. The following parameters shall be adopted for impervious areas within a Coastal Receiving Environment Catchment.

- All impervious areas within the road reserve and private lots are treated through a swale device for water quality in accordance with the BPO approach in the Stormwater Management Plan.
- All roof areas on private lots are to be diverted through a stormwater reuse tank sized to meet a minimum of 5mm/m<sup>2</sup> retention (reuse) or 2,000 litres, whichever is the greater.