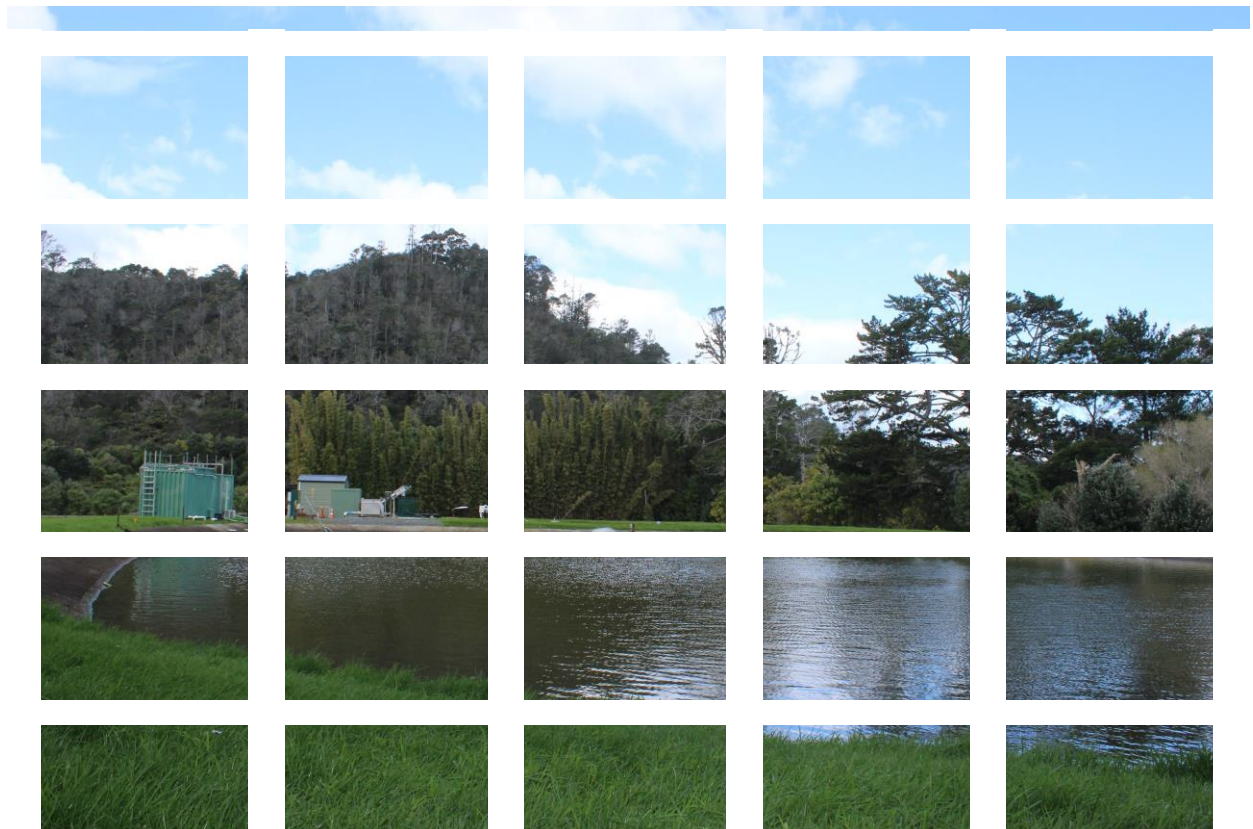




HAHEI WWTP CONTINGENCY PLAN December 2020



Hahei Wastewater Treatment Plant Monitoring Implementation Plan Resource Consent 135636.01.01

for:

Thames-Coromandel District Council

Client:
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1 Introduction

1.1 Purpose

The Hahei Wastewater Treatment Plant (WWTP) is owned by Thames Coromandel District Council (TCDC) and operated by Veolia Water. The plant takes all sewage flows from the Hahei town reticulation network and discharges to the adjacent Wigmore Stream. The discharge operates under Resource Consent 135636.01.01. The consent was granted in 2017 and expires on the 15th December 2030.

This wastewater monitoring plan has been compiled in compliance with Condition 17 of Resource Consent 135636:

*“All Samples Taken In Relation To Monitoring Under This Consent Shall Be Collected By A Suitably Qualified And Experienced Person(S) With Relevant Training In The Sampling And Transporting Of Water Quality Samples And In Accordance With The **Monitoring Implementation Plan** Titled “Wastewater Sampling At Hahei WWTP And Wigmore Stream” By United Water, Dated 1-04-2009 (Waikato Regional Council Document Number 1472702), Or Any Subsequent Update. This Plan Shall Detail Methods And Map Locations For How, When And Where Sampling Will Take Place. An Updated **Monitoring Implementation Plan** Shall Be Provided To The Waikato Regional Council Within Three Months Of Commencement Of This Consent, And At Two Yearly Intervals Thereafter, Or More Often If Any Method Or Location Changes. The Waikato Regional Council Shall Be Provided With An Updated Copy Of The Monitoring Implementation Plan Within One Month Of Any Update To The Plan”*

The aim of this monitoring plan is to provide details on the sampling required, the frequency of the required sampling, the locations of the sample points and the methods used. For further details on the periodic monitoring requirements of resource consent 135636, a copy is attached in Appendix A.

1.2 Location of Hahei WWTP

Hahei is a small beachside community located near Cooks Beach. The Hahei WWTP is located on Pa Road and treats the sewage of approximately 130 dwellings. The resident population of Hahei is approximately 250 people, however, as a holiday destination, the population during the peak summer period can be over 4,000. During the 2019-20 consent compliance reporting period, the maximum influent volume was 841 m³/day with an average of 112 m³/day. Wastewater is pumped to the Hahei WWTP from the Pa Road terminal pump station.

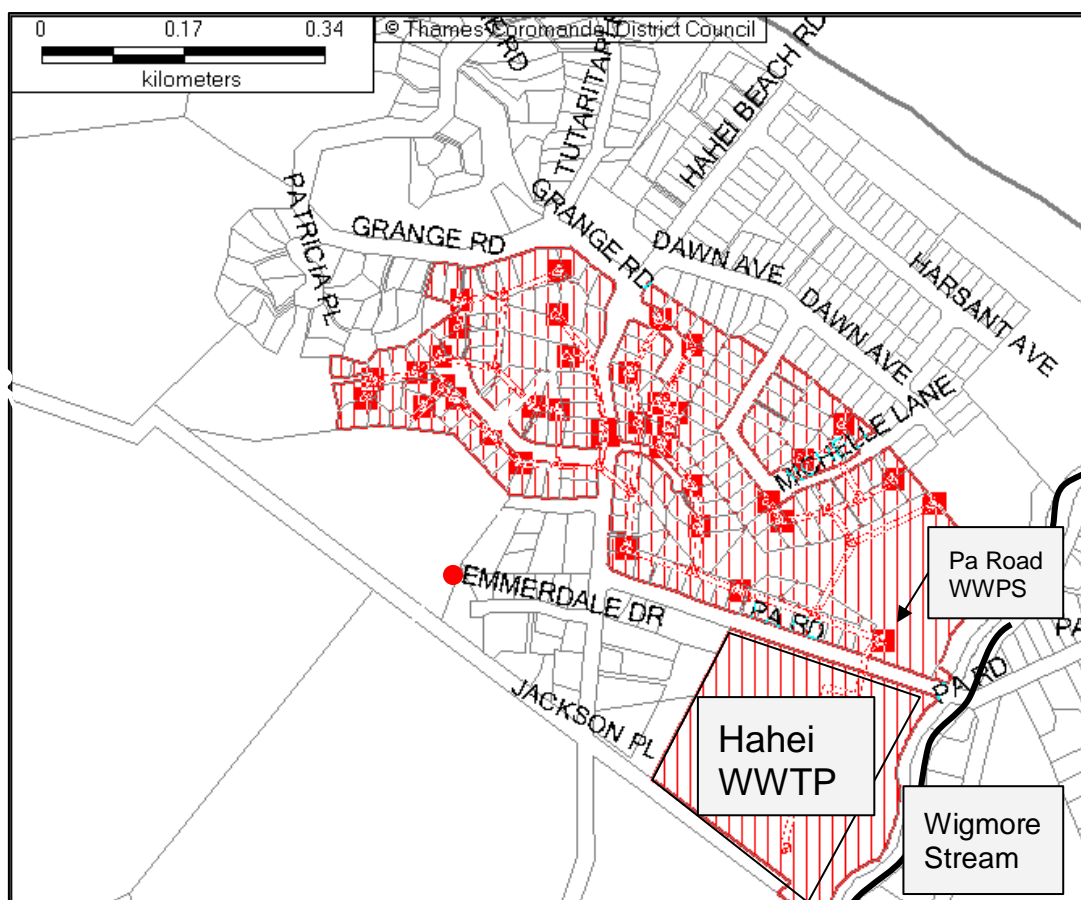


Figure 1: Map of Hahei Sewage Reticulation showing the location of the Hahei WWTP

2 Current Sampling and Monitoring Procedures

2.1 Sampling Methods

Sterilised sample bottles are provided by Watercare Labs a week in advance. Sample scheduling is managed by Veolia to ensure the samples are taken at the appropriate time; samples from the Wigmore Stream are required to be taken 1 hour either side of a local low tide. Effluent and MFU inlet laboratory samples are also taken at this time so the sample results are representative of a specific treatment “slug”.

The WWTP operator fills the sample bottles from the specific sample point and the sample bottles are kept in a chilly bin with ice to keep cool. Care is taken to ensure the sample bottles are filled without aerating the sample and the sample bottle is filled completely without air bubbles. Appendix B details the sample bottles used at Hahei WWTP and the specific parameters the laboratory analyses the samples in each bottle for.

2.2 Sample Points

The following sample points are used for water quality monitoring:

- **Hahei WWTP effluent** - Sample is taken from after the MFU system, where the plant discharges to the Wigmore Stream.
- **Wigmore Stream 50m upstream** - Sample point is upstream of the discharge on a straight section of the stream just before the site boundary. A stake marks the location of the sampling site.
- **Wigmore Stream Pa Road Bridge** - Sample point is just after the walkbridge across the Wigmore stream; the sample is taken from the downstream side of the bridge.
- **MFU inlet** - A sample is taken from the inlet pump feed station to monitor the MFU performance.

Appendix C shows photographs of the sample locations.

2.3 Laboratory Delivery Details – Analytical Procedures

Watercare Laboratories in Auckland undertakes all the sample analysis for Hahei WWTP. As required by Condition 18, sample analysis is conducted in accordance with the “Standard Methods for the examination of Water and Wastewater”. Watercare Laboratories is an IANZ accredited Laboratory for testing using approved standard methods. Bacterial samples are required to be tested within a specified timeframe to ensure the sample results are representative of the effluent. All attempts are made to organise the sampling, sample pick-ups and analysis to ensure the bacterial samples are tested within 24 hours of the samples being taken.

2.4 On-Site Testing

Alongside the laboratory testing, the Wigmore Stream samples, MFU inlet samples and treated effluent samples are tested for pH and conductivity on-site by the WWTP operator. Before testing, the portable pH and conductivity probes are calibrated against a known standard to ensure the results are accurate.

2.5 SCADA Monitoring

The Hahei WWTP is connected to TCDCs SCADA system which allows remote monitoring, alarms and data collection. Continuous data (1 minute time intervals) is available for the influent flows, effluent flows, pond DOs and retention pond level.

2.6 Response Procedures in the Event of Non-compliance

Condition 26 of consent 135636 requires the Waikato Regional Council (WRC) to be notified as soon as practicable or within 24 hours in the event of the following:

- Any discharge to the Wigmore Stream from a source that has bypassed any part of the treatment process,
- Any discharge to the redundant disposal beds and/or redundant storage pond.

Within 7 days of the above occurring, WRC requires a follow up report covering the extent of the discharge, possible causes, steps undertaken to mitigate the impact of the discharge and measures to ensure future compliance. Please note the storage pond mentioned above is no longer available for use.

While there are no direct requirements within consent 135636 to report non-compliances with the discharge limits within a specified timeframe to WRC, TCDC will be informed if the discharge limits listed in Condition 8 are exceeded. Table 1 lists the Hahei WWTP discharge consent limits below.

Table 1: Resource Consent Discharge Quality Limits

Parameter	90th percentile, <i>not more than one sample in each preceding 10 samples shall exceed:</i>	Running Average, <i>Over any consecutive 10 samples shall not exceed:</i>
(a) Suspended Solids	20	10
(b) Carbonaceous Biochemical Oxygen (g/m ³)	20	10
(c) Escherichia Coli (cfu/100ml)	20	10
(d) Total Ammoniacal Nitrogen (g/m ³)	15	10
(e) Total Kjeldahl Nitrogen (g/m ³)	20	15
(f) Total Phosphorus (g/m ³)	20	14

2.7 Contact Details

A master contact list for operations and maintenance staff is jointly maintained by the Veolia Operations Engineer and the Veolia Maintenance Coordinator.

3 Performance Monitoring

Alongside the monitoring and sampling required for the resource consent, monitoring should be performed and data recorded on the daily log field sheet every site visit to gauge the WWTPs performance. Data is recorded on:

- Weather conditions,
- Influent pH and DO, ammonia and conductivity,
- Aeration pond DO, pH and temperature,
- Retention pond DO, pH, ammonia and temperature,
- Effluent DO, pH, temperature and ammonia,
- Pond colours and any noticeable odours,
- Retention pond level, and
- MFU transmembrane pressures, inflow rates, backwash pressures and plant run hours.

Appendix D contains the Hahei WWTP field sheet.

Additional testing capacity is also available at the Whitianga WWTP where the on site colorimetry lab allows the WWTP operator to test for COD, ammonia, nitrate and phosphorus concentrations if required.

4 Monitoring Summary

Table 2: Summary of required and suggested sample parameters

Cond.	Parameter Monitored	Method	Frequency	Action	Reporting
11	Discharge Volume	Flow meter	Daily	Record daily discharge volume to the Wigmore Stream	Annual Report & Periodic Report
16	Peak Discharge Rate	Flow Meter	Daily	Record the maximum instantaneous discharge rate daily	Annual Report & Periodic Report
16	Average Discharge Rate	Flow Meter	Daily	Record the average daily discharge rate	Annual Report & Periodic Report
14	Wigmore Stream Flow	Flow recorder in stream	15 minute data	Record stream flow rate every 15 minutes	Linked to WRC by telemetry
15	Wigmore Stream Flow	Manual gauging	Yearly	Manual gauging of river flows during low flow events	Annual Report & Periodic Report
16	Rainfall	Manual	Daily	Record daily rainfall quantity at the WWTP	Annual Report & Periodic Report
16	<ul style="list-style-type: none"> Total Ammoniacal Nitrogen E.Coli Enterococci Conductivity pH Date and time sample taken Low tide time 	Laboratory Sample	<p>Weekly from the third week of December to the third week of February.</p> <p>Monthly the rest of the year</p>	<p>Samples from the:</p> <ul style="list-style-type: none"> MFU Inlet Effluent discharge Wigmore Stream 50m upstream Wigmore Stream downstream 	Annual Report & Periodic Report
16	<ul style="list-style-type: none"> cBOD₅ Nitrate Nitrogen Suspended Solids Total Kjeldahl Nitrogen Soluble Reactive Phosphorus Turbidity Date and time sample taken Low tide time 	Laboratory Sample	Monthly to coincide with above	<p>Samples from the:</p> <ul style="list-style-type: none"> MFU Inlet Effluent discharge Wigmore Stream 50m upstream Wigmore Stream downstream 	Annual Report & Periodic Report
16	<ul style="list-style-type: none"> Aquatic Macroinvertebrate assessment Habitat and aquatic plant assessment Sample date and time Low tide time 	Ecological Survey	Annually in January or February	Both sample sites in the Wigmore Stream; 50m upstream and downstream at the Pa Road Bridge	Ecological Report
16	Fish Populations	Ecological Survey	Every five years in January or February	Both sample sites in the Wigmore Stream; 50m upstream and downstream at the Pa Road Bridge	Ecological Report
Sugg.	Dissolved Oxygen	Manual	Every Site Visit	Monitor dissolved oxygen	Annual Report

				levels across the ponds	
Sugg.	pH	Manual	Every Site Visit	Monitor pH levels across the ponds	Annual Report
Sugg.	Temperature	Manual	Every Site Visit	Monitor temperature levels from across the ponds	Annual Report
Sugg.	Ammonia	On-site testing	Once per week	Monitor the ammonia concentration at the inlet, retention pond inlet and effluent	Annual Report
Sugg.	Retention Pond Level	Level sensor connected to SCADA	Continuously	Monitor the retention pond level continuously	N/A

Appendix A: Resource Consent

Appendix B: Sample Bottle Testing Parameters

Appendix B: Hahei WWTP Sample Points

Appendix C: Hahei WWTP Data Field Sheet