Porirua Wastewater Treatment Plant Annual Report 2024-2025

WGN200029 [36816]

Stantec

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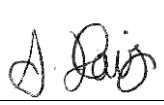
Prepared by		
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1 Introduction

The Porirua Wastewater Treatment Plant (WWTP) is located in Titahi Bay, Porirua. It serves the area from Northern Wellington to Pukerua Bay. The WWTP provides preliminary treatment (screening of incoming solids greater than 2mm), secondary treatment (removal of organic pollutants and separation of sludge from clear wastewater), and tertiary treatment (UV disinfection of micro-organisms). Final effluent is discharge to a coastal outfall located at Rukutane Point.

WGN980083 [1536] and [33805] expired on June 6, 2020, and new consents for both air and coastal discharges were applied for. Consents WGN200029 [36727] and [36816] were granted and became effective on 12 July 2023. The new consents authorise:

- The discharge of treated wastewater to the coastal marine area from the operation of the Porirua Wastewater Treatment Plant (WGN200229 [36816])
- The discharge of contaminants to air (odour) from the operation of the Porirua Wastewater Treatment Plant (WGN200229 [36727])

Condition 19 of (WGN200229 [36816]) requires an annual report to be produced. Wellington Water has engaged Stantec to produce the annual report for the 2024-2025 compliance year.

2 Water Quality Monitoring

Condition 5F(A): The Monitoring Plan shall set out how the monitoring required under conditions 4, 5J(c), 6 to 11, 12C, 12D, 14 to 16, and 28 to 29, and to ensure that compliance with condition 13 of this consent will be delivered.

Condition 5J(C): If the alternate WWTPWG is established in accordance with condition 5I then:

The consent holder shall prepare, implement and review a Monitoring Plan in accordance with conditions 5E and 5F, except that the requirement in condition 5F (b) shall be replaced with the following: i. The consent holder shall engage a suitably qualified coastal ecologist to conduct a visual survey of the quantity and size range of paua, kina and lobster along the six transects used in the Cawthron (2019) ecological survey. The survey shall be undertaken once before the third anniversary of the commencement of the consent and also be included within the scope of any ecological survey undertaken in accordance with condition 28.

Condition 11: All sampling techniques employed in respect of the conditions of this consent shall be acceptable to the Wellington Regional Council. All analyses undertaken in connection with this consent shall be performed by an International Accreditation New Zealand (IANZ) registered laboratory, or otherwise as specifically approved by the Wellington Regional Council.

A Monitoring Plan has been prepared to satisfy condition 5F(A), described above. This monitoring plan is available on the Porirua WWTP page on the Wellington Water website.[1] This plan sets out the

[1] The latest version of the Monitoring Plan is available here: Ver2_Monitoring Plan - Porirua Wastewater Treatment Plant (wellingtonwater.co.nz)

monitoring required of influent, effluent, and receiving waters. It includes details pertaining to condition 5J(c) to engage a suitably experienced coastal ecologist to conduct visual surveys of the coastal marine area (CMA). As of June 30th, 2025 this plan is not yet certified by GWRC.

The Kaitiaki Monitoring Programme is yet to be developed. The current monitoring plan is set to be updated with the details of the programme once it has been prepared. Wellington Water will provide an update to Greater Wellington Regional Council on the progress of the Kaitiaki Monitoring Program during monthly meetings.

3 Wastewater Treatment Plant Monitoring

This section summarises monitoring required at the WWTP as per the conditions listed under 5F(A). Each condition is assessed individually.

3.1 Condition 4

4: The consent holder shall continuously monitor and record the daily volume of the inflow to and effluent from the wastewater treatment plant. The records shall be supplied to the Manager in accordance with conditions 18 and 19, and on request of the Manager.

Daily influent and effluent flow were measured each day during the 2024-25 compliance year. This is an improvement of last year's monitoring which saw no effluent readings between January and April 2024 due to an electrical issue.

During the 2024-25 both inflow and effluent flow meters have experienced issues and readings were not always representative of the flow entering and leaving the plant. For reporting purposes, inflow has been calculated by adding the combination of daily flows from the Rukutane Point and Tangere Drive pump stations. Effluent flow data is a combination of the two flow metres located post-UV treatment in the Duron and TAK channels. At time of writing, there is a project underway to replace the effluent flow meter that is faulting.

Condition 3 stipulates the daily average and maximum flows allowed under this consent. As shown in Figure 3-1 the daily average flow for the 2024-25 compliance year was below the consented limit. No exceedances in total daily maximum flow occurred.

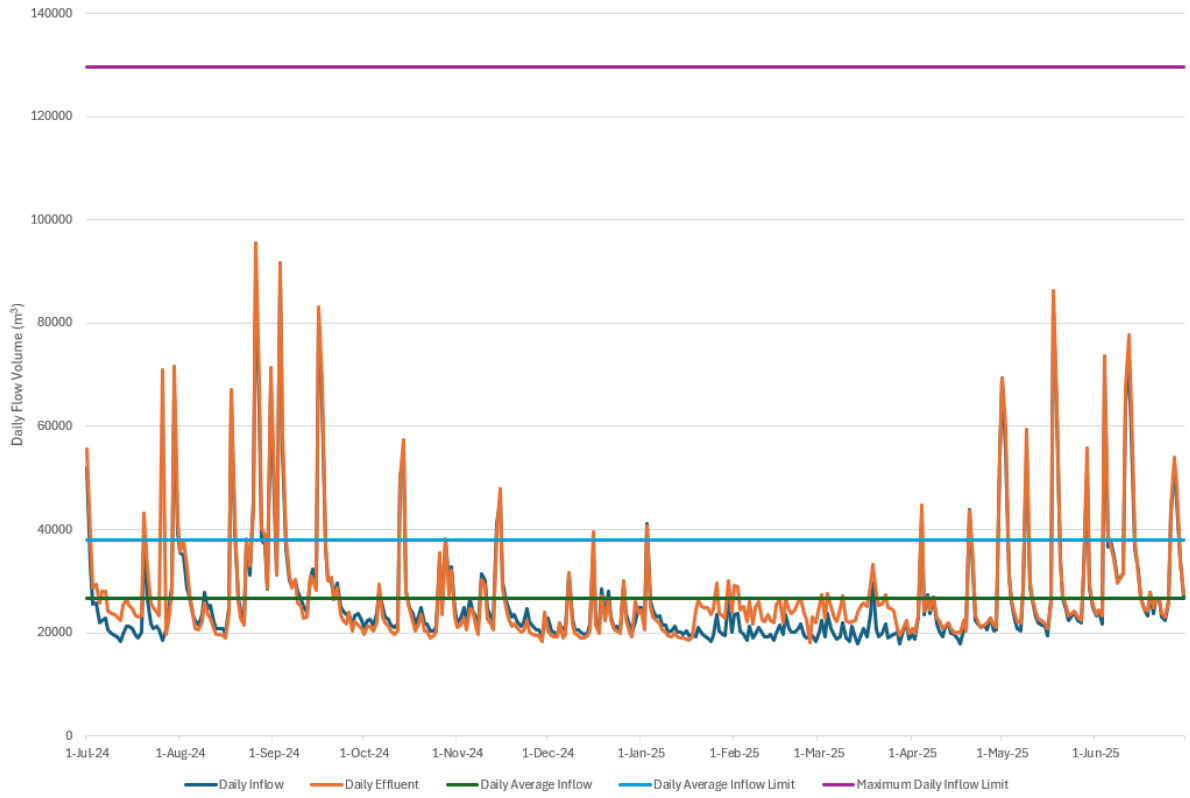

Figure 3-1: Total daily influent and effluent volumes

3.2 Condition 7

The consent holder shall each day, including weekends and public holidays, obtain a representative 24-hour flow-proportioned composite sample of the wastewater from the location identified in accordance with condition 6. This sample shall be analysed for total suspended solids and biochemical oxygen demand.

The results of the analysis required by Condition 7 are reported and assessed under Condition 12. On October 23, 2024, the sample for BOD and TSS was missed, resulting in a non-compliance with condition 7.

3.3 Condition 8

The consent holder shall each day, including weekends and public holidays, between the hours of 9am and 5pm, obtain a representative grab sample of the wastewater from the location identified in accordance with condition 6. Prior to certification of the enterococci trigger under condition 21B this sample shall be analysed for UV transmissivity, faecal coliforms and enterococci. Following certification of the enterococci trigger under condition 21B the sample shall be analysed for enterococci and UV transmissivity.

At the time of writing, an enterococci trigger had not been certified. This certification was due by August 1, 2024, according to condition 21B. However, due to the issues encountered in the operation of the UV system, the enterococci trigger is still yet to be determined. A technical expert

recommended that further testing is required, and data interrogation is needed before a trigger value can be established. Regional council has been informed regarding this status.

Wastewater samples for the 2024-25 compliance year have been analysed for UV transmissivity, faecal coliforms and enterococci.

Enterococci was sampled daily in compliance with Condition 8. This is an improvement from last year which saw a delay in aligning sampling requirements with the new resource consent conditions, resulting in daily enterococci data not being available until late August 2023. The delay in aligning sampling requirements last compliance year also saw sporadic UVT results until August. UVT was analysed daily during this compliance year, marking a large improvement in compliance.

Figure 3-2 and Figure 3-3 display daily faecal coliform, enterococci, and UVT% results for the 2024-25 compliance year.

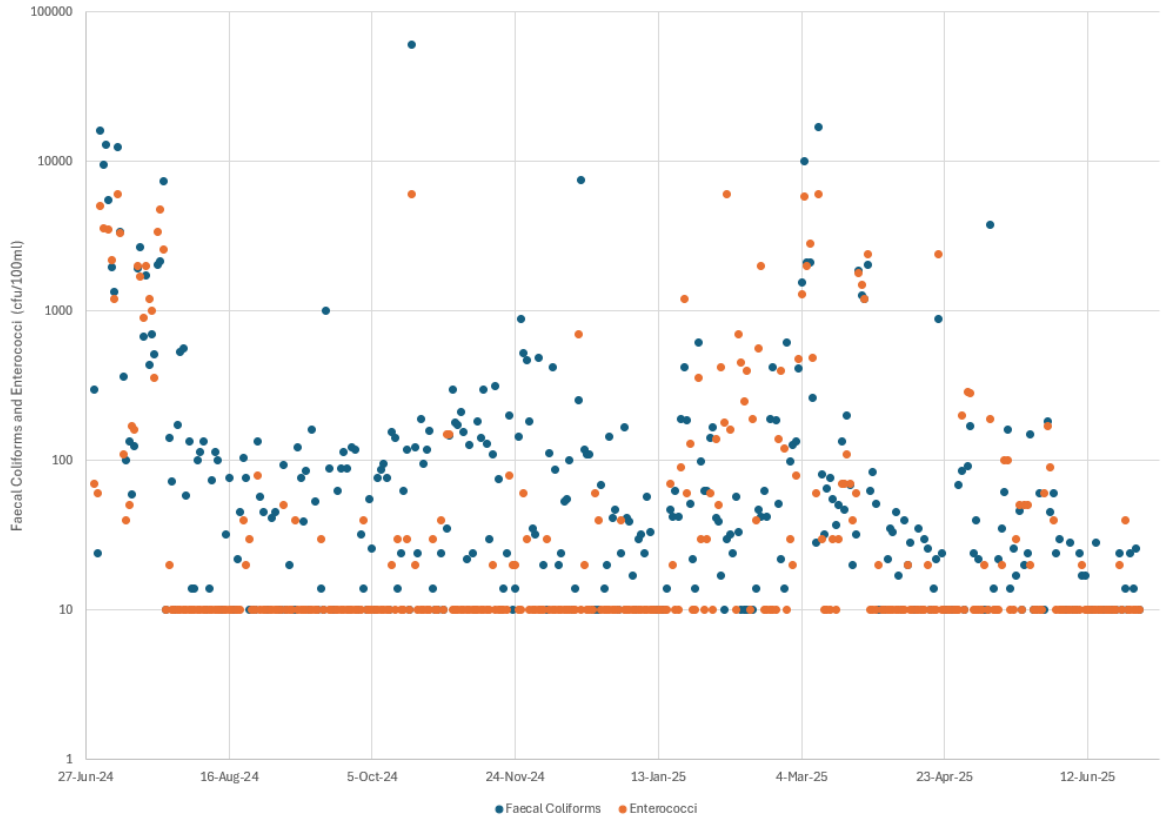

Figure 3-2: Daily faecal coliform and enterococci data on a log(10) scale

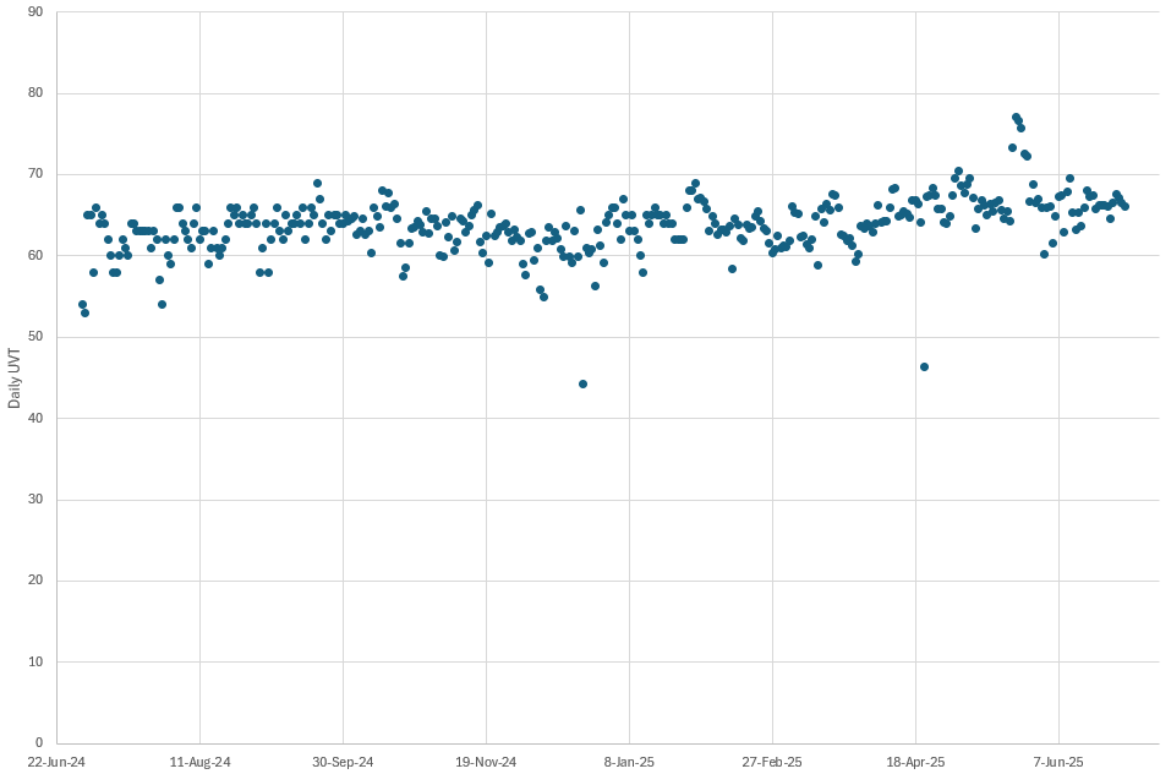

Figure 3-3: Daily UVT%

3.4 Condition 9

9.The consent holder shall on at least one occasion each month, on a normal working day, obtain a representative 24-hour flow-proportioned composite sample of the wastewater from the location identified in accordance with condition 6. This sample shall be collected on the same day as the representative receiving water samples are collected under condition 14. This sample shall be analysed for:
a) Nitrate Nitrogen
b) Nitrite Nitrogen
c) Dissolved Reactive Phosphorus
d) Total Nitrogen
e) Total Phosphorus
f) Total Arsenic
g) Total Cadmium
h) Total Chromium
i) Total Copper
j) Total Nickel
k) Total Lead
l) Total Zinc
m) Total Mercury
n) Phenol

Samples have been taken in accordance with Condition 9. The results are reported and assessed in Condition 12A.

3.5 Condition 9A

The consent holder shall on at least one occasion each week, on a normal working day, obtain a representative 24-hour flow-proportioned composite sample of the wastewater from the location identified in accordance with condition 6. This sample shall be analysed for Total Ammonia Nitrogen.

Weekly testing occurred consistently in the 2024-25 compliance period, just one test was missed, in October 2024. This is a non-compliance with this condition. Total Ammonia Nitrogen (TAN) concentrations began steadily increasing at the end of the last compliance year (June 2024), and remained high until April 2025.

Condition 33 stipulates that results should not exceed 6mg/L in more than 5 of 26 consecutive wastewater samples. Upon exceedance of this threshold, a monitoring and technology review and report is required to be submitted to the Manager within 9 months. Two investigation reports were prepared as a result of the elevated effluent ammonia concentrations. The full reports are available on the Porirua WWTP website[2].

The conclusion of the investigations was that the plant was not adequately achieving aerobic conditions in all the aerated sections of the oxidation ditch. Operational adjustments were recommended to rectify this. Since mid-April 2025 there has been a significant decrease in the effluent ammonia concentrations, and for the most part the effluent ammonia concentrations have returned to below the trigger value.

Two values reported for the 14th and 21st of May 2025 slightly exceeded the trigger value with concentrations of 6.23 g/m^3 and 6.68 g/m^3 respectively.

Veolia have indicated that the spike in the effluent ammonia reported in June 2025 is due to changes in the DO concentration in the system after maintenance of a process air pressure sensor used for the aeration system control. Over this period an effluent ammonia concentration of 10.6 g/m^3 and 7.74 g/m^3 was recorded on the 18th and 25th of June respectively.

These figures triggered a second investigation MTRR which will be delivered by 16 April 2026

The overall trend in the data suggests that the operational changes have been effective and the plant has begun to nitrify.

In addition to the incident reports, an Assessment of Environmental Effects (AEE) was prepared in January 2025. This AEE assessed the effects of the elevated TAN concentrations on the marine receiving environment. The overall level of adverse effect during the post June 2024 discharge was assessed as low for biota on intertidal rocky habitats, subtidal rocky habitats, and sandy sediments. The full AEE is available online.[3]

Results from weekly TAN monitoring are displayed in Figure 3-4.

[2] Incident reports: Porirua Wastewater Treatment Plant
[3] AEE: Ammonia-AEE_Jan-2025.pdf

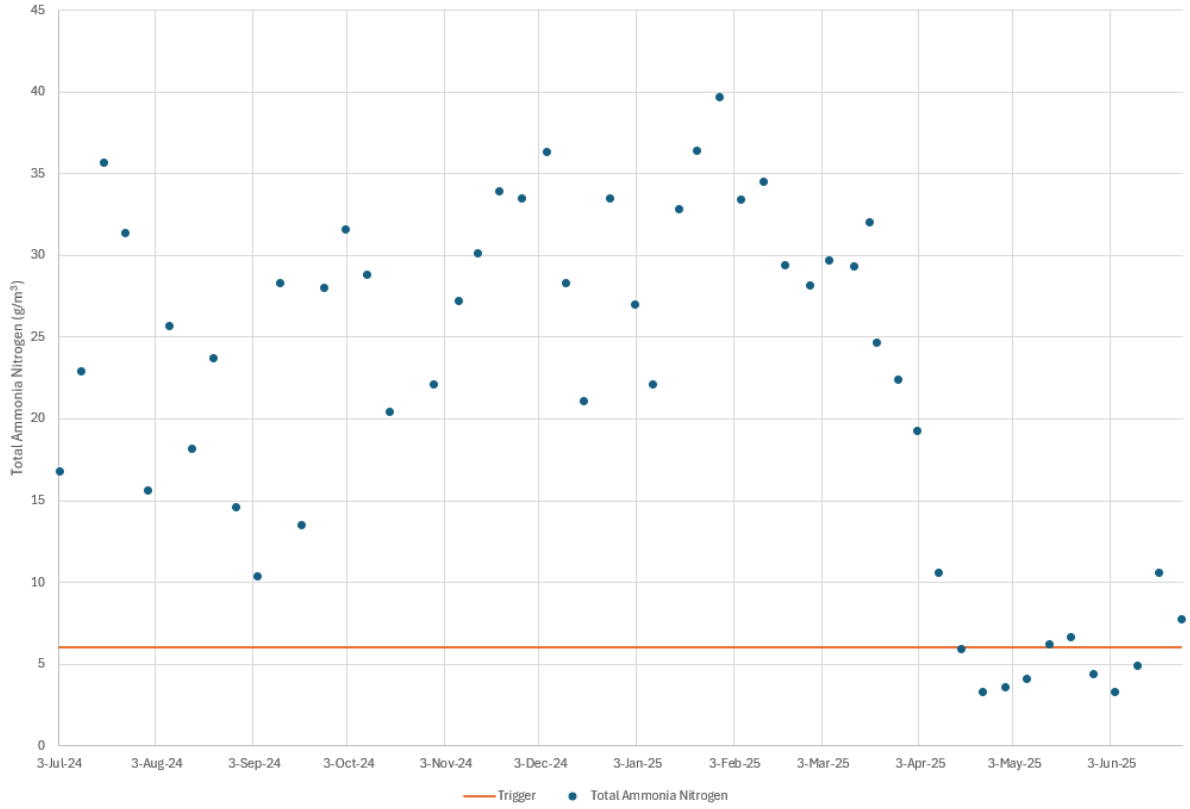

Figure 3-4: Weekly total ammonia nitrogen (g/m³)

3.6 Condition 10

The consent holder shall: a. At least once a calendar month between the hours of 9am and 5pm, obtain a representative grab sample of the influent to the wastewater treatment plant b. At least once a week between the hours of 9am and 5pm, obtain a representative grab sample of the wastewater from the location identified in accordance with condition 6. These samples shall be analysed for a suitable viral indicator, such as F-RNA bacteriophage. The requirement in this condition may be varied by certified updates to the Monitoring Plan under condition 10A.

Condition 10A states the requirement outlined above must be reviewed by June 30, 2024 to determine (among other things) whether the monitoring associated with the viral indicator should be continued, or be replaced by an alternative monitoring schedule. At time of writing, there is no evidence to suggest this review has been undertaken during the compliance year, and whether this data will be reported on in following years.

Table 3-1 displays results for the available data under condition 10 for the 2024-25 compliance year.

Table 3-1: Viral indicator analysis summary results

July 2024				August 2024				September 2024			
Influent Monthly grab		Effluent Weekly grab		Influent Monthly grab		Effluent Weekly grab		Influent Monthly grab		Effluent Weekly grab	
F-RNA Bacteriophage		F-RNA Bacteriophage		F-RNA Bacteriophage		F-RNA Bacteriophage		F-RNA Bacteriophage		F-RNA Bacteriophage	
Date	PFU/l	Date	PFU/l	Date	PFU/l	Date	PFU/l	Date	PFU/l	Date	PFU/l
23/07/2024	34000000	02/07/2024	590	27/08/2024	130000	06/08/2024	10	24/09/2024	85000	03/09/2024	49
		09/07/2024	50			13/08/2024	10			10/09/2024	20
		16/07/2024	1900			20/08/2024	120			17/09/2024	10
		23/07/2024	15000			27/08/2024	120			17/09/2024	10
		30/07/2024	10								
October 2024				**November 2024**				**December 2024**			
Influent Monthly grab		Effluent Weekly grab		Influent Monthly grab		Effluent Weekly grab		Influent Monthly grab		Effluent Weekly grab	
F-RNA Bacteriophage		F-RNA Bacteriophage		F-RNA Bacteriophage		F-RNA Bacteriophage		F-RNA Bacteriophage		F-RNA Bacteriophage	
Date	PFU/l	Date	PFU/l	Date	PFU/l	Date	PFU/l	Date	PFU/l	Date	PFU/l
15/10/2024	24000	02/10/2024	8700	19/11/24	45000	05/11/2024	69	10/12/2024	110000	03/12/2024	98
		09/10/2024	10			12/11/2024	88			10/12/2024	18000
		16/10/2024	3100			19/11/2024	450			17/12/2024	910
		30/10/2024	59			26/11/2024	130			27/12/2024	10
January 2025				**February 2025**				**March 2025**			
Influent Monthly grab		Effluent Weekly grab		Influent Monthly grab		Effluent Weekly grab		Influent Monthly grab		Effluent Weekly grab	
F-RNA Bacteriophage		F-RNA Bacteriophage		F-RNA Bacteriophage		F-RNA Bacteriophage		F-RNA Bacteriophage		F-RNA Bacteriophage	
Date	PFU/l	Date	PFU/l	Date	PFU/l	Date	PFU/l	Date	PFU/l	Date	PFU/l
21/01/2025	300000	03/01/2025	20	25/02/2025	1200000	25/02/2025	110	18/03/2025	500000	04/03/2025	390
		07/01/2025	<10			11/02/2025	69			11/03/2025	210
		14/01/2025	50			18/02/2025	4000			18/03/2025	<10
		21/01/2025	530			25/02/2025	110			25/03/2025	640
April 2025				**May 2025**				**June 2025**			
Influent Monthly grab		Effluent Weekly grab		Influent Monthly grab		Effluent Weekly grab		Influent Monthly grab		Effluent Weekly grab	
F-RNA Bacteriophage		F-RNA Bacteriophage		F-RNA Bacteriophage		F-RNA Bacteriophage		F-RNA Bacteriophage		F-RNA Bacteriophage	
Date	PFU/l	Date	PFU/l	Date	PFU/l	Date	PFU/l	Date	PFU/l	Date	PFU/l
15/04/2025	600000	01/04/2025	190	28/05/2025	340000	06/05/2025	<10	26/06/2025	340000	03/06/2025	39
		08/04/2025	59			13/05/2025	110			10/06/2025	49
		15/04/2025	<10			20/05/2025	59			17/06/2025	<10
		22/04/2025	10			27/05/2025	<10			24/06/2025	39
		29/04/2025	110								

3.7 Condition 12

The quality of the wastewater sampled in accordance with condition 7 of this consent shall not exceed the following limits: a: Suspended solids – The geometric mean of 90 consecutive daily suspended solid values shall not exceed 30 g/m^3 and no more than 10% of 90 consecutive daily values shall exceed 75 g/m^3 b: Biochemical oxygen demand – The geometric mean of 90 consecutive daily biological oxygen demand values shall not exceed 30 g/m^3 and no more than 10% of 90 consecutive daily values shall exceed 75 g/m^3.

Neither the BOD geometric mean nor the 90th percentile limits were exceeded during the 2024-25 compliance year. Figure 3-5 displays these results.

The TSS geometric mean and 90th percentile limits were not exceeded during the 2024-25 compliance year. The 90th percentile values were marginally higher than in the previous compliance year, but still well below consented limits.

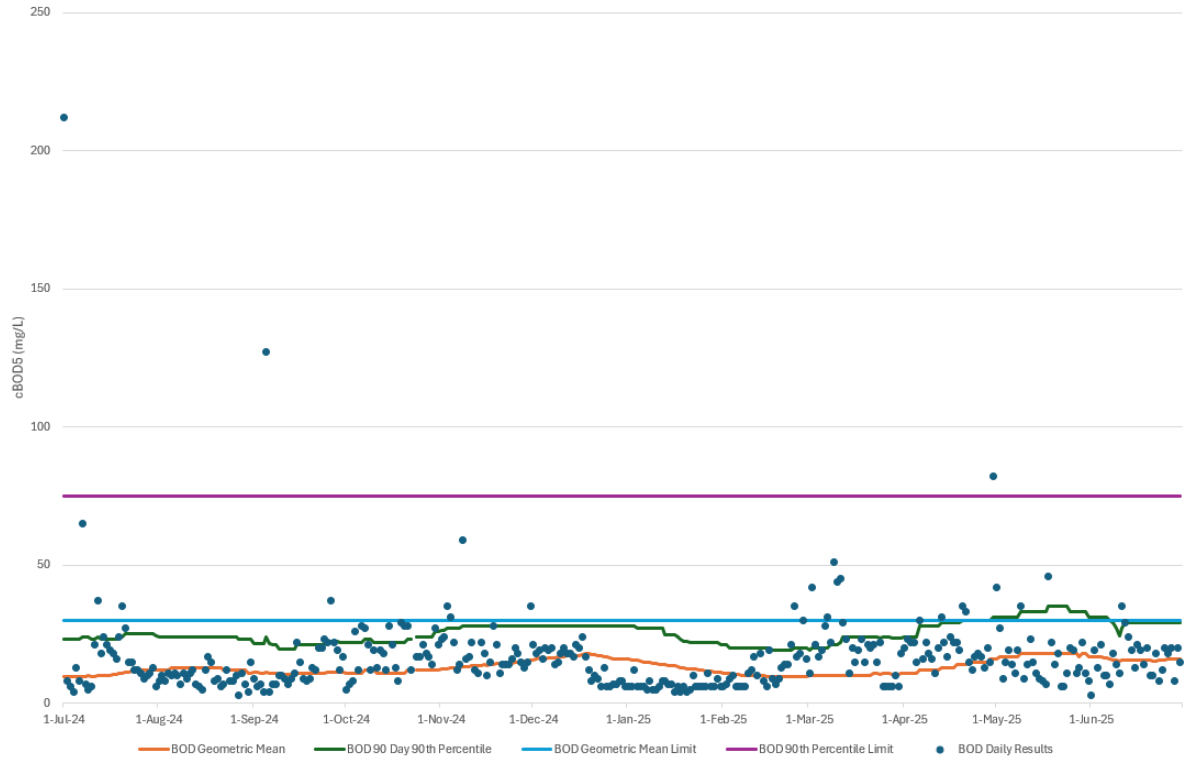

Figure 3-5: Daily treated wastewater cBOD5 (mg/L), 90-day geometric means and 90-day 90th percentiles

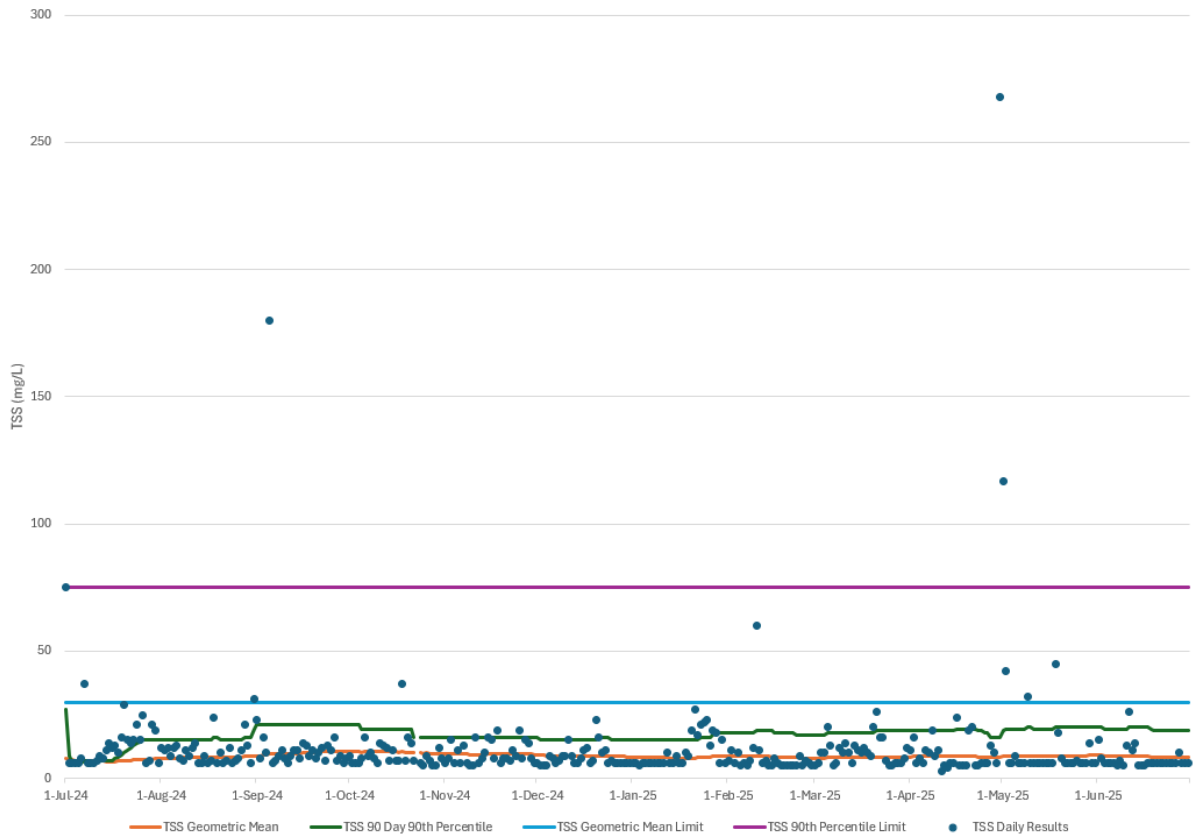

Figure 3-6: Daily treated wastewater TSS (mg/L), 90-day geometric mean and 90-day 90th percentile

3.8 Condition 12A

Concentrations of metals and other compounds in the sample required under condition 9 shall not exceed: Metals/metalloids and phenols a. Total Arsenic 0.023 g/m^3 b. Total Cadmium 0.055 g/m^3 c. Total Chromium 0.044 g/m^3 d. Total Copper 0.013 g/m^3 e. Total Nickel 0.07 g/m^3 f. Total Lead 0.044 g/m^3 g. Total Zinc 0.08 g/m^3 h. Total Mercury 0.001 g/m^3 i. Phenol 2.7 g/m^3

No compounds exceeded consented limits. The Australia and New Zealand Guidelines (2018) for marine have been used for comparison[4]. Wastewater concentrations of copper, zinc, and mercury are marginally higher than the ANZG marine water guidelines in several samples, however after an initial 10-fold mixing with receiving waters the guidelines would be comfortably achieved. These results are

[4] Australia and New Zealand Guidelines for Freshwater and Marine Water Quality (2018); these relate to marine water quality rather than discharge quality

generally consistent with previous years. Table 3-2 summarises metal concentrations for the 2024-25 compliance year.

Table 3-2:Wastewater metal concentration summary 2024-25 compliance year (g/m³)

Compound g/m³	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	June -25	ANZG (2018) DGVs
Total Arsenic	0.002	0.004	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
Total Cadmium	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Total Chromium	0.002	0.002	0.002	0.002	0.001	0.002	0.002	0.001	0.002	0.005	0.002	0.002	0.0044
Total Copper	0.006	0.004	0.002	0.002	0.002	0.002	0.006	0.002	0.003	0.003	0.003	0.004	0.0013
Total Nickel	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.003	0.001	0.001	0.007
Total Lead	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0044
Total Zinc	0.023	0.016	0.005	0.016	0.016	0.017	0.024	0.017	0.017	0.017	0.021	0.037	0.015
Total Mercury	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0001
Phenol	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.010	0.010	0.010	0.010	0.010	
Nitrate Nitrogen	0.02	0.03	0.33	1.1	1.71	1.65	0.54	1.16	1.44	1.08	1.380	1.790	
Nitrite Nitrogen	0.02	0.03	0.33	0.13	0.21	0.15	0.02	1.55	0.21	0.18	0.260	0.160	
Dissolved Reactive Phosphorus				0.134	1.53	1.04	2.73	0.010	2.88	3.12	1.530	2.870	
Total Nitrogen				16.8	33.5	32.7	42.7	35.50	36.70	9.37	5.78	11.70	
Total Phosphorus				0.7	2.17	1.38	2.57	2.52	4.35	2.95	1.27	2.95	

3.9 Condition 12B

> All banks of UV lamps within each UV disinfection system shall be operated at greater than 98% power output for at least 95% of the time of operation of the relevant disinfection system each calendar month. Percentage power output to each UV system shall be calculated on the basis of the average over each discrete 15 minute period as measured at the Programme Logic Control output.

The WWTP operate with two UV disinfection systems, the original TAK UV systems, and a newer Duron UV system. The Duron system operates continuously, unless there are maintenance or repairs. The TAK system only operates during high wastewater flows or while the Duron system is undergoing maintenance or repair. There is recognition that while maintenance, repairs, and replacement are occurring there will be unavoidable instances where this consent condition is not achieved.

Figure 3-7 displays the monthly average power output for the 2024-25 compliance year. Power output never fell below 99%, and compliance was comfortably achieved.

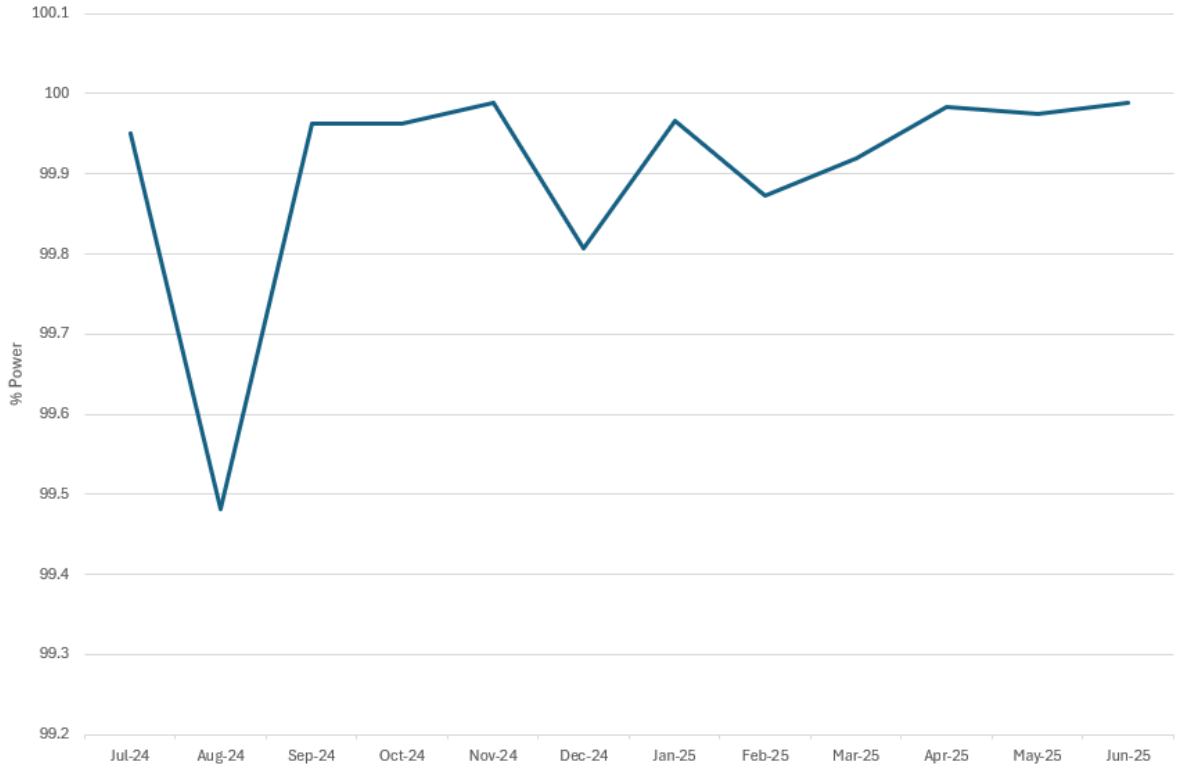

Figure 3-7: Average power output per month

3.10 Condition 12C

The consent holder shall maintain a UV Transmissivity monitoring probe in the Duron UV system. The probe shall be linked to the treatment plant's SCADA system, with records of the hourly average UV transmissivity kept by the consent holder based on values observed at 5-minute intervals.

UVT was monitored in accordance with condition 12C. Figure 3-7 displays this data in comparison with the 45% consent limit. Investigations into the drop in UVT (summarised in Section 3.11 below) generally found that ongoing issues with the UVT sensor were responsible for low UVT readings. Issues included algal build up and the sensor being out of calibration. Grab samples taken in accordance with Condition 8 typically returned UVT results higher than 50%, within the consented limit. These results were consistent throughout the 2024-25 compliance year. While issues with the sensor persist, the grab samples provide a representative UVT result.

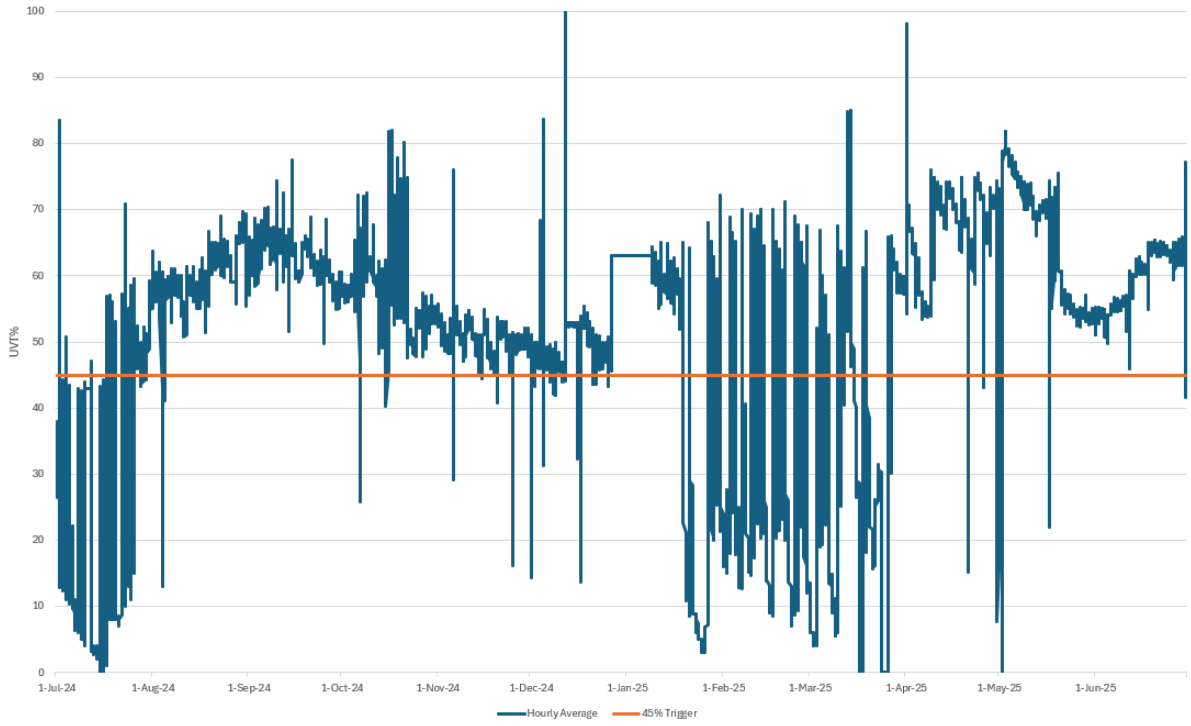

Figure 3-8: Hourly UVT average

3.11 Condition 12D

If the hourly average UV transmissivity recorded in accordance with 12C reduces below 45% then the consent holder shall:
a. Notify the Manager as soon as practicable; and
b. Initiate an investigation that meets the following requirements.

The investigation shall:
i. Be undertaken by a suitably qualified and experienced professional.
ii. Consider the results of the suspended solids monitoring, UV transmissivity from the daily grab samples, and other relevant plant performance measurements routinely taken by the consent holder.
iii. Assess the likely cause of the UV transmissivity reducing below 45%.
iv. If considered necessary, recommend further investigations, improvements, operational actions (including changes to the OMCP) or upgrades to reduce the risk of similar UV transmissivity records occurring in the future.
v. Include an implementation programme for the recommendations, if any, set out in accordance with (iv).
vi. Within 10 working days of the hourly average UV transmissivity falling below 45%, the consent holder shall inform the Manager of the outcomes of the investigation and which of the recommendations made in accordance with (iv) and (v) above it proposes to implement or has already implemented.

The UVT data presented above shows significant variability in the recorded average hourly UVT. The recorded UVT dropped below the limit of 45% for several periods prompting investigations into the UV

system. Notification from the plant operator has not been consistent in every instance. Incident reports for some of these events are available on the Porirua WWTP website[5].

The Duron UV Channel effluent penstock encountered issues at the beginning of July 2024, like those seen in the 2023-24 period. These reliability issues meant the TAK UV system was switched to the duty system during unmanned nighttime hours, as it had been previously. The lack of flow to the Duron system during these hours means the online UVT readings from the probe are not representative of the actual UVT. In addition to the Penstock issues, the UVT sensor located in the Duron Channel was calibrated mid-July after it was discovered the instrument had not been scaled correctly, also resulting in unrepresentative and low UVT results. These issues were resolved at the end of July 2024 resulting in a noticeable increase in the recorded UVT, aside from a brief minor sensor fault again in early August.

There were several brief drops in UVT between October and December which were mostly attributed to algae on the UVT sensor giving unrepresentative low UVT readings. The UVT sensor demonstrates high sensitivity, prompting several operational improvements including enhanced cleaning frequency, implementation of self-cleaning sensor technology, evaluation of various cleaning methodologies, and verification protocols using field testing kits. These modifications should result in improved UVT performance in the forthcoming year.

On several occasions during the reporting period the Duron UV system was taken offline to be cleaned, and the TAK system was switched on whilst the cleaning took place. On December 2nd, 2024, work was carried out to install electrical connections as part of the Backup Power Generator project. The Duron system was taken offline during these works, and the TAK system was switched to duty. There was a short, unplanned undisinfected discharge during this work, the incident report can be found on the Porirua WWTP website.

The Duron UV Channel effluent penstock experienced another fault in January 2025 with the required replacement components not being delivered until March. During this period the plant reverted to operating the TAK UV as the duty system during unmanned hours. The components were fitted late March enabling the Duron to be returned as the duty system full time.

In both April and May high flows to the plant due to heavy rainfall resulted in two solids carryover events. Incident reports for both events are available on the Porirua WWTP website. The underlying cause of these incidents was the limitation of the current solids processing system at the WWTP. With the current system, solids removal from the WWTP system is limited by:

- The poor thickener solids capture and thickening performance.
- Lack of redundancy for both the thickening and dewatering equipment.
- Insufficient sludge cake storage which limits available dewatering hours.
- Limited ability of Spicer Landfill to accept the required quantities of dewatered sludge.

As a result of these issues, if the WWTP is operating at a high MLSS concentration, it reduces resilience to changes in process conditions, such as increased influent flows observed in April and

[5] Incident reports: Porirua Wastewater Treatment Plant

May 2025. This issue is supported by the higher effluent suspended solids concentrations observed over this period.

Wellington Water is aware of these limitations and is undertaking a solids handling upgrade at the plant to address these issues. Based on the current programme the first stage of the upgrade is due to be commissioned in mid-2026.

Greater Wellington Regional Council issued Please Explain letters to Wellington Water and the plant operator for both the carryover events and responses were provided within the required timeframe.

A summary of these instances and the resulting investigations in accordance with Condition 12D are presented in Table 3-3 below.

Table 3-3: Porirua WWTP 2024-25 Low UTV Incident Summary

Date	Incident Summary
1 July – 30 July 2024	Duron UVT instrument offline (Duron unit running on business hours only).
4 August 2024	UVT sensor fault
5 August 2024	UVT sensor fault
7 October 2024	UVT sensor fault
15 October 2024	UVT sensor fault
6 November 2024	Duron UV System offline for clean – TAK duty
17 November 2024	UVT sensor fault (algae fouling)
20 November 2024	UVT sensor fault (algae fouling)
25 November 2024	UVT sensor fault (algae fouling)
2 December 2024	Backup power installation investigations UV turned off – TAK duty
5 December 2024	Duron UV System offline for cleaning – TAK duty
9 December 2024	UVT sensor fault (algae fouling)
10 December 2024	UVT sensor fault (algae fouling)
16 December 2024	UVT sensor fault (algae fouling)
17 December 2024	UVT sensor fault (algae fouling)
22 December 2024	UVT sensor fault (algae fouling)
26 December 2024	Duron UV System offline for cleaning – TAK duty
19 January – 27 March 2025	Duron UVT instrument offline (Duron unit running on business hours only).
21 April 2025	Solids carryover
26 April 2025	Duron UV System offline for cleaning – TAK duty
30 April – 2 May 2025	Solids carryover
17 May 2025	UVT sensor fault
30 June 2025	UVT sensor fault (algae fouling)

3.12 Condition 35A

If:
a. Prior to certification of the enterococci trigger under condition 21B, monitoring undertaken in accordance with condition 8 identifies that the concentration of faecal coliforms in the treated wastewater has exceeded 2,000 cfu per 100 millilitres on 2 or more consecutive days; or
b. Following certification of the enterococci trigger under condition 21B, monitoring undertaken in accordance with condition 8 identifies that the enterococci concentration in the treated wastewater has exceeded the enterococci trigger value set in accordance with condition 21B on 2 or more consecutive days, then the consent holder shall:
i. Notify the Manager as soon as practicable after receipt of results showing that the faecal coliforms or enterococci trigger has been exceeded for 2 consecutive days and
ii; Initiate an investigation that meets the following requirements.
The investigation shall:
c. Be undertaken by a suitably qualified and experienced professional.
d. Consider the results of the UV transmissivity monitoring undertaken in accordance with condition 8.
e. Assess the likely cause of the exceedance of the faecal coliforms or enterococci trigger value.
f. If considered necessary, recommend further investigations, improvements, operational actions or upgrades to reduce the risk of similar exceedances of the trigger value occurring in the future.
g. Include an implementation programme for the recommendations, if any, set out in accordance with (f). Within 1 calendar month of the receipt of results showing that the faecal coliforms or enterococci trigger has been exceeded for 2 consecutive days, the consent holder shall inform the Manager of the outcomes of the investigation and which of the recommendations made in accordance with (f) and (g) above it proposes to implement.

Figure 3-8 summarises faecal coliform monitoring between July 2024 and June 2025. The UV disinfection performance has been assessed against a faecal coliform limit of 2,000 cfu /100mL in two or more consecutive samples in accordance with Condition 35A. This condition was triggered on three occasions in July 2024, and once in March 2025. Instances where this limit has been exceeded and the resulting investigations are summarised in Table 3-4 below. The full incident reports can be found on the Porirua WWTP website[6].

Table 3-4: Faecal coliform limit exceedance incident summary

Date	Incident Summary
2 July – 5 July 2024 8 July – 9 July 2024 22 July – 24 July 2024	The following was identified as the cause of the faecal coliform non-compliance. • At the time of the non-compliance the effluent penstock of the Duron UV system had failed. As a result, the TAK UV system was being used. This system is known to have a lower disinfection efficiency. • Operational data suggests that the pre-UV faecal coliform count was elevated in July, resulting in a higher load to the UV system. • Higher effluent suspended solids were recorded during the non-compliance event between the 22nd and 24th of July. Note the effluent suspended solids were still within the consented limits.

[6] Incident reports: Porirua Wastewater Treatment Plant

Date	Incident Summary
	• Corrective actions were identified and implemented including increasing the frequency of lamp cleaning of the TAK system while this is used as the duty UV.
5 March – 7 March 2025	• Issues with the Duron UV led to the TAK UV being used as the duty system at the time of the event. The TAK UV is known to have a lower removal efficiency. • Higher flows in the days prior to the event led to higher effluent suspended solids. Note the effluent suspended solids were still within the consented limits. • Corrective actions included refurbishment of the TAK UV system.

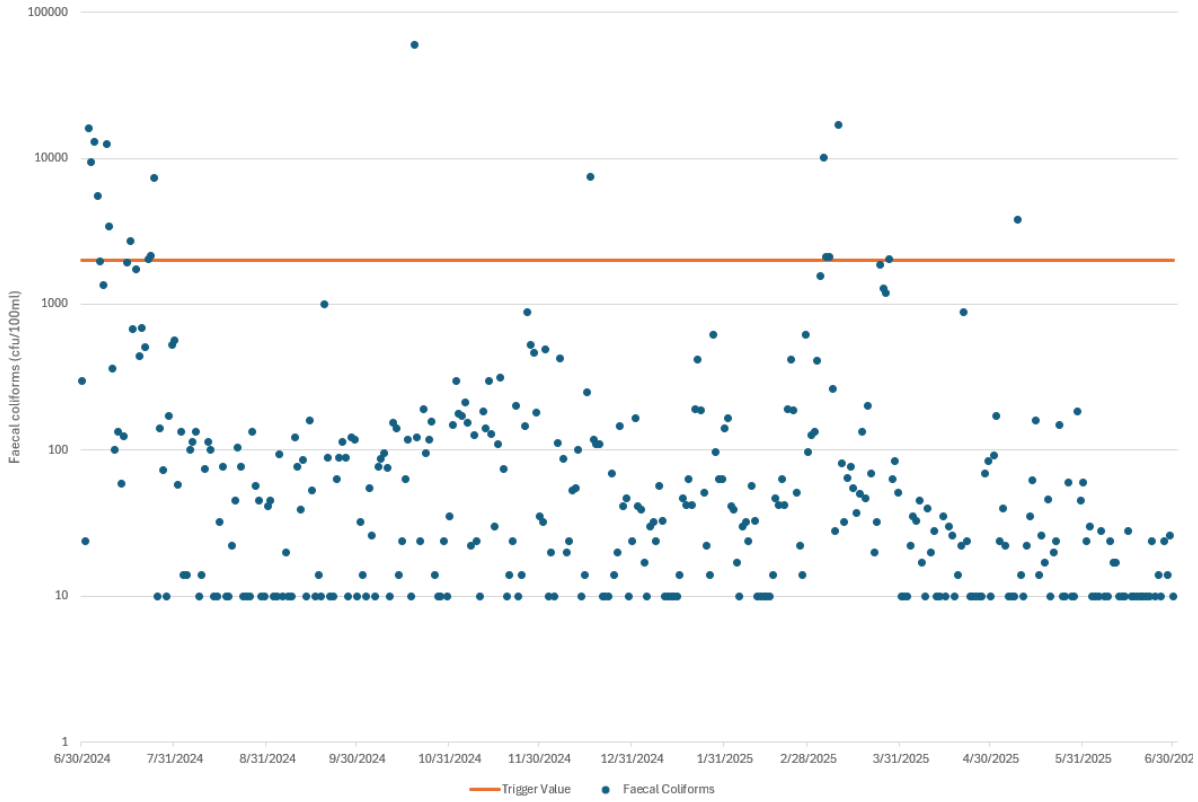

Figure 3-9: Summary of daily faecal coliform results (cfu/100ml) on a log(10) scale

4 Receiving Environment

This section summarises the monitoring completed in the receiving environment.

4.1 Condition 14 and 15

Condition 14: The consent holder shall collect representative receiving water samples from approximately 150 mm below the surface of water that is at least 500mm deep, once each calendar month at the following locations:

a. At or about 140 metres generally east of the outfall.
b. At or about 200 metres generally southwest of the outfall.
c. Titahi Bay Beach generally at Toms Road.
d. A control site, at a location to the satisfaction of the Manager.

Coordinates for all sampling sites shall also be recorded using a handheld GPS and provided in annual monitoring reports required under condition 19.

For each water sample collected under this condition, the consent holder shall record the site name, date, time, weather, wind, tidal conditions, pH, salinity, dissolved oxygen and water temperature at each sampling location.

Condition 15: The samples collected from sites (a) to (d) in condition 14 shall be analysed for enterococci. In addition, the samples collected from sites (a), (b) and (d) shall be analysed for total ammonia nitrogen, nitrate nitrogen, nitrite nitrogen, dissolved reactive phosphorus, total nitrogen and total phosphorous.

Sampling occurred consistently in accordance with condition 14 during this compliance year. Results for this monitoring are summarized below in Tables 4-1 to 4-4. This is an improvement from last year's compliance period, where the transition between consent conditions resulted in non-compliance with this consent condition.

Enterococci cells coloured red exceed acceptable national guidelines values of 280 cfu/100ml. Instance of exceedance were rare and are unlikely to be a result of the discharge. August 27, 2024 saw exceedances at 140m eastwards, Titahi Bay, and the control site. It is unlikely the treated wastewater discharge was directly responsible for the elevated enterococci results on this occasion. GWRC rainfall data shows the was a period of high rainfall in the day preceding the sampling[7], and it likely the elevated enterococci results derived from other sources of contamination in the wider catchment.

TAN was elevated on several occasions 200 metres generally southwest of the outfall. This elevation never exceeded ANZG 2018 trigger values for 95% species protection of 1.32g/m^3. Mass balance predictions in the January 2025 AEE suggested TAN could exceed this trigger value and reach concentrations as high as 2.82-3.90g/m^3. This was a conservative estimate of the theoretical concentration and did not account for the nitrification process when ammonia is converted to nitrites and nitrates. Adverse effects to the receiving environment were predicted to be low. The monthly monitoring results detailed below confirm that TAN concentrations have remained below this prediction.

[7] Environmental Data Dashboard | Greater Wellington Regional Council — GWRC | Te Pane Matua Taiao

Table 4-1: 140m generally eastwards of the outfall monthly shoreline sampling results

Date	Total Ammonia Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Reactive Phosphorus	Total Nitrogen	Total Phosphorus	Enterococci	pH	Salinity	Dissolved Oxygen	Temp.
dd/mm/yyyy	g/m^3	g/m^3	g/m^3	g/m^3	g/m^3	g/m^3	cfu/100mL	-	g/m^3	g/m^3	˚C
29/07/2024	0.02	0.01	0.01	0.011	0.1	0.05	10	8.11	34	11.56	13.1
27/08/2024	0.32	0.01	0.01	0.011	0.10	0.060	300	8.11	2	11.56	13.1
25/09/2024	0.02	0.01	0.01	0.010	0.01	0.025	10	8.12	33	12.47	14.2
17/10/2024	<0.01	<0.1	<0.1	0.009	0.473	<0.05	<10	8.17	33	11.59	13.6
26/11/2024	0.592	<0.1	<0.1	<0.002	0.592	<0.005	10	8.08	33	10.59	18.2
16/12/2024	0.09	<0.1	<0.1	<0.002	0.24	<0.05	70	8.12	35	9.82	18.8
28/01/2025	0.30	<0.01	<0.1	0.007	0.178	0.049	<10	8.23	33	10.3	15.5
27/02/2025	0.44	<0.01	0.52	<0.002	0.264	0.005	<10	8.09	34	8.77	18.7
24/03/2025	0.02	<0.01	<0.01	0.008	0.18	0.047	<10	8.14	36	9.97	17.7
15/04/2025	0.34	<0.1	<0.1	<0.002	0.166	0.022	<10	8.04	35	9.05	17.1
23/05/2025	0.32	<0.1	<0.1	0.007	0.191	<0.01	<10	8.5	32	12.72	15.7
27/06/2025	0.38	<0.1	<0.1	0.006	0.239	<0.05	20	8.25	-	9.78	14.5

Table 4-2: 200m generally south-westwards of the outfall monthly shoreline sampling results

Date	Total Ammonia Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Reactive Phosphorus	Total Nitrogen	Total Phosphorus	Enterococci	pH	Salinity	Dissolved Oxygen	Temp.
dd/mm/yyyy	g/m^3	g/m^3	g/m^3	g/m^3	g/m^3	g/m^3	cfu/100mL	-	g/m^3	g/m^3	˚C
29/07/2024	0.26	0.01	0.01	0.023	0.1	0.122	10	8.21	33	11.7	10
27/08/2024	0.28	0.01	0.01	0.029	0.05	0.093	80	8.21	36	11.7	80
25/09/2024	0.18	0.01	0.01	0.022	0.1	0.025	10	8.08	33	12.78	10
17/10/2024	0.6	<0.1	<0.1	0.021	0.493	<0.05	<10	8.12	35	11.45	13.7
26/11/2024	0.539	<0.1	<0.1	0.026	0.539	0.046	30	8.19	34	10.35	17.1
16/12/2024	1.09	<0.1	<0.1	0.05	1.3	0.061	<10	8.07	34	9.65	18.5
28/01/2025	0.34	<0.01	<0.1	0.01	0.195	<0.025	<10	8.12	34	9.82	16.8
27/02/2025	1.16	<0.01	0.37	0.037	1.8	0.068	<10	8.17	33	8.39	19.9
24/03/2025	0.05	<0.01	<0.01	0.006	0.289	0.049	40	8.11	36	8.43	17.9
15/04/2025	0.39	<0.1	<0.1	0.016	0.316	0.079	<10	8.04	35	9.05	17.1
23/05/2025	0.39	<0.1	<0.1	0.017	0.264	0.035	60	8.43	39	11.58	15.8
27/06/2025	0.39	<0.1	<0.1	0.008	0.335	<0.05	30	8.31	-	9.77	14.5

Table 4-3: Shoreline Monitoring - Titahi Bay Beach at Toms Road - Surf Club

Date	Enterococci	pH	Dissolved Oxygen	Temp.
dd/mm/yyyy	cfu/100mL	-	g/m^3	˚C
29/07/2024	30	8.14	11.61	13.4
27/08/2024	320	8.14	11.61	13.4
25/09/2024	10	8.07	12.62	14.1
17/10/2024	20	8.09	10.89	13.3
26/11/2024	10	8.15	10.47	8.15
16/12/2024	10	8.13	9.78	18.7
28/01/2025	10	8.17	10.41	15.9
27/02/2025	330	8.15	8.81	18.9
24/03/2025	10	8.12	9.69	17.7
15/04/2025	80	8.08	10.82	16.7
23/05/2025	40	8.38	11.13	15.8
27/06/2025	-	8.29	9.77	14.8

Table 4-4: Control site monthly shoreline sampling results

Date	Total Ammonia Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Reactive Phosphorus	Total Nitrogen	Total Phosphorus	Enterococci	pH	Salinity	Dissolved Oxygen	Temp.
dd/mm/yyyy	g/m^3	g/m^3	g/m^3	g/m^3	g/m^3	g/m^3	cfu/100mL	-	g/m^3	g/m^3	˚C
29/07/2024	0.01	0.01	0.01	0.009	0.1	0.05	10	8.08	34	11.78	13.1
27/08/2024	0.02	0.01	0.01	0.010	0.13	0.075	1100	8.08	31	11.78	13.4
25/09/2024	0.02	0.01	0.01	0.008	0.01	0.025	10	8.14	33	13.91	14.2
17/10/2024	<0.01	<0.1	<0.1	<0.002	0.196	<0.05	<10	8.13	35	11.79	13.4
26/11/2024	<0.01	0.01	<0.1	<0.1	<0.002	0.268	<10	8.03	33	11.34	17
16/12/2024	0.01	<0.01	<0.01	0.002	0.199	<0.05	<10	8.08	34	9.81	19.1
28/01/2025	0.21	<0.01	<0.01	0.01	0.118	0.023	<10	8.15	34	9.19	16
27/02/2025	0.50	<0.01	0.5	0.002	0.27	0.006	<10	8.21	34	9.36	20.1
24/03/2025	<0.01	<0.01	<0.1	0.005	0.123	0.049	<10	8.21	36	9.56	18.1
15/04/2025	0.33	<0.1	<0.1	<0.002	0.16	0.028	<10	8.17	35	11.47	16
23/05/2025	0.34	<0.1	<0.1	<0.002	0.191	<0.01	<10	8.56	34	14.09	16
27/06/2025	0.35	<0.1	<0.1	<0.002	0.238	<0.05	20	8.37	-	9.96	14.4

4.2 Condition 16

In the event of an incident notified under condition 22A and / or a discharge of partially treated wastewater, the consent holder shall: a. Notify the Manager as soon as practicable of the timing of the discharge, and the reason for the incident and / or the partially treated discharge. b. Take samples at the locations specified in condition 14 as soon as it is safe to do so, within 24 hours of the discharge commencing, and also approximately 48 hours after the discharge commenced, if it is safe to do so. c. Analyse the samples in accordance with condition 15 d. Assess compliance with condition 13.

Table 4-5 summarises incidents notified under condition 22A. Sampling in accordance with conditions 14 and 15 were collected following discharge events, as specified in condition 16. Full monitoring results are in Appendix B.

Part D of condition 16 required an assessment of compliance with condition 13. Discharges occurring during the July-September reporting period resulted in no effects listed under condition 13.

It is likely the effects to the receiving environment were minor, and monitoring results showed parameters returning to normal levels within days of the discharge ceasing.

Table 4-5: Notifiable incidents triggering shoreline monitoring during the 2024-25 compliance year[8]

Date	Event Description	Actions
19/01/2025	UVT Non-compliance	Notifications submitted to GWRC. Shoreline sampling initiated
21/01/2025	Unconsented discharge due to power supply switch to generator	Notifications submitted to GWRC. Shoreline sampling initiated
14/03/2025	Mechanical issue with the Duron UV system.	Notifications submitted to GWRC. Shoreline sampling initiated
18/03/2025	UV by-pass failure	Notifications submitted to GWRC. Shoreline sampling initiated
10/04/2025	Unconsented discharge due to power outage	Notifications submitted to GWRC. Shoreline sampling initiated
21/04/2025	Unconsented discharge due to hydraulic overloading	Notifications submitted to GWRC. Shoreline sampling initiated
30/04/2025	High inflows due to wet weather, resulting in sludge carry over.	Notifications submitted to GWRC. Shoreline sampling initiated

[8] Incident reports are available on the Porirua WWTP page of the Wellington Water website: Porirua Wastewater Treatment Plant (wellingtonwater.co.nz)

Date	Event Description	Actions
01/05/2025	High inflows due to wet weather, resulting in sludge carry over	Notifications submitted to GWRC. Shoreline sampling initiated
02/05/2025	High inflows due to wet weather, resulting in sludge carry over	Notifications submitted to GWRC. Shoreline sampling initiated
02/05/2025	High inflows due to wet weather, resulting in sludge carry over	Notifications submitted to GWRC. Shoreline sampling initiated
18/05/2025	High inflows due to wet weather	Notifications submitted to GWRC. Shoreline sampling initiated

4.3 Condition 28 and 29

Condition 28: The consent holder shall commission an ecological survey of the receiving waters for the discharge. The survey shall involve the collection of information on the biota of the intertidal and shallow-subtidal habitats adjacent to the existing outfall at Rukutane Point, at Round Point to the west of the existing outfall, and at a reference location 300m east of the existing outfall. The survey methods should be comparable with those used for the ecological survey included as Appendix F in the application. The results of the survey shall be incorporated into a report prepared by a suitably qualified and experienced coastal ecologist.

Condition 29: A survey and report required under condition 28 shall be completed and submitted to the Manager:
a. Between the 8th and the 9th anniversary of the commencement of this consent; and
b. Between the 14th and the 15th anniversary of the commencement of this consent.

No ecological survey was required during the 2024-25 compliance year, as per condition 29.

5 Community Liaison Group

The Community Liaison Group (CLG) consists of the following parties:

- Representatives of Te Rūnanga o Ngāti Toa Rangatira.
- Representatives of Wellington Regional Council.
- Representatives of Regional Public Health.
- A representative of Te Awarua o Porirua Harbour and Catchments Community Trust.
- A representative of the Titahi Bay Residents' Association.
- A representative of the Titahi Bay Community Group.
- A representative of the neighbouring landowners and residents.

The CLG meets annually, or as required for events that occur at the WWTP. The annual meeting allows information to be shared between group members, and subsequently the wider community. The CLG met with the WWTP Working Group (WWTPWG) on December 12, 2024. Meeting minutes are attached in Appendix C.

6 Complaints Register

There were two wastewater discharge complaints, and two odour complaints registered during the 2024-25 compliance year. Both registers are available online[9], and in Appendix D.

7 Conclusion

The 2024-25 compliance year was the first year the Porirua WWTP was fully operating under the new consent. The previous year saw a transition period from the old consent conditions to the new ones, resulting in some delays in updating sampling procedures. This delay led to non-compliances with several conditions, due to the variation in monitoring requirements. Transitional non-compliances did not occur this year.

Sustained issues with the UVT sensor, Duron UV penstock, and the solids handling system saw frequent instances of non-compliance with condition 12D, as UVT dropped below the consented 45% limit, however, not every instance of UVT drop below 45% was followed by notification to GWRC. As this issue persisted through the compliance year, some investigations are still ongoing.

Non-compliances were also noted under condition 7, and 9A. These non-compliances were all due to missed samples. Table 7-1 summarises the compliance for this reporting period.

Generally, there has been an improvement in compliance this reporting period. The hourly UVT has been a sustained issue for two consecutive years. Investigation into the ongoing issue has primarily found that probe fouling has been resulting in low UVT readings. These reading are typically not representative, and comparable laboratory results from grab sampling are much higher. Grab samples are likely to provide more representative UVT results until the reliability of the probe can be improved.

Greater Wellington Regional Council issued enforcement notices during the 2024-25 period relating to the WWTP, either received for events occurring prior to or within the 2024-2025 period. These notices are detailed in Appendix E.

Table 7-1: Compliance summary for 2024-25

Resource Consent Condition	Compliance
Condition 4: Inflow and effluent volumes	Compliant
Condition 5J(c): Ecological survey	Not applicable
Condition 6: Wastewater sampling point	Compliant
Condition 7: Wastewater analysis	Non-compliant
Condition 8: UVT faecal coliforms, and enterococci analysis	Compliant
Condition 9: Metals and trace element analysis	Compliant
Condition 9A: Total Ammonia Nitrogen Analysis	Non-compliant

[9] Complaints Registers: Porirua Wastewater Treatment Plant (wellingtonwater.co.nz)

Resource Consent Condition	Compliance
Condition 10: Bacteriophage Analysis	Compliant
Condition 11: Sampling to be completed by IANZ registered laboratory	Compliant
Condition 12: Wastewater Quality	Compliant
Condition 12A: Concentrations of metals and trace elements	Compliant
Condition 12B: Power output of UV lamps	Compliant
Condition 12C: UVT monitoring	Compliant
Condition 12D: Hourly average UVT	Non-compliant
Condition 14: Monthly environmental monitoring	Compliant
Condition 15: Monthly environmental monitoring analysis	Compliant
Condition 16: Incident notifications	Compliant
Condition 28: Ecological survey	Not applicable
Condition 29: Ecological survey	Not applicable
Condition 35A: UV disinfection performance	Compliant

Appendix A Compiled WWTP Monitoring Data

Date	Daily Inflow	Daily Effluent	FC Daily Results	Enterococci	UVT	Total Ammonia Nitrogen	TSS Daily Results	BOD Daily Results
	m^3	m^3	cfu/100mL	cfu/100mL	%	g/m^3	g/m^3	g/m^3
1/07/2024	52066.5	55568.17	24	60	54		75	212
2/07/2024	33127.5	38767.84	16125	5000	53		6	8
3/07/2024	25589.7	28731.92	9487	3600	65	16.8	6	6
4/07/2024	25696.5	29286.35	13000	5500	65		6	4
5/07/2024	21997.8	25719.55	5550	3500	58		6	13
6/07/2024	22309.2	27953.68	1960	2200	66		8	8
7/07/2024	22749.3	27976.63	1342	1200	64		37	65
8/07/2024	20515.2	24173.21	12410	6000	65		6	7
9/07/2024	19901.3	23789.57	3391	3300	64		6	5
10/07/2024	19558.9	23463.69	361	110	62	22.9	6	6
11/07/2024	19202.1	23158.12	100	40	60		7	21
12/07/2024	18350.1	22392.68	134	50	58		9	37
13/07/2024	19756.3	25425.85	59	170	58		8	18
14/07/2024	21270.8	26494.83	124	160	60		11	24
15/07/2024	21202	25226.52	1936	2000	62		14	21
16/07/2024	20854.6	24760.30	2694	1700	61		12	19
17/07/2024	19468.7	23399.00	678	900	60	35.7	13	18
18/07/2024	19036.4	22974.57	1744	2000	64		10	16
19/07/2024	20048.5	23409.80	438	1200	64		16	24
20/07/2024	37364.4	43106.86	693	1000	63		29	35
21/07/2024	26348	32307.97	510	360	63		15	27
22/07/2024	21786.2	25812.19	2045	3400	63		14	15
23/07/2024	20857.7	24975.62	2145	4800	63		15	15
24/07/2024	21162.7	23994.55	7348	2600	63	31.4	21	12
25/07/2024	20564.5	23381.27	10	10	61		15	12
26/07/2024	18629.3	70865.45	141	20	63		25	11
27/07/2024	20654.4	19637.69	73	10	62		6	9
28/07/2024	24113.3	22251.77	10	10	57		7	10
29/07/2024	28953.8	27912.48	173	10	54		21	11
30/07/2024	66322.4	71724.38	529	10	62		19	13
31/07/2024	39223.6	41892.04	566	10	60	15.6	6	6
1/08/2024	35467.3	35671.61	58	10	59		12	8
2/08/2024	34979.5	37976.54	134	10	62		11	10
3/08/2024	28407.2	32538.44	14	10	66		12	8
4/08/2024	27116.5	27806.77	14	10	66		9	11
5/08/2024	23420.1	23690.02	100	10	64		12	10

Date	Daily Inflow	Daily Effluent	FC Daily Results	Enterococci	UVT	Total Ammonia Nitrogen	TSS Daily Results	BOD Daily Results
	m^3	m^3	cfu/100mL	cfu/100mL	%	g/m^3	g/m^3	g/m^3
6/08/2024	22435	20828.80	114	10	63		13	11
7/08/2024	21537.6	20614.72	134	10	62	25.7	8	10
8/08/2024	23553.2	22167.69	10	10	61		7	7
9/08/2024	27776.6	25792.93	14	10	64		11	11
10/08/2024	24564.9	23542.51	74	10	66		9	9
11/08/2024	25236.9	22942.16	114	10	62		12	11
12/08/2024	22273.2	20704.66	100	10	63		14	12
13/08/2024	20814.3	19748.37	10	10	63		6	7
14/08/2024	20827.9	19620.84	10	10	59	18.2	6	6
15/08/2024	20835.4	19420.14	32	10	61		9	5
16/08/2024	19795.7	19061.62	77	10	63		6	12
17/08/2024	24987.5	23812.25	10	10	61		7	17
18/08/2024	65127.7	67081.82	10	10	60		24	15
19/08/2024	39886.5	42335.61	22	10	61		6	8
20/08/2024	26994.8	25912.78	45	10	62		10	9
21/08/2024	24285.7	22788.44	105	40	64	23.7	6	6
22/08/2024	22438.1	21511.44	77	20	66		7	7
23/08/2024	37378.3	38207.69	10	30	65		12	12
24/08/2024	31272.8	33024.19	10	10	66		6	8
25/08/2024	45534.4	43405.62	10	10	64		7	8
26/08/2024	89455.8	95655.80	134	80	65		8	10
27/08/2024	63592.2	68690.33	57	10	64		11	3
28/08/2024	37982.5	40304.44	45	10	64	14.6	21	11
29/08/2024	36994.2	38830.41	10	10	65		13	7
30/08/2024	28561.9	28683.23	10	10	66		6	4
31/08/2024	67320.2	71318.39	41	10	64		31	15
1/09/2024	45730.4	48778.88	45	10	58		23	9
2/09/2024	31697	31149.61	10	10	61		8	6
3/09/2024	87863.7	91799.32	10	10	64		16	7
4/09/2024	55159.7	58689.58	94	50	58	10.4	10	4
5/09/2024	36396.2	38381.37	10	10	62		180	127
6/09/2024	30169.6	31039.99	20	10	64		6	4
7/09/2024	29167.5	28783.01	10	10	66		7	7
8/09/2024	30106.6	30319.74	10	40	63		9	7
9/09/2024	27936.9	25761.25	122	10	62		11	10
10/09/2024	26406	25151.46	77	10	65		8	10
11/09/2024	25154.5	22903.29	39	10	63	28.3	6	9
12/09/2024	23945.6	23046.20	86	10	64		9	7
13/09/2024	30428.8	30920.41	10	10	64		11	9

Date	Daily Inflow	Daily Effluent	FC Daily Results	Enterococci	UVT	Total Ammonia Nitrogen	TSS Daily Results	BOD Daily Results
	m^3	m^3	cfu/100mL	cfu/100mL	%	g/m^3	g/m^3	g/m^3
14/09/2024	32335	30198.68	160	10	65		11	11
15/09/2024	29839.6	28373.83	53	10	64		8	22
16/09/2024	80428.1	83194.12	10	10	66		14	15
17/09/2024	64748.7	69215.42	14	30	62		13	9
18/09/2024	36635.1	36936.58	10	10	64	13.5	9	8
19/09/2024	30222.7	30027.04	1000	10	66		11	9
20/09/2024	29914.4	30675.33	89	10	65		8	13
21/09/2024	27155.7	26536.52	10	10	69		10	12
22/09/2024	29645.9	28778.68	10	10	67		12	20
23/09/2024	25138.3	23592.17	63	10	64		7	20
24/09/2024	24252.5	22322.15	89	10	62		13	23
25/09/2024	23447.8	21765.43	114	10	65	28	11	22
26/09/2024	23474.1	23926.11	89	10	63		16	37
27/09/2024	21584.2	20357.01	10	10	65		7	22
28/09/2024	23238.5	22093.03	122	10	65		9	19
29/09/2024	23861.8	21542.25	118	10	64		6	12
30/09/2024	22466.1	20885.33	10	10	64		8	17
1/10/2024	20975.8	19785.31	32	10	65		9	5
2/10/2024	22340.5	21255.31	14	40	64.2	31.6	6	7
3/10/2024	22513.4	21175.40	10	10	64.5		6	8
4/10/2024	21448	20275.19	55	10	64.8		6	26
5/10/2024	23720.1	21916.62	26	10	62.6		8	12
6/10/2024	28019.6	29362.29	10	10	63.1		16	28
7/10/2024	25050	23098.58	77	10	64.6		9	27
8/10/2024	23090.1	21909.12	87	10	62.6		10	21
9/10/2024	22715.3	21225.60	95	10	63	28.8	8	12
10/10/2024	21516.9	20384.34	76	10	60.4		6	19
11/10/2024	20939.2	19776.14	10	10	66		14	13
12/10/2024	21638.6	20457.26	155	20	64.8		13	19
13/10/2024	50245.6	49989.67	141	10	63.5		12	18
14/10/2024	53905.5	57331.37	14	30	68.1		7	12
15/10/2024	28068.2	28210.20	24	10	66.1		11	28
16/10/2024	24878.9	24706.11	63	10	67.8	20.4	7	21
17/10/2024	23673.8	22143.88	118	30	66		7	13
18/10/2024	21616.2	20460.04	10	10	66.4		37	8
19/10/2024	23329.5	21750.37	60000	6000	64.6		7	29
20/10/2024	24855.1	23482.27	122	20	61.6		16	28
21/10/2024	21663.4	20311.41	24	10	57.5		14	28
22/10/2024	21686.2	20334.22	190	10	58.5		7	12

Date	Daily Inflow	Daily Effluent	FC Daily Results	Enterococci	UVT	Total Ammonia Nitrogen	TSS Daily Results	BOD Daily Results
	m^3	m^3	cfu/100mL	cfu/100mL	%	g/m^3	g/m^3	g/m^3
23/10/2024	20314.5	19016.05	95	10	61.5			
24/10/2024	20453.8	19492.25	118	10	63.3		6	17
25/10/2024	21152.3	20170.96	158	10	63.5		5	17
26/10/2024	34255.2	35585.14	14	30	64.2		9	21
27/10/2024	25062.1	23605.54	10	10	63.8		7	18
28/10/2024	38063	38101.37	10	10	62.9		5	17
29/10/2024	29725	27400.21	24	40	65.5		5	14
30/10/2024	32761.7	32121.72	10	10	62.8	22.1	12	27
31/10/2024	24709.1	23179.87	35	150	64.6		8	21
1/11/2024	21920.7	20926.83	148	150	64.6		6	23
2/11/2024	22854.8	21570.96	300	10	63.7		8	24
3/11/2024	24952.3	22829.69	179	10	60		15	35
4/11/2024	22147	20527.98	173	10	59.9		6	31
5/11/2024	26654.6	24625.09	212	10	64.1		11	22
6/11/2024	24399.8	24464.14	155	10	62.3		6	12
7/11/2024	23018.3	21435.40	22	10	64.9	27.2	13	14
8/11/2024	20995.6	19630.83	126	10	60.7		6	59
9/11/2024	31335.5	30262.76	24	10	61.7		5	16
10/11/2024	29982.1	29138.57	10	10	64.5		5	17
11/11/2024	24755.4	22632.21	184	10	64.2		16	22
12/11/2024	23055.6	21749.98	141	10	62.9		6	12
13/11/2024	22059.4	20673.18	297	10	63.6	30.1	8	11
14/11/2024	41128.9	39368.28	130	10	65		10	22
15/11/2024	45615.9	47859.91	30	10	65.6		16	18
16/11/2024	29741.6	28493.45	110	20	66.2		15	10
17/11/2024	26251.9	24832.59	316	10	61.7		8	15
18/11/2024	24830.1	22948.32	75	10	60.3		19	28
19/11/2024	23080.3	21245.11	10	10	62.4		6	21
20/11/2024	23519.9	21820.91	14	10	59.1	33.9	8	11
21/11/2024	22044.1	20756.33	24	10	65.2		8	14
22/11/2024	21218.8	20143.47	200	80	62.5		7	14
23/11/2024	21884.8	20252.83	10	20	62.9		11	14
24/11/2024	24749.6	22294.45	14	20	63.5		9	16
25/11/2024	22069.3	20240.68	145	10	63.7		19	20
26/11/2024	21342.3	19766.63	883	10	64		8	18
27/11/2024	20563.7	19512.05	525	60	62.9	33.5	15	15
28/11/2024	20481.1	19554.85	469	30	61.8		14	13
29/11/2024	19438.3	18413.05	182	10	63.2		8	15
30/11/2024	21839.6	24050.24	35	10	62.3		6	35

Date	Daily Inflow	Daily Effluent	FC Daily Results	Enterococci	UVT	Total Ammonia Nitrogen	TSS Daily Results	BOD Daily Results
	m^3	m^3	cfu/100mL	cfu/100mL	%	g/m^3	g/m^3	g/m^3
1/12/2024	22741.6	20411.19	32	10	61.8		6	21
2/12/2024	20375.4	19467.03	490	10	59		5	18
3/12/2024	20126.2	19129.48	10	10	57.6		5	19
4/12/2024	19419	19226.91	20	10	62.8		5	16
5/12/2024	21552.8	22014.82	10	30	62.9	36.3	9	20
6/12/2024	20815.5	19037.71	112	10	59.4		8	19
7/12/2024	20539.7	19693.14	424	10	60.9		6	20
8/12/2024	31379.3	31590.53	87	10	55.9		7	14
9/12/2024	22870.9	21790.03	20	10	55		9	15
10/12/2024	20678.7	19898.07	24	10	61.9		9	18
11/12/2024	20581.1	19422.13	53	10	63.5	28.3	15	20
12/12/2024	20073.8	19094.49	55	10	61.8		9	18
13/12/2024	19763.1	18906.50	100	10	62.9		6	18
14/12/2024	19859.2	19414.40	10	10	62.2		6	17
15/12/2024	21735.7	20396.49	14	10	60.8		8	21
16/12/2024	35841.8	39625.83	251	700	59.9		11	20
17/12/2024	22552.2	21552.43	7483	10	63.6	21.1	12	24
18/12/2024	21148.8	19928.14	118	20	59.9		6	17
19/12/2024	28538.9	27043.04	110	10	59.2		7	12
20/12/2024	23490.6	22352.73	110	10	63		23	8
21/12/2024	27981.5	26579.84	10	10	59.9		16	10
22/12/2024	23076.5	22282.67	10	60	65.6		10	9
23/12/2024	20803.6	20484.72	10	40	44.3		11	6
24/12/2024	21247.9	20434.59	69	10	60.9		6	13
25/12/2024	20213.3	19807.60	14	10	60.4	33.5	7	6
26/12/2024	29316.4	30122.63	20	10	60.8		6	6
27/12/2024	23847.6	22626.28	145	10	56.3		6	7
28/12/2024	21409.8	20041.49	41	10	63.2		6	7
29/12/2024	20021.6	19196.37	47	10	61.3		6	8
30/12/2024	22218.7	25942.71	10	10	59.2		6	8
31/12/2024	24895.7	23820.78	24	40	64.1		6	6
1/01/2025	24833.6	24425.60	167	10	65		6	6
2/01/2025	21735.9	20555.25	41	10	66	27	6	6
3/01/2025	41132	40756.93	39	10	66		5	12
4/01/2025	26198.1	25186.15	17	10	64		6	6
5/01/2025	24523.5	23098.56	10	10	62		6	6
6/01/2025	23060.4	22442.19	30	10	67		6	6
7/01/2025	23227.1	21689.87	32	10	65		6	5
8/01/2025	21493.3	20655.08	24	10	63	22.1	6	8

Date	Daily Inflow	Daily Effluent	FC Daily Results	Enterococci	UVT	Total Ammonia Nitrogen	TSS Daily Results	BOD Daily Results
	m^3	m^3	cfu/100mL	cfu/100mL	%	g/m^3	g/m^3	g/m^3
9/01/2025	21422.8	20197.93	57	10	65		6	5
10/01/2025	20145.4	19427.09	33	10	63		6	5
11/01/2025	20313.8	19158.94	10	10	62		6	6
12/01/2025	21286.2	19843.99	10	10	60		10	8
13/01/2025	20105.4	19339.67	10	10	58		6	8
14/01/2025	20082.4	19027.13	10	10	65		6	7
15/01/2025	19772.7	18987.19	10	10	64		9	7
16/01/2025	20332.6	18768.75	14	10	65	32.8	6	4
17/01/2025	19527.4	18571.43	47	70	66		6	6
18/01/2025	19736.3	19237.15	42	20	65		10	4
19/01/2025	19246.7	24466.57	63	10	65		9	6
20/01/2025	21096.1	26278.51	42	10	64		19	4
21/01/2025	19986.3	25190.55	191	90	65		27	5
22/01/2025	19534.6	24783.23	420	1200	64	36.4	17	10
23/01/2025	18979.7	24882.76	186	60	64		21	6
24/01/2025	18282.3	23560.04	51	130	62		22	6
25/01/2025	19376.1	24709.09	22	10	62		23	6
26/01/2025	23497.2	29575.00	14	10	62		13	6
27/01/2025	20325.7	23657.04	620	360	62		19	11
28/01/2025	19601.4	23352.42	98	30	66		18	6
29/01/2025	19448.2	22841.03	63	10	68	39.7	6	6
30/01/2025	26282.2	30181.64	63	30	68		15	9
31/01/2025	20211	24071.60	141	60	69		6	6
1/02/2025	23499.3	29147.60	167	10	67		7	6
2/02/2025	23745.7	28853.39	41	140	67.1		11	7
3/02/2025	20418.6	24535.34	39	50	66.7		6	9
4/02/2025	19797.2	25122.88	17	420	65.7		10	10
5/02/2025	18582.5	22128.34	10	180	63.1	33.4	5	6
6/02/2025	21167	26102.30	30	6000	64.9		6	6
7/02/2025	19027.6	21768.43	32	160	64		5	6
8/02/2025	19628.2	24777.63	24	30	62.6		7	6
9/02/2025	20994.2	26022.60	57	10	63.2		12	11
10/02/2025	19920.4	22496.88	33	700	63.2		60	12
11/02/2025	19335.6	22239.04	10	450	62.9		11	17
12/02/2025	19217.8	23436.15	10	250	63.7	34.5	6	10
13/02/2025	19575.5	22386.83	10	400	58.4		7	18
14/02/2025	18453.1	22028.06	10	10	64.6		5	8
15/02/2025	19903.9	25292.06	10	190	63.8		5	6
16/02/2025	21433	26427.61	14	40	62.2		8	19

Date	Daily Inflow	Daily Effluent	FC Daily Results	Enterococci	UVT	Total Ammonia Nitrogen	TSS Daily Results	BOD Daily Results
	m^3	m^3	cfu/100mL	cfu/100mL	%	g/m^3	g/m^3	g/m^3
17/02/2025	19703.7	21964.70	47	560	61.9		6	9
18/02/2025	23633.1	26756.95	42	2000	63.8		5	7
19/02/2025	20910.5	24484.68	63	10	63.4	29.4	5	9
20/02/2025	20228.5	23779.05	42	10	63.5		5	13
21/02/2025	20062	24403.96	191	10	64.9		5	14
22/02/2025	20768	25984.97	420	10	65.4		5	14
23/02/2025	21615	26647.47	186	10	64.3		5	21
24/02/2025	19501.1	23817.66	51	140	63.4		9	35
25/02/2025	19062.1	22549.38	22	400	63.1		5	17
26/02/2025	19203.4	18195.37	14	120	61.6		7	18
27/02/2025	19395.5	22965.77	620	10	60.4	28.2	6	30
28/02/2025	18341.9	21832.61	98	30	60.8		5	16
1/03/2025	20029.5	25214.68	127	20	62.5		5	11
2/03/2025	22349.1	27340.77	134	80	60.9		6	42
3/03/2025	19232.1	22744.69	412	480	61.3		10	21
4/03/2025	23652.8	27510.99	1,549	1300	61.1		10	17
5/03/2025	20734.2	25184.31	10,040	5800	61.8	29.7	20	19
6/03/2025	19535.5	22907.74	2,098	2000	66.1		13	28
7/03/2025	18676.2	22156.73	2,121	2800	65.3		5	31
8/03/2025	19288.9	24557.96	261	490	65.1		6	22
9/03/2025	22001.2	27142.34	28	60	62.3		12	51
10/03/2025	18945.3	22411.72	16,912	6000	62.4		10	44
11/03/2025	18233.4	21911.25	81	30	61.4		14	45
12/03/2025	21316.8	22098.63	32	10	61		10	29
13/03/2025	18944.4	22434.87	65	10	62	29.3	6	23
14/03/2025	17880.2	23949.08	77	10	64.8		13	11
15/03/2025	19739.8	25367.35	55	30	58.8		11	20
16/03/2025	20706.4	25845.14	37	10	65.7		10	15
17/03/2025	19228.7	25089.24	50	30	64.1		12	19
18/03/2025	23426.6	29138.56	135	70	66.4	32	10	23
19/03/2025	29521	33284.09	47	70	65.6		9	15
20/03/2025	20623.9	27264.18	200	110	67.6	24.7	20	21
21/03/2025	19266.6	25391.11	69	70	67.4		26	20
22/03/2025	19822.5	25606.71	20	40	66		16	21
23/03/2025	21825	27283.32	32	60	62.6		16	15
24/03/2025	18944.3	24773.48	1,876	1800	62.5		7	22
25/03/2025	19360	24601.52	1,273	1500	61.9		5	6
26/03/2025	19631	24222.57	1,200	1200	62.1		5	6
27/03/2025	20077.7	20780.82	2,020	2400	61.3	22.4	6	6

Date	Daily Inflow	Daily Effluent	FC Daily Results	Enterococci	UVT	Total Ammonia Nitrogen	TSS Daily Results	BOD Daily Results
	m^3	m^3	cfu/100mL	cfu/100mL	%	g/m^3	g/m^3	g/m^3
28/03/2025	17798.8	19351.25	63	10	59.3		6	6
29/03/2025	20407.4	20757.19	84	10	60.2		6	10
30/03/2025	21680.7	22331.99	51	10	63.7		8	6
31/03/2025	18759.5	19961.23	10	20	63.4		12	18
1/04/2025	19619.7	20726.56	10	10	63.9		11	20
2/04/2025	18683.5	19854.06	10	10	63.7	19.3	16	23
3/04/2025	22964.8	23337.38	22	10	62.9		6	22
4/04/2025	42569.9	44688.24	35	10	64		8	22
5/04/2025	23550.1	24142.09	33	10	66.3		6	15
6/04/2025	27450.4	27015.40	45	10	64.1		11	30
7/04/2025	23658.7	24513.05	17	10	64.3		10	16
8/04/2025	26867.2	26961.68	10	10	64.3		19	22
9/04/2025	21674.6	22900.54	40	10	65.9	10.6	9	18
10/04/2025	20352.8	22365.65	20	20	68.2		11	16
11/04/2025	19133.1	20704.92	28	10	68.4		3	11
12/04/2025	21056.5	21352.30	10	10	64.9		5	20
13/04/2025	21605.1	22030.69	10	10	65		4	31
14/04/2025	19889.3	20808.38	35	10	65.5		6	22
15/04/2025	19595.8	19811.09	10	10	65.2		6	17
16/04/2025	18710.4	20174.22	30	10	64.7	5.91	24	24
17/04/2025	17947.1	19901.95	26	20	66.9		5	22
18/04/2025	20492	22302.43	10	10	66.9		5	22
19/04/2025	20551.7	20448.04	14	10	66.4		5	19
20/04/2025	43736.8	43594.93	22	10	64.1		19	35
21/04/2025	31898.3	34023.20	877	2400	46.4		20	33
22/04/2025	22377.6	23609.57	24	10	67.3		5	15
23/04/2025	21406.9	21709.71	10	10	67.5	3.32	5	12
24/04/2025	21003.1	21137.60	10	10	68.3		6	17
25/04/2025	21398.3	21597.98	10	10	67.4		6	18
26/04/2025	20519.9	21854.64	10	10	65.8		6	17
27/04/2025	22914.8	22915.29	10	10	65.7		13	13
28/04/2025	20403.8	21427.57	69	10	64.1		10	20
29/04/2025	20487.6	21082.83	85	200	64		6	15
30/04/2025	54161.3	54132.53	10	10	64.9	3.56	268	82
1/05/2025	69273.9	69359.95	92	290	67.4		117	42
2/05/2025	55607.9	60195.40	171	280	69.6		42	27
3/05/2025	30913.1	31035.74	24	10	70.5		6	9
4/05/2025	26106.2	26131.70	40	10	68.6		6	15
5/05/2025	22505.6	23461.06	22	10	67.7		9	19

Date	Daily Inflow	Daily Effluent	FC Daily Results	Enterococci	UVT	Total Ammonia Nitrogen	TSS Daily Results	BOD Daily Results
	m^3	m^3	cfu/100mL	cfu/100mL	%	g/m^3	g/m^3	g/m^3
6/05/2025	20841.9	22174.63	10	10	68.8		6	14
7/05/2025	20329.4	21848.30	10	20	69.5	4.07	6	11
8/05/2025	28197.3	28418.42	10	20	67.1		6	19
9/05/2025	54366.7	59458.75	3,795	190	63.3		32	35
10/05/2025	28998.1	29872.06	14	10	65.8		6	9
11/05/2025	26325.4	26363.31	10	10	66.8		6	14
12/05/2025	23075.1	23955.47	22	10	66.2		6	23
13/05/2025	21874.3	22722.41	35	20	65		6	15
14/05/2025	21554.2	22440.49	62	100	66.4	6.23	6	11
15/05/2025	21245.1	21682.71	160	100	65.5		6	9
16/05/2025	19445.4	20837.57	14	10	66.5		6	8
17/05/2025	26409.7	25850.30	26	10	66.9		6	7
18/05/2025	82962.1	86388.55	17	30	65.6		45	46
19/05/2025	62567.8	63925.09	46	50	64.5		18	22
20/05/2025	34409.3	33857.84	10	10	65.5		8	14
21/05/2025	26664.1	27399.85	20	50	64.2	6.68	6	18
22/05/2025	24525	25016.96	24	50	73.3		6	6
23/05/2025	22360.4	23187.62	150	20	77.1		6	6
24/05/2025	23248.6	23812.09	10	10	76.6		6	11
25/05/2025	24011.5	24222.75	10	10	75.7		7	20
26/05/2025	22321.3	22995.54	60	10	72.5		6	19
27/05/2025	21942.7	22461.82	10	10	72.2		6	11
28/05/2025	31538.5	31332.81	10	60	66.7	4.38	6	13
29/05/2025	51483.4	55858.30	183	170	68.8		14	22
30/05/2025	28512.1	29226.59	45	90	66.6		6	11
31/05/2025	24895	25402.76	60	40	67		6	8
1/06/2025	23288.1	23530.12	24	10	65.9		15	3
2/06/2025	24115.3	24452.43	30	10	60.2		8	19
3/06/2025	21818.7	23247.85	10	10	66		6	13
4/06/2025	70387.8	73757.77	10	10	66.1	3.26	6	21
5/06/2025	36582.5	38945.88	10	10	61.6		6	10
6/06/2025	37965.6	37014.65	28	10	64.8		6	10
7/06/2025	35003.7	34314.06	10	10	67.3		5	7
8/06/2025	30503.4	29625.88	10	10	67.4		7	18
9/06/2025	30551.5	30332.28	24	10	62.9		5	14
10/06/2025	31473.8	31696.05	17	20	67.9		13	11
11/06/2025	64494.3	67393.43	17	10	69.5	4.88	26	35
12/06/2025	72321.4	77816.62	10	10	65.3		11	29
13/06/2025	51192.8	56004.01	10	10	63.2		14	24

Date	Daily Inflow	Daily Effluent	FC Daily Results	Enterococci	UVT	Total Ammonia Nitrogen	TSS Daily Results	BOD Daily Results
	m^3	m^3	cfu/100mL	cfu/100mL	%	g/m^3	g/m^3	g/m^3
14/06/2025	36435.1	38085.74	10	10	65.3		5	19
15/06/2025	31804.8	31233.72	28	10	63.7		5	13
16/06/2025	26815.4	26731.79	10	10	66		5	21
17/06/2025	24555.8	24724.78	10	10	68		6	19
18/06/2025	23196.3	24218.97	10	10	67.3	10.6	6	14
19/06/2025	27805.3	27894.90	10	10	67.5		6	20
20/06/2025	23713.7	24783.19	10	10	65.7		6	10
21/06/2025	26780.9	26642.37	10	10	66.2		6	10
22/06/2025	26377.3	26347.78	10	10	66.2		6	18
23/06/2025	22972.9	23860.83	24	20	66.2		6	8
24/06/2025	22479.4	23096.26	10	10	66.1		6	12
25/06/2025	25957.8	26294.68	14	40	64.6	7.74	6	20
26/06/2025	43197.6	44442.35	10	10	66.6		6	18
27/06/2025	51803	54061.70	24	10	67.6		10	20
28/06/2025	45386.6	48561.48	14	10	67.1		6	8
29/06/2025	34235.7	33636.57	26	10	66.6		6	20
30/06/2025	26810.3	27697.21	10	10	66.1		6	15

Appendix B Shoreline Monitoring Results

140m generally eastwards of the outfall											
Date	Total Ammonia Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Reactive Phosphorus	Total Nitrogen	Total Phosphorus	Enterococci	pH	Salinity	Dissolved Oxygen	Temp.
dd/mm/yyyy	g/m^3	g/m^3	g/m^3	g/m^3	g/m^3	g/m^3	cfu/100mL	-	g/m^3	g/m^3	°C
19/01/2025	0.37	<0.01	<0.1	0.009	0.184	<0.05	<10	8.17	34	12.07	15.9
20/01/2025	0.36	<0.01	<0.1	0.014	0.180	<0.05	<10	8.04	34	11.77	15.8
21/01/2025	0.42	<0.01	<0.1	0.007	0.197	<0.05	10	8.09	34	11.77	15.8
21/01/2025	0.36	<0.01	<0.01	0.007	0.112	<0.05	<10	8.09	34	11.77	15.8
22/01/2025	0.38	<0.01	<0.01	0.007	0.141	0.046	<10	8.12	34	11.2	18.2
23/01/2025	0.35	<0.1	<0.1	0.004	0.219	0.074	<10	8.11	33	9.81	17.2
14/03/2025	0.04	<0.1	<0.1	<0.002	0.231	<0.005	<10	8.13	35	9.65	14.6
15/03/2025	<0.01	<0.1	<0.1	<0.002	0.231	0.010	10	8.12	36	10.69	15.9
16/03/2025	0.01	<0.1	<0.1	0.003	0.271	<0.025	<10	8.12	35	9.42	17.3
18/03/2025	0.05	<0.1	<0.1	0.005	0.446	<0.05	<10	8.09	35	9.82	17.8
19/03/2025	0.03	<0.1	<0.1	0.010	0.342	0.035	110	8.15	33	9.88	17.3
20/03/2025	0.05	<0.1	<0.1	0.011	0.156	<0.05	<10	8.17	35	9.9	16.8
21/04/2025	0.30	<0.1	<0.1	0.014	0.379	0.082	1400	8.2	29	12.55	18.8
22/04/2025	0.33	<0.1	<0.1	<0.002	0.320	0.059	40	8.15	33	10.76	17.8
23/04/2025	0.31	<0.1	<0.1	<0.002	0.206	0.029	<10	8.12	34	10.56	17.2
01/05/2025	0.29	<0.1	<0.1	0.031	0.299	0.018	70	8.2	35	10.4	16.1
02/05/2025	0.26	<0.1	<0.1	0.013	0.308	0.147	120	8.16	35	11.12	14.7
03/05/2025	0.29	<0.1	<0.1	0.034	0.207	0.058	<10	8.07	35	12.39	14.5
04/05/2025	0.27	<0.1	<0.1	0.014	0.493	0.06	<10	8.12	34	10.58	13.1
05/05/2025	0.27	<0.1	<0.1	0.01	0.265	0.048	20	8.06	35	10.78	12.1
19/05/2025	0.38	<0.1	<0.1	0.005	0.162	<0.05	10	8.06	39	12.07	15.3
20/05/2025	0.32	<0.1	<0.1	0.005	0.163	<0.05	130	8.15	38	11.75	15.1
21/05/2025	0.37	<0.1	<0.1	0.006	0.149	<0.025	<10	8.16	39	14.25	15.4
22/05/2025	0.33	<0.1	<0.1	0.006	0.154	0.018	<10	8.04	39	11.81	15.6

200m generally south-westwards of the outfall											
Date	**Total Ammonia Nitrogen**	**Nitrate Nitrogen**	**Nitrite Nitrogen**	**Dissolved Reactive Phosphorus**	**Total Nitrogen**	**Total Phosphorus**	**Enterococci**	**pH**	**Salinity**	**Dissolved Oxygen**	**Temp.**
dd/mm/yyyy	**g/m^3**	**g/m^3**	**g/m^3**	**g/m^3**	**g/m^3**	**g/m^3**	**cfu/100mL**	**-**	**g/m^3**	**g/m^3**	**°C**
19/01/2025	0.61	<0.1	<0.1	0.010	0.531	0.017	<10	8.08	33	11.88	16.8
20/01/2025	0.55	<0.1	<0.1	0.014	0.568	0.020	140	8.11	34	12.08	17.3
21/01/2025	0.74	<0.1	<0.1	0.018	0.584	0.009	10	8.17	33	10.87	15.9
21/01/2025	0.41	<0.01	<0.01	0.015	0.130	<0.05	<10	8.17	33	10.87	15.9
22/01/2025	1.09	<0.01	<0.01	0.036	0.879	<0.05	<10	8.09	33	10.89	17.6
23/01/2025	0.61	<0.01	<0.01	0.039	0.461	0.023	<10	8.17	33	11.35	16.9
14/03/2025	0.01	<0.1	<0.1	0.008	0.247	<0.025	<10	8.07	35	8.99	14.9
15/03/2025	0.16	<0.1	<0.1	0.016	0.506	0.020	10	8.17	35	10.5	16.8
16/03/2025	0.02	<0.1	<0.1	<0.002	0.569	<0.025	120	8.18	35	10.09	17.1
18/03/2025	0.20	<0.1	<0.1	0.018	0.634	<0.05	20	8.19	35	9.99	18.2
19/03/2025	0.16	<0.1	<0.1	0.006	0.522	0.020	560	8.07	35	9.54	17.6
20/03/2025	0.36	<0.1	<0.1	0.030	0.557	<0.05	80	8.09	35	7.39	17.9
21/04/2025	0.29	0.38	<0.1	0.051	1.08	0.146	4000	8.17	22	10.61	19.6
22/04/2025	0.28	<0.1	<0.1	0.067	0.571	0.200	80	8.08	28	10.18	18.3
23/04/2025	0.32	<0.1	<0.1	0.083	0.295	0.233	30	8.09	33	10.44	17.6
01/05/2025	0.02	<0.1	<0.1	0.012	0.227	<0.01	30	8.13	35	10.2	15.8
02/05/2025	0.33	<0.1	<0.1	0.032	0.482	0.298	220	8.09	34	10.84	14.5
03/05/2025	0.31	<0.1	<0.1	0.029	0.288	0.072	20	8.1	35	10.84	14.6
04/05/2025	0.4	<0.1	<0.1	0.087	0.582	0.044	170	8.09	25	9.9	13
05/05/2025	0.29	<0.1	<0.1	0.017	0.197	<0.05	10	8.04	35	10.61	12.1
19/05/2025	0.33	<0.1	<0.1	0.024	0.519	0.068	540	8.13	38	3.32	15.3
20/05/2025	0.38	<0.1	<0.1	0.023	0.328	<0.05	10	8.08	37	11.32	15.4
21/05/2025	0.34	<0.1	<0.1	0.04	0.323	<0.025	20	8.19	39	9.18	15.9
22/05/2025	0.32	<0.1	<0.1	0.007	0.219	0.037	<10	8.04	39	11.21	15.5

Titahi Bay					
Date	**Enterococci**	**pH**	**Salinity**	**Dissolved Oxygen**	**Temp.**
dd/mm/yyy y	**cfu/100mL**	**-**	**g/m^3**	**g/m^3**	**˚C**
19/01/2025	240	8.15	33	11.79	16.3
20/01/2025	<10	8.08	33	12.22	16.4
21/01/2025	20	8.14	34	11.29	16.3
21/01/2025	130	8.14	34	11.29	16.3
22/01/2025	30	8.14	34	11.86	17.9
23/01/2025	<10	8.09	34	10.68	17.3
14/03/2025	110	8.1	35	9.37	14.5
15/03/2025	50	8.07	36	10.87	16.7
16/03/2025	320	8.15	35	8.92	17.4
18/03/2025	60	8.12	35	10.01	16.9
19/03/2025	>6000	8.17	14	10.21	17.2
20/03/2025	10	8.2	35	10.34	17
21/04/2025	540	8.15	35	11.13	19.7
22/04/2025	10	8.17	35	11.29	18.6
23/04/2025	200	8.13	35	10.78	16.5
01/05/2025	280	8.18	35	9.11	15.8
02/05/2025	100	8.17	35	11.28	14.2
03/05/2025	10	8.12	35	12.45	14.2
04/05/2025	10	8	35	10.67	13.2
05/05/2025	10	8.11	35	10.63	11.9
19/05/2025	200	8.07	39	12.06	14.8
20/05/2025	300	8.11	39	11.68	15.6
21/05/2025	100	8.28	38	13.99	15.7
22/05/2025	3600	8.07	39	11.66	15.6

Control											
Date	Total Ammonia Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Reactive Phosphorus	Total Nitrogen	Total Phosphorus	Enterococci	pH	Salinity	Dissolved Oxygen	Temp.
dd/mm/yyyy	g/m^3	g/m^3	g/m^3	g/m^3	g/m^3	g/m^3	cfu/100mL	-	g/m^3	g/m^3	°C
19/01/2025	0.35	<0.01	<0.1	0.010	0.164	0.008	<10	8.18	34	12.58	17.4
20/01/2025	0.40	<0.01	<0.1	0.006	0.155	<0.05	<10	8.15	34	12.56	17.8
21/01/2025	0.73	<0.01	<0.1	0.007	0.186	0.014	<10	8.08	34	11.21	17.4
21/01/2025	0.40	<0.01	<0.01	0.009	0.117	<0.05	<10	8.08	33	11.21	17.4
22/01/2025	0.38	<0.01	<0.01	0.008	0.086	<0.05	<10	8.17	34	11.83	18.1
23/01/2025	0.35	<0.1	<0.1	0.042	0.188	0.071	<10	8.15	34	11.95	18.3
14/03/2025	<0.01	<0.1	<0.1	<0.002	0.211	<0.005	10	8.21	36	10.16	14.9
15/03/2025	<0.01	<0.1	<0.1	<0.002	0.191	0.011	<10	8.19	36	11.18	17.2
16/03/2025	<0.01	<0.1	<0.1	<0.002	0.206	<0.025	<10	8.27	36	7.05	17.1
18/03/2025	<0.01	<0.1	<0.1	<0.002	0.165	<0.05	10	8.18	35	10.81	18.4
19/03/2025	<0.01	<0.1	<0.1	<0.002	0.112	0.015	120	8.11	34	10.48	16.9
20/03/2025	<0.01	<0.1	<0.1	0.006	0.115	<0.05	<10	8.28	35	11.39	16.6
21/04/2025	0.30	<0.1	<0.1	<0.002	0.280	0.052	600	8.27	33	14.86	19.5
22/04/2025	0.28	<0.1	<0.1	<0.002	0.311	0.053	60	8.12	34	10.77	17.9
23/04/2025	0.31	<0.1	<0.1	<0.002	0.341	<0.025	30	8.23	35	10.86	17
01/05/2025	<0.01	<0.1	<0.1	0.005	0.128	<0.025	180	8.09	34	8.63	15.2
02/05/2025	0.94	<0.1	<0.1	<0.002	0.197	0.062	80	8.12	35	11.06	13.8
03/05/2025	0.27	<0.1	<0.1	0.01	0.18	0.043	20	8.09	34	13.33	13.9
04/05/2025	0.31	<0.01	<0.1	<0.002	0.255	0.057	<10	8.21	35	11.45	12.4
05/05/2025	0.32	<0.01	<0.1	<0.002	0.195	0.05	<10	8.06	35	10.48	11.5
19/05/2025	0.33	<0.01	<0.1	0.008	0.126	<0.05	90	8.11	39	11.55	14.6
20/05/2025	0.38	<0.01	<0.1	0.009	0.289	<0.05	240	8.08	33	13.5	14.2
21/05/2025	0.39	<0.01	<0.1	<0.002	0.153	<0.025	<10	8.31	38	15.94	15.2
22/05/2025	0.32	<0.01	<0.1	0.006	0.207	0.022	<10	8.11	39	13.96	15.3

Appendix C Meeting Minutes

Wellington Water

Regional Wastewater Services
MEETING MINUTES

Date:	12 December 2024
Subject:	Customer Liaison Group meeting – Porirua Wastewater Treatment Plant (WWTP)
Time:	18:00 – 19:30
Location:	Te Rauparaha Arena, Meeting Room 2
Attendees:	Facilitator – Andrew Freeman GWRC – Amanda O'Brien, Mel Warner, Toby Barach Veolia - Alex Phelan, Nico Robins, Wayne Murphy. WWL - Jeremy McKibbin, Blair Johnson, Joemar Cacnio, Craig Shuttleworth (Mins), Asli Crawford, Linda Lim Regional Public Health – Mike Fisher Community members and Councillors – Mike Duncan, Maree Wright, Kathleen Filo, Paula Birnie, Michelle Warshawsky, Dave Philipson, Emily Peterson, Brian Warburton, Angela Davies, Jim Mikoz +1 Holly Parekowhai +1, Sarah Miller, Glyn Hunt, Graeme Ebbett
Apologies:	Sheil Priest (WWL)

Welcome & Introduction by WWL

Andrew opened with a Karakia welcoming everyone to the meeting advising Health and Safety instructions, reminding attendees of the importance of respect and the spirit of engagement.

Brief introductions were made and acknowledgement and thanks passed on to the various stakeholders for their attendance.

Titahi Bay Residents Association provided Wellington Water with a document with a series of questions and statements relating to the resource consent and requested that these be included with the minutes. Wellington Water has lodged this document as an Official Information Request and will respond directly through the correct LGOIMA process. The copy of the document handed over and the official response will be available on the website when the response is provided within the required timeframe.

Wellington Water WWTP Compliance and Performance Update

Joemar (Senior Wastewater Operations and Asset Adviser) began with a PowerPoint presentation detailing the wastewater treatment process of the Porirua WWTP and the compliance performance. The several discharge events that had occurred during the previous reporting period (2023/24) were acknowledged and the community was reassured that the impacts of the discharges to the receiving environment would be minor.

The presentation also detailed the operational challenges the treatment plant faces as well as information on plant performance for the current financial year (July 24 – December 24).

The presentation continued advising the attendees of the plant's "Poor" performance rating in relation to the resource consents for the financial year ending 30 June 2024.

Project Updates

Project updates were provided on further slides in the presentation. The following was covered:

- UV Power supply – Work progressing well with completion expected by January 2025
- Solids handling Upgrade, under design stage. Target Completion Date: 2028
- Odour Treatment, contract awarded. Target completion date June 2026

GWRC commentary
Andrew thanked Joemar for the opening segment and invited Melissa Warner (GRWC) to provide some comments from GWRC's perspective. Mel explained to the attendees how GRWC had come to the decision to grant the plant's compliance rating as 'Poor'. Details and reasonings for the non-compliance notices issued in the 23/24 financial year were provided e.g, Abatement and Infringement Notices.
Questions and Feedback
Andrew invited members of the community to come forward with any questions they may have about the presentation or the plant itself. The following matters were raised and discussed: • Members of the community would like to have the CLG as soon as the plant's annual report is available and earlier than December. WWL will take this onboard and will schedule the next CLG in October or November noting that GWRC's compliance report may not be available during the meeting. Members of the community indicated that the GWRC Compliance Report was not crucial to the timing of the meeting. Members of the community queried how the presentation on the plant's compliance mainly focuses on effluent quality, wastewater volume, discharges, and odour. WWL clarified that the presentation only focuses on the plant's performance on a high level with operational issues discussed afterwards. Moving forward WWL will ask for feedback on the community on the consent conditions they would like the presentation to focus on. • It was clarified that the plant's annual consent report which is due within three months of the anniversary of the consent was granted as per the resource consent. This would mean that the annual report will be available latest by October every year. • The community would like to see more data in terms of the plant performance. This will be investigated by WWL for presentation at the next CLG meeting. • The community was assured that sampling is being carried out as per the resource consent provided that it is safe to do so. Members of the community queried about high pre-UV faecal coliform on 9th July. WWL clarified that pre-UV faecal coliforms are expected to be higher than what the consent allows since this is measured before disinfection happens in the UV system. The consent condition only applies to post-UV levels. • Members of the community queried about the opening of signs during discharge events and resourcing in opening them. WWL have limited resources and not able to assign dedicated staff to open the signs. Signs are opened by Veolia immediately after treatment plant discharges and the public are notified online. Best practice is to follow LAWA advice, no swimming for 3 days after heavy rainfall. • WWL clarified that sampling for effluent ammonia testing is taken from the treatment plant prior to the outfall pipe and then sent for analysis by Eurofins. • WWL clarified that there are autosamplers to collect 24-hour composite samples for influent and effluent which complies with the consent. • WWL confirmed that since end of July 2024, the Duron UV system is the duty channel, and the TAK UV system acts as a standby unit. • Questions raised about the consent of pump stations are not the purpose of the CLG, or part of the agenda of the meeting and therefore have not been included in the minutes. • GWRC explained the differences between the types of non-compliances issued and advised that the public can access their definition on GWRC's website. GWRC will include this as part of the next CLG meeting presentation. • Paula provided some background on an application being developed for a pilot in Wellington that will enable the public to contribute to regional public health updates in real time. She will email details to WWL when ready. • WWL confirmed there is no current funding in the long-term plan to build a sludge drying facility similar to the sludge minimisation project by Wellington City.

Closing Remarks & Actions
Toby (GWRC) thanked the community for their input and acknowledged WWL progress made in recent years to enable to plant to become more stable for effluent quality. Blair thanked all for attending and assured the community that Wellington Water does, and will continue, to work tirelessly to try and achieve the best possible outcomes for both the community and the receiving environment. ACTIONS 1. Aim to organise the CLG earlier next year, prior to December. (Wellington Water) 2. Gather feedback from the community prior to the meeting on key areas that they would like to focus more and WWL will tailor the meeting based on the feedback received. 3. Next year's presentation to have a brief summary on what the GWRC notices mean during their segment (Wellington Water)
Closing Karakia
Andrew closed the meeting with a Karakia.

Attachments: Wellington Water Presentation		
MEETING CLOSED 19:40pm		

Appendix D Complaints Register

D.1 Wastewater Discharge Complaints

Date of Complaint reviewed by Wellington Water	Date of Incident	Complaint description/ Characteristics as per the complainant	Duration of the alleged event/incident	Location of the complaint	Cause of the complaint	Remedial actions undertaken
20/11/2024	18/11/2024	Smelly brown discharge that smells of sewage in Titahi Bay on Sunday 18 Nov 2024. The discharge outfall is frothy, smelly, and brown/discoloured.	Early morning and afternoon	Titahi Bay	NA	NA
26/08/2024	26/08/2024	Porirua Treatment Plant, Titahi Bay [notifier] called there is a wastewater discharge breaching the consent. Customer also emailed in the complaint.	NA	Titahi Bay catchment site	Investigation has been undertaken and confirmed that there was no discharge. Regional council has been informed with the outcome of the investigation.	NA

D.2 Odour Complaints

Date of Complaint Submitted	Date of Incident	Complaint description/ Characteristics as per the complainant	Wind Direction	Average Wind speed (Km/Hr)	Inlet Tunnel Vent Fan Operation – 24 hr format	Plant Operations
10/02/2025	10/02/2025	Complaint received from Pikarere farm resident regarding increasing odour coming from Porirua WWTP. Complainant expressed their concerns over not being notified/contacted regarding this matter.	SE	9.6	Off	Normal
30/01/2025	30/01/2025	Complaint received from Pikarere farm resident expressing frustration over the lack of communication and organisation regarding the Porirua WWTP CLG meeting. The complaint also highlighted ongoing issues with must odour from the Porirua WWTP whenever there are light or northwest winds. The complaint noted there was minimal improvements and no consultation on addressing the odour problem.	NNW	7.1	Off	Normal

Appendix E Enforcement Notices

Date received	Enforcement	Description
3 July 2024	Infringement Notice	Sludge Carryover event on 4 March 2024
22 July 2024	Abatement Notice	Sludge Carryover events
6 August 2024	Infringement Notice	Sludge Carryover event on 6 April 2024
7 October 2024	Advisory Notice	Undisinfected discharges on 5, 16 & 17 June 2024
7 October 2024	Formal Warning	Undisinfected discharge on 16 June 2024
7 October 2024	Formal Warning	Undisinfected discharge on 17 June 2024
16 April 2025	Formal Warning	Undisinfected discharge on 14 March 2025

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Stantec is a global leader in sustainable architecture, engineering, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.