

Porirua Wastewater Treatment Plant

**October - December 2023 Quarterly
Resource Consents Report**

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CONTROL SHEET

Document Title: Porirua Wastewater Treatment Plant October - December 2023 Quarterly Resource Consents Report

Prepared by: Ann Shibu

Reviewed by: Petra Vachova

Authorised by: Alex Phelan

DOCUMENT CONTROL REGISTER

Version	Status	Date	Details of Revision
0	Draft	24/01/2024	Original version for review.
1	Final	30/01/2024	Internally reviewed.

EXECUTIVE SUMMARY

The following report was prepared by Veolia on behalf of the Porirua City Council (PCC) for the Greater Wellington Regional Council (GWRC). This report includes results and observations that satisfy the reporting requirements of the following Porirua Wastewater Treatment Plant resource consents:

WGN200229 [36816]

The Porirua WWTP is governed by the resource consent under the Greater Wellington Regional Council consent file number WGN200229. In general, the consent allows the discharge of treated effluent from the Porirua City Council's Wastewater Treatment Plant at Rukutane Point through an existing outfall at or about map reference NZMS 260:R27;320.097.

The report will cover the quarterly period from October to December 2023 as requested in this resource consent. The following is a brief overview of the compliance with the consent conditions:

Resource Consent Condition	Compliant/Non-Compliant/Not Applicable
4	Non-Compliant
7	Compliant
8	Compliant
9	Compliant
9A	Compliant
10	Compliant
12	Compliant
12(A)	Compliant
12(C)	Compliant
12(D)	Non-Compliant
14	Compliant
15	Compliant
16	Compliant
35A	Compliant

Table 1: WGN200229 [36816] Resource Consent Condition Compliance

WGN200229 [36727]

The Porirua WWTP is governed by the resource consent under the Greater Wellington Regional Council consent file number WGN200229 [36727]. In general, the consent allows the discharge of contaminants (odour) from the Porirua City Council's Wastewater Treatment Plant to the air at the or about map reference NZMS 260: R27;632.096. The report will cover the quarterly period from October to December 2023 as requested in this resource consent. The following is a brief overview of the compliance with the consent conditions:

Resource Consent Condition	Compliant/Non-Compliant/Not Applicable
5	Compliant
6	Compliant

Table 2: WGN200229 [36727] Resource Consent Condition Compliance

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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.

Wellington Water performed an assessment of the effluent flow meter and determined it was installed improperly. The flow measurements are inaccurate even after several calibrations. An assumption was made that the influent flow rate is equal to the effluent flow rate. Please note the flow rates highlighted in red are above the consented effluent discharge limits as stated in the resource consent. Because the inlet flow rate to the plant is dictated by the wastewater network, this is an excepted obligation. The effluent flow meter controller has been offline as there has been an electrical issue. Therefore no effluent readings are available for the month of December. Alternative solutions for the effluent flow readings are being investigated.

Below are the daily volumes of the inflow to and effluent from the Porirua WWTP:

Day	October 2023		November 2023		December 2023	
	Daily Volume		Daily Volume		Daily Volume	
	Inflow	Effluent	Inflow	Effluent	Inflow	Effluent
	m ³	m ³	m ³	m ³	m ³	m ³
1	27164	28055	22877	24302	19674	
2	23646	25216	20242	22833	19559	
3	21905	23580	22073	23777	31265	
4	21951	23460	22057	24315	19690	
5	22464	23454	22144	25411	20925	
6	29160	30148	24068	25885	21165	
7	34228	35277	22441	24589	20230	
8	27110	28202	22906	23959	20756	
9	24706	25434	21378	23406	21260	
10	25632	26832	21837	22348	23608	
11	21985	25079	21497	23572	22677	
12	21323	23913	21774	24730	23933	
13	20338	22816	23374	23270	20872	
14	24966	27929	22310	23143	21387	
15	25266	26211	24271	23478	18622	
16	25737	28438	22045	22878	37246	
17	28039	31060	25370	27260	62998	
18	23783	26705	24699	26508	23747	
19	22399	24622	26095	25304	23063	
20	21873	23455	22735	24121	21293	
21	21908	23165	21578	22975	19949	
22	20244	23048	21858	23119	18345	
23	23170	26143	19654	21689	20936	
24	32610	35551	24626	23791	25647	
25	25541	27295	24008	25311	20289	
26	23260	26081	26504	25787	21074	
27	21057	23965	23095	22980	19561	
28	24380	24868	22972	23715	23579	
29	23946	25492	21260	22734	22223	
30	22516	24529	23208	23472	20397	
31	21388	23760			19239	

Table 3. Daily volumes

Condition (7)

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.

Condition (8)

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.

The following is a summary of the sampling and testing required under Condition 8. Faecal coliform compliance has been assessed under Condition 35A.

Day	October 2023			November 2023			December 2023		
	Faecal Coliforms	Enterococci	UVT	Faecal Coliforms	Enterococci	UVT	Faecal Coliforms	Enterococci	UVT
	cfu/100mL	cfu/100mL	%	cfu/100mL	cfu/100mL	%	cfu/100mL	cfu/100mL	%
1	10	10	68.8	187	40	65.90	43	10	66.80
2	14	10	67.2	110	70	67.50	10	10	67.20
3	10	30	67.0	109	60	68.00	14	20	67.10
4	14	10	67.4	71	50	66.20	32	10	65.80
5	14	10	62.9	24	20	63.20	100	10	67.10
6	24	10	64.8	169	310	65.20	10	20	69.10
7	100	10	68.1	30	120	65.30	10	20	70.00
8	10	10	65.9	88	130	69.30	663	3200	67.30
9	14	10	65.4	79	560	68.10	10	10	66.70
10	200	10	66.8	332	70	67.70	24	10	67.10
11	14	10	65.3	22	10	65.30	17	20	66.50
12	14	10	64.8	14	10	63.80	22	10	67.40
13	17	20	63.0	173	10	63.50	16	10	66.50
14	20	10	67.6	42	10	65.00	20	10	68.10
15	14	10	65.3	41	10	65.50	10	10	67.40
16	14	10	65.5	95	10	65.70	10	10	66.20
17	40	30	62.8	38	10	65.10	10	10	67.90
18	24	20	70.2	55	10	67.30	10	10	67.00
19	71	10	68.2	10	20	66.20	10	10	66.60
20	65	10	67.5	49	30	63.70	10	10	66.10
21	10	6000	63.9	36	30	65.00	10	10	68.10
22	17	10	65.8	28	70	63.70	10	10	66.90
23	10	10	66.3	48	10	64.90	10	10	66.10
24	161	10	66.2	16	10	66.30	35	50	65.50
25	458	150	64.2	22	10	66.80	134	100	64.30
26	164	10	65.2	14	10	66.40	346	10	63.50
27	69	10	68.4	69	10	63.60	24	10	63.40
28	20	10	68.1	14	10	66.70	179	10	64.00
29	10	10	66.4	47	20	66.20	180	110	67.00
30	20	10	66.10	14	20	67.80	10	10	68.30
31	228	10	64.30	10	10	64.60	10	10	66.90
Limits	2000	–	-	2000	–	-	2000	–	-

Table 4. Daily Faecal coliform, Enterococci and UVT results

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.

Condition (9A)

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.

The following are the results of the sampling performed under Condition 9(A).

Day	October 2023	November 2023	December 2023
	Total Ammonia Nitrogen mg/L	Total Ammonia Nitrogen mg/L	Total Ammonia Nitrogen mg/L
1		0.43	
2			
3			
4	0.38		
5			
6			0.27
7			
8		0.63	
9			
10			
11	0.49		
12			
13			
14			0.71
15		0.19	
16			
17			
18	0.39		
19			
20			0.24
21			
22		0.63	
23			
24			
25	0.32		
26			
27			0.29
28			
29		0.2	
30			
31			
Limit	6 mg/L	6 mg/L	6 mg/L

Table 5. Weekly Total ammonia nitrogen

Total Ammonia Nitrogen weekly results did not exceed the 6 mg/L limit stated in Condition 33 during this reporting period.

Condition (10)

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.

The following are the results of the sampling performed under Condition 10.

October 2023				November 2023				December 2023			
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
13/10/2023	1300000	03/10/2023	29	15/11/2023	700000	07/11/2023	370	14/12/2023	1700000	05/12/2023	39
		10/10/2023	16			14/11/2023	10			12/12/2023	10
		17/10/2023	120			21/11/2023	270			19/12/2023	1400
		24/10/2023	49			28/11/2023	25			26/12/2023	10
		31/10/2023	10								

Table 6. Viral indicator testing

Condition (12)

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/m³ and no more than 10% of 90 consecutive daily values shall exceed 75 g/m³
- b. Biochemical oxygen demand –The geometric mean of 90 consecutive daily biological oxygen demand values shall not exceed 30 g/m³ and no more than 10% of 90 consecutive daily values shall exceed 75 g/m³

(i) Final Effluent Biochemical Oxygen Demand

Day	October 2023			November 2023			December 2023		
	Results	Geometric Mean	90th Percentile	Results	Geometric Mean	90th Percentile	Results	Geometric Mean	90th Percentile
	g/m ³	g/m ³	g/m ³	g/m ³	g/m ³	g/m ³	g/m ³	g/m ³	g/m ³
1	31	5	100	3	5	100	10	5	100
2	3	5	100	3	5	100	6	5	100
3	4	5	100	3	5	100	4	5	100
4	29	5	100	4	5	100	2	5	100
5	4	5	100	6	5	100	2	5	100
6	4	5	100	6	5	100	5	5	100
7	23	5	100	27	5	100	3	5	100
8	5	5	100	3	5	100	3	5	100
9	5	5	100	3	5	100	3	5	100
10	4	5	100	14	5	100	14	5	100
11	4	5	100	6	5	100	3	5	100
12	5	5	100	4	5	100	7	5	100
13	5	5	100	5	5	100	3	5	100
14	5	5	100	5	5	100	3	5	100
15	5	5	100	2	5	100	3	5	100
16	4	5	100	5	5	100	3	5	100
17	4	5	100	2	5	100	3	5	100
18	4	5	100	3	5	100	2	4	100
19	4	5	100	3	5	100	3	4	100
20	4	5	100	34	5	100	4	4	100
21	4	5	100	3	5	100	5	4	100
22	4	5	100	14	5	100	6	4	100
23	4	5	100	3	5	100	3	4	100
24	4	5	100	2	5	100	6	4	100
25	4	5	100	3	5	100	17	4	100
26	3	5	100	4	5	100	8	4	100
27	7	5	100	3	5	100	5	5	100
28	13	5	100	3	5	100	3	5	100
29	3	5	100	2	5	100	3	4	100
30	3	5	100	3	5	100	2	4	100
31	4	5	100	3	4	7	2	4	100
Limits	–	30	75	–	30	75	–	30	75

Table 7: BOD₅ Geometric Mean and Percent Compliance

Please note that analytical results highlighted in amber are above the 30g/m³ geometric mean limit. Analytical results highlighted in red are above the 75g/m³ percent compliance limit.

(ii) Final Effluent Suspended Solids

Day	October 2023			November 2023			December 2023		
	Results	Geometric Mean	90th Percentile	Results	Geometric Mean	90th Percentile	Results	Geometric Mean	90th Percentile
	g/m ³	g/m ³	g/m ³	g/m ³	g/m ³	g/m ³	g/m ³	g/m ³	g/m ³
1	66	6	99	6	7	99	8	7	99
2	6	6	99	6	7	99	5	7	99
3	6	6	99	6	7	99	5	7	99
4	39	7	99	6	7	99	5	7	99
5	6	7	99	6	7	99	6	7	99
6	6	7	99	12	7	99	6	7	100
7	27	7	99	37	7	99	6	7	100
8	6	7	99	6	7	99	5	7	100
9	6	7	99	6	7	99	6	7	100
10	6	7	99	21	7	99	10	7	100
11	6	7	99	6	7	99	5	7	100
12	6	7	99	6	7	99	11	7	100
13	7	7	99	6	7	99	6	7	100
14	6	7	99	6	7	99	6	7	100
15	6	7	99	6	7	99	6	7	100
16	6	7	99	6	7	99	6	7	100
17	6	7	99	6	7	99	6	7	100
18	6	7	99	7	7	99	6	7	100
19	6	7	99	6	7	99	6	7	100
20	6	7	99	30	7	99	6	7	100
21	6	7	99	6	7	99	5	7	100
22	6	7	99	13	7	99	6	7	100
23	6	7	99	5	7	99	6	7	100
24	6	7	99	4	7	99	6	7	100
25	6	7	99	5	7	99	7	7	100
26	6	7	99	5	7	99	6	7	100
27	7	7	99	6	7	99	5	7	100
28	20	7	99	6	7	99	6	7	100
29	6	7	99	6	7	99	5	7	100
30	6	7	99	6	7	99	6	7	100
31	6	7	99	6	6	7	7	7	100
Limits	–	30	75	–	30	75	–	30	75

Table 8: Suspended Solid Geometric Mean and Percent Compliance

Please note that analytical results highlighted in amber are above the 30g/m³ geometric mean limit. Analytical results highlighted in red are above the 75g/m³ percent compliance limit.

Condition (12A)

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/m³
- b. Total Cadmium 0.055 g/m³
- c. Total Chromium 0.044 g/m³
- d. Total Copper 0.013 g/m³
- e. Total Nickel 0.07 g/m³
- f. Total Lead 0.044 g/m³
- g. Total Zinc 0.08 g/m³
- h. Total Mercury 0.001 g/m³
- i. Phenol 2.7 g/m³

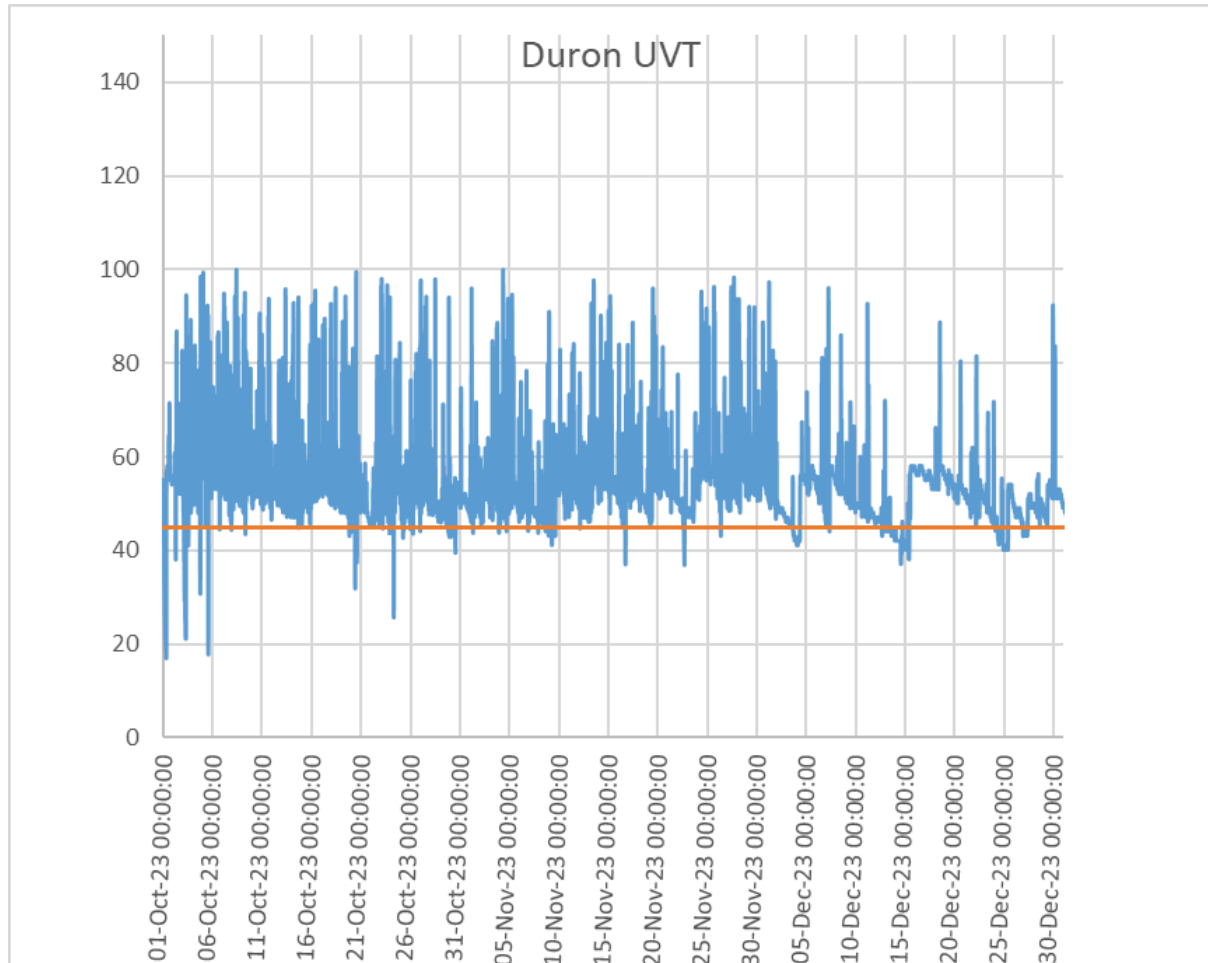
Compound	Units	Limit	October 2023	November 2023	December 2023
Total Arsenic	g/m ³	0.023	0.002	0.002	0.002
Total Cadmium	g/m ³	0.055	0.001	0.001	0.001
Total Chromium	g/m ³	0.044	0.002	0.001	0.006
Total Copper	g/m ³	0.013	0.002	0.002	0.004
Total Nickel	g/m ³	0.07	0.026	0.001	0.014
Total Lead	g/m ³	0.044	0.001	0.001	0.001
Total Zinc	g/m ³	0.08	0.001	0.014	0.001
Total Mercury	g/m ³	0.001	0.001	0.001	0.001
Phenol	g/m ³	2.7	0.010	0.010	0.010
Nitrate Nitrogen	g/m ³	-	0.41	2.15	0.05
Nitrite Nitrogen	g/m ³	-	0.08	0.03	0.01
Dissolved Reactive Phosphorus	g/m ³	-	1.83	2.18	2.11
Total Nitrogen	g/m ³	-	1.97	2.29	2.02
Total Phosphorus	g/m ³	-	2.3	2.38	2.33

Table 9. Monthly heavy metals

Condition (12C)

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.

The graph below summarises the UVT hourly average.



It has been noticed that the UVT readings are not reliable and have fluctuated significantly since the 19th of September. The instrument supplier was on-site investigating, and they have recommended some improvements such as moving the UVT probe from the UV channel to the pre-UV channel, and installing the instrument in a horizontal position which might provide a more representative reading. Investigation report was prepared and submitted to Wellington Water on 25th of October. Adjustments as per recommendations are ongoing.

Condition (12D)

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 hourly average is non-compliant as it fluctuates to below 45% limit during this reporting period due to the current issues with the meter as mentioned in Condition 12(C).

Condition (14)

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:

- At or about 140 metres generally east of the outfall.
- At or about 200 metres generally southwest of the outfall.
- Titahi Bay Beach generally at Toms Road.
- 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.

The following is a summary of the monthly shoreline monitoring performed as part of resource consent WGN200229 [36816], Condition 14,

140m generally eastwards of the outfall

Date	Enterococci	pH	Salinity	Dissolved Oxygen	Temp.	Wind Direction	Wind Strength	Tide	Sea Conditions
dd/mm/yyyy	cfu/100mL	-	g/m3	g/m3	C	--	--	--	--
13/10/2023	20	8.36	35	10.59	14.2	S	Moderate	High	Flood
15/11/2023	10	8.19	35	10.19	15.9	N	Light	Mid	Flood
05/12/2023	10	8.29	35	12.85	15	S	Light	Low	Flood

Table 4: Shoreline Monitoring

Date	Total Ammonia Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Reactive Phosphorus	Total Nitrogen	Total Phosphorus
dd/mm/yyyy	g/m3	g/m3	g/m3	g/m3	g/m3	g/m3
13/10/2023	0.01	0.1	0.1	0.012	0.210	0.1
15/11/2023	0.59	0.1	0.0.1	0.076	1.13	0.048
05/12/2023	0.03	0.01	0.1	0.012	0.610	0.05

200m generally southwestwards of the outfall

Date	Enterococci	pH	Salinity	Dissolved Oxygen	Temp.	Wind Direction	Wind Strength	Tide	Sea Conditions
dd/mm/yyyy	cfu/100mL	-	g/m3	g/m3	C	--	--	--	--
13/10/2023	50	8.3	34	10.54	14.5	S	Moderate	High	Flood
15/11/2023	10	8.32	35	10.22	16.1	N	Light	Mid	Flood
05/12/2023	10	8.31	35	12.19	15.8	S	Light	Low	Flood

Table 4: Shoreline Monitoring

Date	Total Ammonia Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Reactive Phosphorus	Total Nitrogen	Total Phosphorus
dd/mm/yyyy	g/m3	g/m3	g/m3	g/m3	g/m3	g/m3
13/10/2023	0.01	0.1	0.1	0.054	0.2	0.1
15/11/2023	0.02	0.1	0.01	0.033	0.610	0.051
05/12/2023	0.01	0.01	0.01	0.020	0.520	0.024

Titahi Bay Beach At Toms Road - Surf Club

Date	Enterococci	pH	Salinity	Dissolved Oxygen	Temp.	Wind Direction	Wind Strength	Tide	Sea Conditions
dd/mm/yyyy	cfu/100mL	-	g/m3	g/m3	C	--	--	--	--
13/10/2023	10	8.31	35	10.5	14.9	S	Moderate	High	Flood
15/11/2023	10	8.21	36	10.25	15.7	N	Light	High	Flood
05/12/2023	10	8.24	35	12.71	15.8	S	Light	Low	Flood

Table 4: Shoreline Monitoring

Control

Date	Enterococci	pH	Salinity	Dissolved Oxygen	Temp.	Wind Direction	Wind Strength	Tide	Sea Conditions
dd/mm/yyyy	cfu/100mL	-	g/m3	g/m3	C	--	--	--	--
13/10/2023	10	8.32	34	10.59	14.8	S	Moderate	High	Ebb
15/11/2023	10	8.41	35	10.61	16.4	N	Light	High	Flood
05/12/2023	10	8.29	35	12.5	16.1	S	Light	Low	Flood

Table 4: Shoreline Monitoring

Date	Total Ammonia Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Reactive Phosphorus	Total Nitrogen	Total Phosphorus
dd/mm/yyyy	g/m3	g/m3	g/m3	g/m3	g/m3	g/m3
13/10/2023	0.01	0.1	0.1	0.008	0.2	0.1
15/11/2023	0.01	0.1	0.1	0.007	0.560	0.025
05/12/2023	0.01	0.01	0.01	0.009	0.5	0.050

Table 22: Shoreline Monitoring

Condition (15)

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 phosphorus.

All monitoring performed for the condition has been provided in the previous sections of this report under Condition 14.

Condition (16)

16. In the event of an incident notified under condition 22A and / or a discharge of partially treated wastewater, the consent holder shall:

- 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.
- 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.
- Analyse the samples in accordance with condition 15.
- Assess compliance with condition 13.

The following is a summary of the discharge events that occurred at the Porirua WWTP during this reporting period. Notifications regarding discharge events were sent to GWRC. The sample results for both events are shown below:

Date	Duration	Type of Discharge	Average Flow	Peak Flow	Total Volume of Discharge	Consented	Cause	Monitoring Results
dd mmm yyyy	Hrs mins	----	L/s	L/s	m ³	Y/N		
9/11/2023	00:30	Undisinfected effluent	373	476	695	N	Power outage	Notification submitted. Shoreline monitoring initiated.
8/12/2023	01:22	Undisinfected effluent	200	779	864	N	Power outage	Notification submitted. Shoreline monitoring initiated.

Table 28: Discharge events

140m generally eastwards of the outfall

Date	Enterococci	pH	Salinity	Dissolved Oxygen	Temp.	Wind Direction	Wind Strength	Tide	Sea Conditions
dd/mm/yyyy	cfu/100mL	-	g/m3	g/m3	C	--	--	--	--
09/11/2023	10	8.2	36	10.91	15.3	S	Mid	Low	Ebb
10/11/2023	10	8.5	36	16.67	15.4	S	Mid	High	Ebb
11/11/2023	10	8.0	35	10.31	13.4	N	Light	High	Ebb
08/12/2023	10	8.27	33	12.3	19.6	SW	Light	Low	Ebb
09/12/2023	10	8.17	31	10.43	17.7	N	Light	High	Ebb
10/12/2023	10	8.03	34	10	16.9	N	Strong	High	Flood

Table 4: Shoreline Monitoring

Date	Total Ammonia Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Reactive Phosphorus	Total Nitrogen	Total Phosphorus
dd/mm/yyyy	g/m3	g/m3	g/m3	g/m3	g/m3	g/m3
09/11/2023	0.060	0.01	0.01	0.005	0.31	0.019
10/11/2023	0.040	0.01	0.01	0.005	0.53	0.014
11/11/2023	0.130	0.10	0.10	0.005	0.66	0.047
08/12/2023	0.110	0.10	0.1	0.1240	0.38	0.151
09/12/2023	0.080	0.10	0.1	0.2230	0.50	0.250
10/12/2023	0.160	0.10	0.1	0.0170	0.55	0.076

200m generally southwestwards of the outfall

Date	Enterococci	pH	Salinity	Dissolve d Oxygen	Temp.	Wind Direction	Wind Strength	Tide	Sea Conditions
dd/mm/yyyy	cfu/100mL	-	g/m3	g/m3	C	--	--	--	--
09/11/2023	20	8.0	35	9.41	16.5	S	Mid	Low	Ebb
10/11/2023	10	8.3	35	12.78	16.4	S	Mid	High	Ebb
11/11/2023	10	8.1	35	10.40	13.8	N	Light	High	Ebb
08/12/2023	10	8.31	33	13.9	19.8	SW	Light	Low	Ebb
09/12/2023	10	8.21	31	10.6	17.6	N	Light	High	Ebb
10/12/2023	10	8.1	34	9.9	17.0	N	Strong	High	Ebb

Table 5: Shoreline Monitoring

Date	Total Ammonia Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Reactive Phosphorus	Total Nitrogen	Total Phosphorus
dd/mm/yyyy	g/m3	g/m3	g/m3	g/m3	g/m3	g/m3
09/11/2023	0.04	0.01	0.01	0.067	0.36	0.093
10/11/2023	0.05	0.10	0.01	0.044	0.79	0.081
11/11/2023	0.07	0.10	0.10	0.044	0.56	0.077
08/12/2023	0.03	0.10	0.1	0.147	0.24	0.050
09/12/2023	0.07	0.10	0.1	0.227	0.42	0.248
10/12/2023	0.05	0.10	0.1	0.011	0.26	0.050

Titahi Bay Beach At Toms Road - Surf Club

Date	Enterococci	pH	Salinity	Dissolve d Oxygen	Temp.	Wind Direction	Wind Strength	Tide	Sea Conditions
dd/mm/yyyy	cfu/100mL	-	g/m3	g/m3	C	--	--	--	--
09/11/2023	10	8.2	35	11.22	15.8	S	Mid	Low	Ebb
10/11/2023	10	8.3	36	13.22	15.4	S	Mid	High	Ebb
11/11/2023	10	8.1	35	10.41	13.8	N	Light	High	Ebb
08/12/2023	10	8.18	35	9.57	20.7	SW	Light	Low	Flood
09/12/2023	10	8.19	34	9.86	17.9	N	Light	High	Ebb
10/12/2023	10	8.01	34	9.97	16.9	N	Strong	High	Flood

Table 6: Shoreline Monitoring

Control

Date	Enterococci	pH	Salinity	Dissolve d Oxygen	Temp.	Wind Direction	Wind Strength	Tide	Sea Conditions
dd/mm/yyyy	cfu/100mL	-	g/m3	g/m3	C	--	--	--	--
09/11/2023	10	8.5	36	13.34	16.8	S	Mid	Low	Ebb
10/11/2023	10	8.3	36	12.73	15.7	S	Mid	High	Ebb
11/11/2023	10	8.2	35	10.43	13.7	N	Light	High	Ebb
08/12/2023	90	8.01	35	13.65	19.6	SW	Light	Low	Ebb
09/12/2023	10	8.1	34	10.27	18.2	N	Light	High	Ebb
10/12/2023	20	8.13	34	9.85	16.9	N	Strong	High	Ebb

Table 10: Shoreline Monitoring

Date	Total Ammonia Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Reactive Phosphorus	Total Nitrogen	Total Phosphorus
dd/mm/yyyy	g/m3	g/m3	g/m3	g/m3	g/m3	g/m3
09/11/2023	0.02	0.01	0.01	0.008	0.27	0.019
10/11/2023	0.02	0.10	0.01	0.007	0.85	0.036
11/11/2023	0.01	0.10	0.10	0.007	0.34	0.021
08/12/2023	0.01	0.10	0.1	0.006	0.25	0.050
09/12/2023	0.01	0.10	0.1	0.006	0.61	0.050
10/12/2023	0.01	0.10	0.1	0.005	0.41	0.050

Please note that the enterococci and faecal coliforms for the shoreline monitoring samples were analysed by the contract laboratory. Please note that bathing beach guidelines were used to generate the colouring for the Enterococci samples. Because there are no bathing beach guidelines for faecal coliforms, fresh water guidelines were applied. The following are the limits for both bacterial species:

Bacterial Species	Amber Limit	Red Limit
	cfu/100mL	cfu/100mL
Enterococci	140	280
Faecal Coliforms	260	550

Condition (35A)

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.

The faecal coliform results reported under Condition 8 did not exceed 2,000 cfu per 100 millilitres on 2 or more consecutive days during this reporting period.

Condition 5

5. The consent holder shall keep a record of any complaints received. The complaints will be forwarded to the Manager within twenty-four hours of the complaint being received by the consent holder. The consent holder shall record:
- The complainant's name (if provided).
 - The location of the odour incident.
 - The time of the odour incident.
 - The wind direction and speed.
 - The plant operating conditions at the time of the complaint.

There was 1 odour complaint received for October to December 2023 reporting period.

Date	Complaints	Details	Actions Taken	Notification
05/11/2023	Odour Complaint	Odour complaint received by resident on Sunday evening..	The fan was turned off	Notification was not required as the odour complaint came though GWRC. No odour survey done because of the weekend
14/12/2023	Odour Complaint	Odour complaint received by resident on Sunday evening..	WWL personnel talked to the resident	Notifications sent.
15/12/2023	Odour Complaint	Odour complaint received by resident on Sunday evening..	Removed residual sludge from the step screen area and deodoriser was placed around the building.	Notifications sent.

Condition 6

6. Any incident that may cause or has caused adverse effects on the environment at or beyond the site boundary shall be notified to the Manager within twenty-four hours. This includes any incidents that result in complaints. A written report detailing the reasons for the incident, measures to mitigate the incident and measures to prevent recurrence shall be forwarded to the Manager within seven working days.

There were no incidents resulting in complaints during the October to December 2023 reporting period.

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