Technical memo – Natural Resources & Specialist Input Unit

To:	Jackson Morgan, Senior Planner, Central Resource Consents
CC:	Rod Dissmeyer, Team Leader Stormwater, Wastewater and ITA Specialist Unit
From:	Grant Fleming, Consultant, Riley Consultants Ltd
Date:	25 July 2022

1.0 APPLICATION DESCRIPTION

Application and property details

Applicant's Name:	Te Motu A Hiaroa Charitable Trust
NRSI application number:	[TBC] DIS60xxxxxx
NRSI file number:	
Service centre application number:	LUC60394962
NRSI activity type:	The discharge of up to 17,500 litres per day of domestic wastewater from the proposed marae complex to land.
Site address:	600 Island Road, Puketutu Island, Mangere
Legal Description	Area 1 DP 445871, Area 2 DP 445871
Site Coordinates	NZTM: 1755335mE: 5907607mN

2.0 PROPOSAL, SITE AND LOCALITY DESCRIPTION

2.1 Proposal relevant to this permit/consent only

The applicant is seeking a discharge consent to authorise the discharge of treated wastewater to land from the proposed Marae and Kaianga (housing) complex on this site. This island includes a number of activities (grazing, mining and land filling) however the focus of this application is solely the proposed complex to be located on the island northern coastal margin.

The onsite system is to cater for the majority of the onsite usage, however during larger events discharge to a municipal sewer connection is available.

A full description of the proposal is provided in the documents listed under Condition 1 of the consent. In brief:

- The proposed complex is to include the following main buildings:
    - Kauta (cookhouse)
    - Kihini (kitchen)
    - Wharekai (dining area)
    - Mare Atea (open meeting area)
    - Tupuna Whare (ancestral meeting house/marae); and
    - Wharepaku (toilets).
- During normal events all wastewater from these facilities will be collected and discharged into a new advanced secondary wastewater treatment system with UV disinfection prior to discharge on the site.
- During larger or extended events excess wastewater is to be diverted to an existing municipal sewer connection already located in the site.
- Water supply is to be provided through an existing municipal water main.

2.2 Site and Activities/Proposal

2.2.1 Site Description

The site is located on the northern coastal margin of Puketutu Island in the Manukau Harbour, Mangere, Auckland. The island is approximately 1km from the mainland, directly accessible via a causeway and the island has historically been used as a quarry and landfill activities as well as pastural and rural residential land. The marae has been present for numerous years on the north of the island and occupied approximately one third of the total island site (total area of approximately 187.4ha).

The island is a historic volcanic cone which has been subsequently quarried and now the site elevations rise from sea level to up to 60m at the highest point (cone remnant). The proposed marae complex area is generally located on the low-lying areas on the northern portion of the island where the site slopes are 5-15°. The proposed discharge system is to be located on the slightly elevated eastern section of the site at an elevation of RL 5-10m (refer site plans).

No watercourses are in close proximity to the proposed discharge areas. The closest surface water (for assessment purposes) is the coastal marine area/mangrove wetland of the Manukau Harbour. The minimum separation between this area and the discharge system is 44m.

A site investigation to confirm the soil and groundwater conditions for the proposed wastewater system was undertaken as part of this application. This consisted of 4 hand auger boreholes in the recommended location of the discharge system and reserve areas. Due to the nature of the site, these boreholes met refusal at approximately 0.4m (i.e. too hard to auger), encountering fine loamy sands overly volcanic deposits of silt, ash and gravels. Overall the applicant has assessed these soils as being good draining, category 3-4 soils. Groundwater was not encountered during the investigation and based on their knowledge of the site, the proposed discharge area elevation and the free-draining volcanic soils, the applicant has advised the groundwater are highly unlikely to be any closer than the 0.6m required by the proposed treatment offered.

This assumption is considered reasonable and the applicant's assessment of soil and groundwater conditions appear appropriate for the site.

With regards to the National Environmental Standard, Freshwater (NES:F); a review has been completed by the applicant which identifies the coastal mangrove areas as being classified as natural wetlands. Therefore an assessment under this standard is required.

The applicant has advised that the nature of the site is such that for the majority of the time the occupancy levels will be relatively low and all the wastewater will be collected, treated and discharged on site. However, during certain events (e.g. Tangi) the population residing on site could increase dramatically and for extended periods. During these times a portion of the collected wastewater will be discharged through a local pump station to the municipal sewer connection located on the island. Through this mechanism the peak loading and compliance with discharge flow limits will be controlled in an automatic manner.

2.3 Wastewater System Design

Design Daily Flow

The design flow for the proposed discharge is based on the applicant's estimation of the likely use of the site during both normal peak usage scenarios including residents and day only visitors in general accordance with Auckland Council TP58. From this a design discharge volume (prior to offsite discharge) of 17.5m^3/day has been recommended (detailed below).

Table 1: Design flow summary

Facility	Design Occupancy	Design Flow Allowance (litres/person/day)	Design Flow Rate (litres/day)
12x Kaianga (dwellings)	5	160	9,600
Marae staff	5	40	200
Marae day visitors	180	40	7,200
Discharge Volume			17,000
Design Discharge Volume			17,500

This daily flow will form the basis for the on-site treatment plant and discharge system design.

During larger or extended events, it is estimated that the guest numbers will likely increase and include a greater number of overnight visitors. During these events the on-site treatment threshold will be exceeded and the automated offsite discharge will be utilised.

Wastewater Treatment and Disposal System

The design of the treatment plant has not yet been finalised. However the applicant has confirmed that the plant will consist of an advanced secondary treatment plant (equivalent to ST plus recirculating sand filter) followed by ultraviolet disinfection. The system will be designed to consistently produce an effluent quality as detailed below.

Table 2: Discharge Effluent Parameters

Parameter	Concentration Limit
Biochemical Oxygen Demand (BOD_5)	10 mg/L
Total Suspended Solids (TSS)	10 mg/L
Total Nitrogen (TN)	40 mg/L
Faecal Coliforms	200 CFU/100 ml

A new drip-based irrigation system is to be laid in accordance with the plans provided and will consist of a single discharge area. Based on the site and soils investigation the applicant has recommended a peak discharge rate for the system of 3.5mm/day. The system is to consist of 5,000 lineal metres of surface placed drip irrigation lines with laterals laid at 1.0m centres and covering the 5,000m² designated area. This area is elevated and within areas of existing pasture/regenerating bush.

The applicant has specified an additional 5,000m^2 (100%) reserve area located as per the site plans in a similar area to the primary area.

3.0 REASON FOR CONSENT – ONSITE WASTEWATER DISCHARGES

3.1 Reasons for consent

Auckland Unitary Plan – Operative in Part

The discharge is considered as a Discretionary Activity under section E5.4.1 (activity A6) of the Auckland Unitary Plan (Operative in Part) as the discharge exceeds 6m^3/day.

National Environmental Standards – Freshwater

The proposed discharge of treated wastewater is located within 100m (setback 44m) from a natural wetland (coastal mangroves). As such, the water activity is a non-complying activity under Reg 54(c) of the Resource Management (National Environmental Standards for Freshwater) Regulations 2020.

4.0 TECHNICAL ASSESSMENT OF EFFECTS

4.1 Assessment of effects on the environment

The key environmental effects that should be considered are the impact on surface water, impact on groundwater, impact on soils and the impact on amenity values. It is critical that potential future effects of an on-site system are considered at the design stage and are minimised in the long term by good system management.

The ARC (now Auckland Council) developed guidelines in ARC Technical Publication No. 58 (TP58) to address the management of on-site treatment and land disposal of wastewater from domestic sources. These guidelines identify effective and environmentally sustainable options for the disposal of domestic type wastewater in non-sewered areas. Wastewater treatment and disposal systems which accord with TP58 recommendations are considered to be 'best practice design' and in general terms adverse effects on the environment are considered to be no more than minor. Table 3 below identifies different design characteristics and compares TP58 recommendations with the design provisions of the proposal. Further explanation of compliance with these provisions is explained below the table.

Table 3: Summary of the Proposal's Compliance with TP58

Characteristic	TP58 Recommendation	Design Provision	Complies?
Design Flows Marae Complex (standard fixtures, municipal water supply)	Total for site 17,500 litres/day	Total for site 17,500 litres/day	Yes[1]

Characteristic	TP58 Recommendation	Design Provision	Complies?
<u>Treatment System</u>			
Advanced secondary treatment	<10:<10 BOD:TSS	<10:<10 BOD:TSS	Yes[2]
UV disinfection	<200 MPN/100ml	<200 MPN/100ml	Yes[2]
Septic retention time	48 hours	48 hours	Yes[2]
Emergency storage	24 hrs	24 hrs (within the system)	Yes[2]
<u>Disposal System</u>			
Surface based drip irrigation system	5mm/day-Cat 4 soils	3.5 mm/day	Yes
Disposal area (areal)	PCDI – 3,500m^2 (min)	PCDI – 5,000m^2	Yes
Reserve disposal area	50%	100%	Yes
<u>Separation Distances</u>			
Habitable buildings	1.5 - 3m	1.5	Yes
Property boundaries	1.5m	1.5m	Yes
Surface water	>15m	>15m	Yes
Water supply bore	>20m	n/a	Yes
Groundwater	>0.6m	>0.6	Yes
Drained retaining walls	The greater of 3m or distance that transects the surface at a 45-degree angle from base of the slope.	n/a	Yes
Flood plain	Outside 1 in 20	Outside 1 in 100	Yes
<u>Public Health</u>	Restrict direct contact with effluent	Surface discharge system within private land.	Yes
<u>Cultural Heritage</u>	N/A	There are no known archaeological sites or wähi tapu within the immediate vicinity of the wastewater treatment system.	Yes

Characteristic	TP58 Recommendation	Design Provision	Complies?
Maintenance Maintenance contract	6 monthly	Conditions will require maintenance contract and management plan.	Yes

Notes:

1) The design flows for the on-site treatment plant have been based on the expected usage of the site during normal operation. During peak operation a portion of the wastewater generated on the site will be discharged offsite. The applicant proposes that this is controlled through a management plan and will configure to ensure the on-site system is not excessively loaded at its peak for extended periods.

2) The treatment plant that is to service the site has not yet been confirmed. In this instance the applicant has recommended a design standard that any future plant should achieve. This approach is acceptable. However additional conditions have been recommended requiring that the proposed system be reviewed by the council and approved prior to installation and operation.

The application report outlined the assessment of the effects of the proposed wastewater discharges on the environment (prepared by Civix Ltd). This indicated that the proposed discharge through the proposed system (with appropriate maintenance and monitoring) would likely have minimal effect on the receiving environment. I concur with the applicant's assessment.

In light of the treatment and disposal methods provided, the separation distances provided between the point of discharge and features of the receiving environment (such as surface waters and seasonal groundwater levels) and monitoring and management proposed, it is considered that the discharge of treated wastewater will result in less than minor adverse effects on the environment given adequate maintenance and compliance with recommended conditions. The proposal meets public health recommendations and there are no known archaeological features on, or in close proximity, to the wastewater treatment and disposal system.

4.1 Potential Effects on the Natural Wetlands

The discharge of the domestic wastewater to land has the potential to have adverse effects on the water quality and ecological values of natural wetlands through alteration of the hydrological regime and the discharge of contaminants.

An assessment on the affects of the discharge has been prepared by Civix Ltd. The results of their assessment, given the distance between the field and the wetland was that the discharge would have negligible effects on the wetland.

The wastewater will be treated to high-quality advanced secondary standard and then disinfected before discharge to land through drip irrigation at a conservative rate. The PCDI drip irrigation system will be installed on the surface and well separated from

wetland and other surface water features. Additionally the effluent quality will be regularly tested to ensure the treatment process is working as designed. The potential risk of adverse effects on the hydrology and water quality of the natural, coastal wetlands have been minimised by locating the primary disposal area approximately 44m from the outermost extent of the wetland.

Based on my assessment, I consider the potential for adverse effects to be suitably avoided. The design and long-term management of the onsite system will be ensured through recommended conditions of consent. Appropriate conditions of consent have been recommended

4.2 Affected parties

The adverse effects of the proposal have been assessed as less than minor and it is considered that no persons are adversely affected by the activity.

5.0 STATUTORY CONSIDERATIONS

5.1 Relevant Statutes

In terms of section 104(1)(b) of the Resource Management Act 1991 the relevant policy statements and plans or proposed plans for assessment purposes are the New Zealand Coastal Policy Statement (NZCPS) 2014, Hauraki Gulf Marine Park Act (HGMPA), National Policy Statement for Freshwater Management 2020 (NPSFM), the Auckland Unitary Plan (Operative in Part) (AUP-OiP).

National Policy Statement for Freshwater Management 2020 (NPSFM)

I have considered the NPSFM 2020's Objective and Policies in my assessment. The objective of the NPSFM 2020 is to ensure that natural and physical resources are managed in a way that prioritises:

(a) first, the health and well-being of water bodies and freshwater ecosystems

(b) second, the health needs of people (such as drinking water)

(c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

5.2 Other relevant matters

There are no other matters considered relevant and reasonably necessary to consider with respect to section 104(1)(c) of the RMA there are no other matters considered relevant and reasonably necessary to determine the application.

5.3 Matters relevant to discharge or coastal permits (Section 105) and restrictions on certain permits (Section 107)

It is considered that the provisions of section 105 have been met subject to appropriate conditions of consent to ensure there is no significant effect on the receiving environment. Regard has been had to the nature of the discharge and the sensitivity of the environment. It is considered the applicant's reasons for the proposed choice are appropriate in the circumstances and regard has been had to alternative methods of discharge applicable in this case.

It is considered the proposal satisfies the provisions of section 107 because the proposed discharge will not result in discharge to water that will cause, after reasonable mixing, any of the effects listed in Section 107(1) (c – g)[1].

5.4 Duration of consent: Section 123

The applicant has not requested a consent term. As the wastewater treatment and land disposal systems are natural systems which can become degraded over time and requires regular assessment to determine their suitability for ongoing use. Therefore a consent term of 15 years is recommended given the high treatment level offered by the proposed system and the relatively low risk associated with this discharge.

At the expiry of the consent, the quality of receiving soils, the performance of the systems and need for any upgrade should be assessed for the system if the discharge consent is still required.

6.0 RECOMMENDATION AND CONDITIONS

6.1 Adequacy of information

The above assessment is based on the information submitted as part of the application. It is considered that the information submitted is sufficiently comprehensive to enable the consideration of the above matters on an informed basis:

a. The level of information provides a reasonable understanding of the nature and scope of the proposed activity as it relates to the Unitary Plan.

b. The extent and scale of any adverse effects on the environment are able to be assessed.

[1] S.107(1)(c-g) effects include the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials; any conspicuous change in the colour or visual clarity; any emission of objectionable odour; the rendering of fresh water unsuitable for consumption by farm animals and; any significant adverse effects on aquatic life.

6.2 Recommendation

The assessment in this memo does not identify any reasons to withhold consent, and the aspect of the proposal considered by this memo could be granted consent, subject to recommended conditions, for the following reasons:

1. It is considered that the overall adverse effects on the receiving environment are less than minor. Subject to the imposition of conditions, the effects can be further avoided, remedied or mitigated.

2. The sensitivity of the receiving environment to the adverse effects of the discharge will not be compromised given the level of the discharge, the application of suitable control technology and appropriate on-site management techniques.

6.3 Conditions

I recommend the consent, should it be granted, be subject to the following conditions.

Condition 1: **Activity in accordance with plans**

The discharge of treated domestic wastewater from the marae complex to land shall be carried out in accordance with the plans and all information submitted with the application, detailed below, and all referenced by the council as consent number [TBC] DIS60xxxxxx.

Application form, and assessment of environmental effects prepared by Civix Ltd, dated December 2021.

Report title and reference	Author	Rev	Dated
600 Island Road, Mangere Bridge - Infrastructure Report	*Civix Ltd*		*4 July 2022*

Plan title and reference	Author	Rev	Dated
Wastewater Plan, Dwgs 50000-50005	*Civix Ltd*		*4 July 2022*

Other additional information	Author	Rev	Dated
Section 92 response letter and attachments	*Civix Ltd*		*4 July 2022*

Condition 2: **When the consent lapses**

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

a. The consent is given effect to; or

b. The council extends the period after which the consent lapses.

Condition 3: **Duration of the consent**

The discharge of treated domestic wastewater to land ([TBC] DIS60xxxxxx) shall expire on 30 August 2037 unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.

Condition 4: **Monitoring charges**

The consent holder shall pay the council an initial consent compliance monitoring charge of $335 (inclusive of GST), plus any further monitoring charge or charges to recover the actual and reasonable costs incurred to ensure compliance with the conditions attached to this consent.

Advice Note:

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

Condition 5: **Provide for a review under section 128**

That the conditions of this consent may be reviewed by the Council pursuant to Section 128 of the RMA, by the giving of notice pursuant to Section 129 of the Act, in March 2022 and two-yearly every March thereafter in order:

a. To vary the size or design of the treatment system and/or size or design of the land disposal area in light of increased understanding of the system or further information, changes in circumstances, or the results of monitoring; or

b. To alter monitoring requirements in light of previous monitoring results and/or changed environmental conditions or circumstances; or

c. To deal with any significant adverse effect on the environment which may arise from the exercise of the consent and which was not apparent at the time of the granting of the consent; or

d. To require a Consent Holder to adopt the best practicable option to remove or reduce any adverse effect on the environment resulting from the discharge, including measures to decrease water usage and/or discharge flow volumes.

Advice Note:

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

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

In the case of a coastal, water or discharge permit, to provide compliance with any relevant national environmental standard that has been made since the commencement of consent.

At any time, if it is found that the information made available to the council in the application contained inaccuracies which materially influenced the decision and the effects of the exercise of the consent are such that it is necessary to apply more appropriate conditions.

Condition 6: **Wastewater volume**

The wastewater discharge volume to land shall not exceed 17.5 m^3/day peak or 15 m^3/day over any one week period.

Condition 7: **Discharge quality standards**

The quality of treated wastewater immediately before it is discharged to the land disposal system shall not exceed the standards specified below.

Parameter	Units	Discharge standard
5-day Biochemical Oxygen Demand (BOD_5)	mg/L	10
Total suspended solids (TSS)	mg/L	10
Faecal coliforms (FC)	MPN (or CFU)/100ml	200
Total nitrogen (TN)	g/m^3	40

Condition 8: **Wastewater system design**

The key components of the wastewater treatment and land disposal system shall be consistent with those described in the application and shall comprise at least the following minimum, or additional, components, dimensions and standards:

a. Wastewater Treatment Plant comprising:

(1x) Wastewater treatment system that has been confirmed as capable of treating wastewater to an advanced secondary or better standard with UV disinfection prior to discharge to soil (as specified in condition 7).

(1x) Water supply flow meter or a treated effluent discharge flow meter, with an accuracy of +/- 5% or better.

(1x) High water level audible and visual alarm system with sensors in the main treatment system and/or pump chamber.

(1x) Automated diversion system to discharge excess flows to the sewer network in compliance with peak daily and average weekly flows.

(1x) Emergency storage volume equivalent to at least 24 hours peak flow volume above the operating and high water alarm trigger levels.

b. Wastewater land disposal system:

a) At least 5,000m^2 land disposal area with pressure compensated drip irrigation (PCDI) system consisting of 5,000m of line, line spacing of 1m, emitter spacing of 0.6m and with clearly marked flush valves at the end of each line. The PCDI lines shall be securely pinned to the soil surface and covered in mulch/leaf litter.

b) At least 100% reserve land disposal area (5,000m^2).

The primary and reserve wastewater land disposal areas shall be located in accordance with the approved plans and shall be a minimum distance of:

- 15m from roadside drains
- 15m from surface water and
- 15m from property boundaries.

Condition 9: **Wastewater design approval**

The design prepared to meet the standards as specified in Condition 7 shall be submitted to the Council and approved as acceptable **prior to implementation**.

The following information shall be provided as a minimum:

- Plans, drawings and specifications showing details of the proposed treatment plant and confirming its capacity and expected discharge effluent quality; and
- Plans, drawings and specifications detailing how the peak flow diversion system will operate including how daily and weekly consent limits for the on-site discharge will be complied with.

Advice Note:

Any proposal or changes to the proposal which will affect the capacity or performance of the wastewater treatment and land disposal system will require an application to Council pursuant to section 127 of the RMA.

Condition 10: **Minor modifications approval (post installation)**

In the event that any minor modifications to the wastewater treatment or disposal system are required, that will not result in an application pursuant to Section 127 of the RMA, the following information shall be provided:

- plans and drawings outlining the details of the modifications; and
- supporting information that details how the proposal does not affect the capacity or performance of the wastewater treatment or disposal system.

All information shall be submitted to and approved by the Council **prior to implementation**.

Advice Note:

All proposed changes must be discussed with the Auckland Council and certified in accordance with this condition, prior to implementation. The modification may only be undertaken if it does not:

- *affect the capacity or performance of the wastewater system negatively,*
- *change the intent of the consent; or*
- *result in a change to the conditions of the consent.*

Any changes to the proposal which will affect the capacity or performance of the wastewater treatment and land disposal system will require an application to Council pursuant to section 127 of the RMA. An example of a minor modification may be a change to the location of a pipe.

Condition 11: **Certification of wastewater treatment and land disposal system (as-built plans)**

As-built certification and plans of the wastewater treatment and land disposal system, which are certified (signed) by a suitably qualified and experienced wastewater professional as a true record of the wastewater system, shall be provided to the Council for approval.

Condition 12: **Contents of as-built plans**

As-built plans shall be provided to the Council either:

- no less than 5 days prior to the post-construction inspection meeting required by condition 13 below; or
- within 5 days of the discharge commencing;

whichever is the earlier.

The as-built plans shall display the entirety of the wastewater system, and shall include:

- location, dimensions and levels of any drainage field and reserve drainage field;
- plans, descriptions and dimension of all wastewater devices, including confirmation of the storage volumes and levels of any outflow; and
- details any other structures or works required by this consent (e.g. a fence or a stormwater diversion drain upslope of the land disposal area),

Condition 13: Post-construction inspection

The consent holder shall contact the Council within 3 months of the completion of works relating to the wastewater treatment and land disposal system so that a post-construction inspection can be undertaken by the Council.

The post construction meeting shall be:

a. located on the subject area;

b. include representation from the Council; and

c. include representation from the applicant's wastewater specialist, maintenance operator or contractors who have undertaken the works and any other relevant parties.

Advice Note:

To arrange the post-construction meeting required by this consent, please contact the Council.

Condition 14: Land disposal area vegetation coverage

The land disposal area shall be planted as soon as reasonably practicable and no later than six months from the completion of pressure compensating drip irrigation (PCDI) line installation. A dense vegetative cover of suitable plant species (as recommended by TP58 Appendix G, or by a suitably qualified professional with expertise in botany) shall be established and maintained that achieves at least 75% ground coverage within one year of completion of PDCI line installation to the satisfaction of the Council.

Condition 15: Fencing

A suitable fence shall be installed and maintained that prevents stock access/discourages unauthorised human access to the land disposal area.

Condition 16: Land disposal area performance

The discharge of wastewater to land shall not result in:

- ponding of wastewater within or adjacent to the land disposal area;
- channelling of wastewater that results in overland runoff of wastewater beyond the land disposal area;
- surface seepage (breakout) of wastewater beyond the land disposal area.

Condition 17: Use of reserve wastewater disposal area

Written approval from the Council shall be obtained prior to the use of all or part of the reserve land disposal area. In order to assist the Council to determine whether or not to approve use of all or part of the reserve wastewater disposal area the following information shall be provided:

- The reason why the reserve land disposal area is needed;
- An assessment of the condition of the primary land disposal area and any maintenance or other mitigation measures required to allow its continued use;
- An assessment of discharge flow volumes on the site and an assessment of options to manage or reduce flows; and
- An updated site plan showing the proposed layout of the irrigation lines within the reserve land disposal area.

Condition 18: Protection of the reserve wastewater disposal area

The reserve wastewater land disposal area shall be protected and maintained so that it remains available for future wastewater disposal should it be required. Retaining walls, buildings, or other permanent structures (including but not limited to vehicular access ways) that may compromise the future use of the reserve land disposal area for wastewater disposal shall not be established in the reserve land disposal area and any earthworks carried out within the reserve land disposal area shall be limited to minor disturbances of the topsoil and gardening.

Condition 19: Maintenance standard

The wastewater treatment and land disposal system shall be maintained in good working order at all times.

Condition 20: Operation and Maintenance Plan

Within three months of the discharge commencing, an Operation and Maintenance Plan for the on-going operation and maintenance of the wastewater treatment and land disposal system shall be submitted to the Council for certification. The Plan shall include:

- Details of a 6 monthly inspection programme (or more frequent if required by the system's manufacturer) to be undertaken by a suitably qualified wastewater professional to inspect and maintain the key components of the wastewater treatment and land disposal systems.
- Operation and maintenance of the pump station, including automated diversion controls to sewer system configured to ensure the on-site

system is not excessively loaded at its peak during larger or extended events.

- A schedule, instructions, checklist and forms for all operation and maintenance tasks required for the satisfactory operation of the wastewater treatment and land disposal systems, including:
    - solids removal;
    - filter cleaning;
    - pump maintenance;
    - flushing of PCDI lines (without discharging flushed liquid off site or into surface water);
    - inspection of the land disposal area and vegetation management within it;
    - annual replacement of UV lamps;
    - flow meter readings;
    - taking, handling and transportation of samples;
    - the checklist shall clearly specify who is responsible for completing the required maintenance (for example the consent holder may be responsible for monthly cleaning of the outlet filter monthly and the maintenance contractor for the inspection and maintenance of other treatment system components).
- Names of appropriate people to contact in the event system malfunctions occur including contact telephone numbers.

The wastewater treatment and disposal system shall be managed in accordance with the Operation and Maintenance Plan.

Condition 21: **Maintenance Contract**

A written maintenance contract for the on-going maintenance of the key components of the system(s) shall be entered into with an appropriate wastewater treatment system operator, prior to the operation of the system(s). A written maintenance contract shall be in place and maintained for the duration of the consent.

A copy of the current maintenance contract and any replacement contract(s) shall be provided to the Council within three months of a contract being entered into.

Advice Note:

If a wastewater professional that the consent holder has entered into a maintenance contract with becomes unable to fulfil the obligations of the contract, for any reason, then the consent holder will need to enter into a maintenance contract with another suitably qualified wastewater professional as soon as possible after becoming aware that the original provider will no longer be able to fulfil their contractual obligations.

Condition 22: Wastewater flow meter readings

A wastewater meter shall be installed to continuously monitor discharge flows from the wastewater treatment system to the discharge system.

The wastewater meter shall be read and the meter reading recorded automatically for the life of the consent when the wastewater system is being used.

Meter readings shall be recorded on a form that contains the following information: the consent number, site address, consent holder's name, the date the flow reading was recorded, the meter reading, and the calculated discharge flow volume.

The Council may decrease or cease the frequency of flow monitoring (after the system has been operating for a minimum of 24 months) if requested by the consent holder. The Council may require flow meter readings to recommence at any stage to assist in monitoring compliance with this consent.

Condition 23: Discharge quality monitoring

Samples of treated wastewater shall be collected and analysed quarterly during February, May, August and November of each year for the following parameters.

Parameter	Units
5-day Biochemical Oxygen Demand (BOD_5)	mg/L
Total suspended solids (TSS)	mg/L
Faecal coliforms (FC)	MPN (or CFU)/100ml
Total ammoniacal nitrogen (NH_3)	g/m^3
Total nitrogen (TN)	g/m^3

All samples shall be collected and analysed in accordance with the latest edition of "*Standard Methods for the Examination of Water and Wastewater*", a joint publication of the American Public Health Association, Water Environment Federation and the American Water Works Association; or an alternative method that has been approved in writing by the Council. The samples must be analysed at an IANZ (International Accreditation New Zealand) accredited laboratory.

The Council may decrease or cease the frequency of effluent sampling or reduce tested parameters after the system has been operating for a minimum of 24 months if requested by the consent holder. The Council may require the full testing regime to recommence at any stage to assist in monitoring compliance with this consent.

Advice Note:

It is anticipated that if a request is made to the council to remove parameters from the testing suite this is due to it being determined that the contaminant is not present in discharged wastewater in quantities of concern and/or that the influent composition does not vary significantly.

Condition 24: Actions if discharge volume or quality standards are exceeded

In the event of any exceedance of the consented discharge volume or quality standards the Consent Holder shall:

- Advise the Council of the exceedance within 2 working days of the exceedance being detected;
- Advise the Council of the actions taken/being taken to address and remedy the cause of the exceedance within 5 working days of the exceedance being detected;
- Undertake additional sampling and analysis at the request of the Council to verify the wastewater treatment and land disposal system is being operated in accordance with the consent discharge standards.

Condition 25: Reporting

The following information shall be submitted to the Council by 30 September of each year:

- Maintenance service records for the preceding period of 1 September to 31 August;
- Flow monitoring records for the preceding period of 1 September to 31 August; and
- Results and analysis of the Discharge Quality Monitoring samples for the preceding period of 1 September to 31 August.

4.1 ADVICE NOTES

Specific advice notes – discharge permit [TBC] DIS60xxxxxx

Advice Note 1: Water saving devices

The consent holder is recommended that full water reduction fixtures are installed in the facilities serviced by the wastewater treatment and land disposal system to minimize wastewater production. Full water reduction fixtures include, but are not limited to, the following:

- *Dual flush (6/3 litre) toilet cisterns*
- *Shower flow restrictors*
- *Front load/low water consumption water conserving automatic washing machine*

- *Low water use dishwasher*
- *Water flow restrictors to provide maximum flows of 9L/min for kitchen and shower fixtures, 6L/min for bathroom faucets, and 10 L/min for laundry faucets.*
- *In addition, no extra wastewater producing fixtures including garbage grinders, baths and multi-head showers should be installed.*

Advice Note 2: Contact Details

All information requirements of this consent including the engineer's certificates, as-built plans, maintenance contract, operations and maintenance plan, annual flow monitoring records, copies of maintenance service records, audit reports any other monitoring requirements of this consent can be emailed to the Council at monitoring@aucklandcouncil.govt.nz.

Please include the consent number in the email title.

Advice Note 3: Flushing of PCDI Lines

Flushing of pressure compensating drip irrigation (PCDI) lines should be conducted in a manner that does not result in discharges of flushed liquid off the property or into surface water.

7.0 REVIEW

Memo prepared by:
Grant Fleming
Consultant, Riley Consultants Limited

Date: 25 July 2022

Memo and technical review reviewed and approved for release by:
Rod Dissmeyer
Team Leader Stormwater, Wastewater and ITA Specialist Unit

Date: 25th July 2022

8.0 DEFINITIONS

ACRPS:	means Auckland Council Regional Policy Statement

Council:	means Auckland Council
District Plan:	means any operative or proposed plan administered by any of the following former Territorial Authorities as at to 1 November 2010.
NES	means National Environmental Standard
NPS	means National Policy Statement
NZCPS:	means New Zealand Coastal Policy Statement 2010
AUP (OIP):	Auckland Unitary Plan (Operative in Part), 15 Nov 2016
RMA:	means Resource Management Act 1991 and further amendments
TP58	means Auckland Council Technical Publication Number 58, Third Edition, 2004

Site Plan


DWG 50003
DWG 50004
50000
EASEMENTS
WW NEW END CAP
WW NEW FITTING
WW NEW DEVICE
WW NEW MANHOLE
WW NEW STRUCTURE
WW EX. ENDCAP/ROD. EYE
WW EX. FITTING
WW EX DEVICE
WW EX MANHOLE
WW ABANDONED MANHOLE
WW NEW PVT PIPE
WW NEW PUB PIPE
WW EX PVT PIPE
WW EX PUB PIPE
WW ABANDON PVT PIPE
RETAINING WALLS W DRAINAGE
PRIVATE TREE
PUBLIC TREE
PUBLIC TO REMOVE
BUILDINGS
IMPERMEABLE PAVEMENT
PERMEABLE PAVEMENT
LIGHTS
PROPOSED CONTOURS
DISSTING PARCELS
EX KERBLINES
NEW PARCELS
PERVIOUS
TYPE
DECK
LANDSCAPE
WW ABANDON PUB PIPE
DIA_GEOM1
WW ABANDON PUB PIPE
CIVIX
600 ISLAND ROAD, MANGERE BRIDGE
WASTEWATER PLAN
FOR RESOURCE CONSENT
50000
1:4,000 A3
04/07/2022
LH
LH
SB