

Owhanake Wastewater Treatment Plant
2025-2026 Annual Report

Final - September 2026

Watercare

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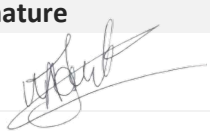
1	08/09/2026	Michiel Jonker	Environmental Care Manager	
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CONSENT CHANGE AND MONITORING HISTORY

Change type	Description	Effective date	Reference / condition	Reporting / monitoring implications
Management plan update	Operations and Management Plan updated to reflect processes for plant B.	Feb 2020	25	N/A
Management plan update	Air Quality Management Plan updated.	Jul 2024	13	N/A

LIST OF ACRONYMS AND ABBREVIATIONS

Abbreviation	Definition
AC	Auckland Council
ANZG	Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2018)
APT	Additional Primary Treatment
AT	Auckland Transport
AUP	Auckland Unitary Plan
BOD	Biochemical Oxygen Demand
AGWR	Australian Guidelines for Water Recycling
cBOD5	Carbonaceous Biochemical Oxygen Demand (5-day)
CFU	Colony Forming Units
DGV	Default Guideline Value
DO	Dissolved Oxygen
DRP	Dissolved Reactive Phosphorus
I&I	Inflow and Infiltration
FENZ	Fire & Emergency New Zealand
LTV	Long Term Trigger Value
MAV	Maximum Acceptable Value
MBR	Membrane Bioreactor
MLSS	Mixed Liquor Suspended Solids
N	Nitrogen
NHx-N	Ammoniacal Nitrogen
NZDWS	New Zealand Drinking Water Standards
O&G	Oil and Grease
pH	Potential of Hydrogen (measure of acidity/alkalinity)
RMA	Resource Management Act 1991
SS / TSS	Suspended Solids / Total Suspended Solids
STV	Short Term Trigger Value
TN	Total Nitrogen
TP	Total Phosphorus
UV	Ultraviolet Disinfection
WWTP	Wastewater Treatment Plant

EXECUTIVE SUMMARY

This 2025-2026 Annual Report provides an overview of the operations, performance, and compliance of the Owhanake Wastewater Treatment Plant (WWTP) located on Waiheke Island. The reporting period covers 1 July 2025 to 30 June 2026. The Owhanake WWTP is operated by Watercare and discharges treated wastewater into the Matiatia wetland before it flows into Matiatia Bay. The plant has operated under the terms of resource consents for both water discharge and air discharge, with the most recent consent-related compliance assessments documented in this report.

Key highlights from the reporting year include:

- Plant operations: The plant remained consistent with no major operational changes in 2025-2026.
- The plant did not accept any new trade waste connections during the reporting period.
- Effluent volumes: The plant discharged a total of 14,877 m^3 of effluent between July 2025 and June 2026, at an average daily discharge of 40.76 m^3. These volumes are similar to the previous reporting period and well within the consented limit of 250 m^3/day.
- The Matiatia Wharf flow meter experienced telemetry issues between 23 October 2025 and 19 February 2026 related to the removal of the 3G network; and a further battery issue in April 2026. This meant that daily volumes for these periods could not be obtained. Individual daily volumes for Matiatia and Oneroa Pump Station (commercial area) for both periods were estimated based on total plant inflow and historical contributions from both sources.
- Effluent quality: The Owhanake WWTP complied with most consented effluent limits, except for two ammoniacal-N results (1 and 8 July 2025) and one total nitrogen result (1 July 2025). These exceedances were connected to the treatment performance issues that commenced in June 2025 and were reported in the 2024–2025 Annual Report. Treatment performance subsequently recovered, with no further effluent quality exceedances recorded during the reporting period.
- Receiving environment - Water quality: Monthly monitoring of the receiving waters in the tributaries and wetlands downstream of the discharge showed nutrients were generally elevated at the discharge point, however, other parameters were more variable throughout the wetland.
- Receiving environment – sediment quality: Results of annual sediment quality testing for metals were all below default guideline values, including lead, which had been elevated in previous years' sampling.
- Effluent reuse: Watercare continued to explore options for the beneficial reuse of treated wastewater. Targeted sampling was undertaken to improve understanding of effluent quality. No practical options have yet been identified.
- Air quality: The WWTP complied fully with its air discharge consent, and no objectionable odours or air quality issues were reported during the period.
- Complaints and incidents: No complaints or significant incidents were reported regarding the operation of the plant.

Overall, the Owhanake WWTP was assessed as Category 2 for the 2025–2026 reporting period. Non-compliances comprised exceedances of the ammoniacal nitrogen and total nitrogen limits, together with a period of incomplete automatic influent flow recording associated with telemetry and equipment failures, summarised above. Evidence suggests little to no widespread impacts in the receiving environment, indicating no more than minor effects.

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1 INTRODUCTION

The Owhanake Wastewater Treatment Plant (WWTP) is located on Waiheke Island and provides wastewater treatment for the Oneroa and Matiatia catchments. This annual report presents the results for the Owhanake WWTP from 1 July 2025 to 30 June 2026. The report includes:

- A description of the WWTP
- Relevant consents and management plants
- Plant performance
- Summary of compliance.

Table 1-1 lists the active consents for the Owhanake WWTP. Watercare moved to "Plant B" conditions under the discharge to water consent in January 2020.

Table 1-1: Owhanake WWTP resource consents

Consent type	Consent number	Expiration date
Water discharge permit	37282	31/12/2027*
Air discharge permit	DIS60341182	21/08/2054

* Under the Taumata Arowai Wastewater Standards, WWTPs with consents that expire between 27 August 2025 and 27 August 2028 ('extant consents') are automatically extended to 27 August 2028 to give operators time to plan upgrades and apply for new consents.

2 OPERATIONAL DETAILS

2.1 Current operations

The WWTP is located at 61 Ocean View Road, Waiheke Island. Tertiary treated effluent discharges into a constructed wetland, then the natural Matiatia wetland before draining into Matiatia Bay. The treatment plant comprises:

- A primary tank (APT) fitted with 4 Zoeller effluent filters (0.78 mm)
- Two reticulation tanks for stormflow buffering with feed pumps
- UV disinfection
- One MBR plant (plant B) with two containers.

Plant B, the membrane bioreactor (MBR) plant, has:

- Fine screen compactor
- Anoxic tank 1
- Aeration tank
- Anoxic tank 2
- Membrane tank
- Waste Activated Sludge (WAS) tanks
- Dosing of the following chemicals: acetic acid (denitrification), aluminium sulphate (phosphorus removal), soda ash solution (pH control)

2.2 Changes in this reporting year

4.3 There have been no upgrades to the WWTP during the reporting period.

2.3 Future changes

An electrical and control system upgrade is currently in the feasibility stage. This upgrade will improve the electrical and control system's resilience.

Future upgrade needs have been identified for the Owhanake WWTP. Funding for these has not yet been confirmed, and as a result, their delivery timeframes remain to be determined. The currently identified future upgrade needs include:

1. Buffer Storage Expansion
2. UV System Buffer Storage
3. Access Road Upgrade

3 METHODOLOGY

3.1 Monitoring

Monitoring was carried out in accordance with the specific conditions of the consents and the approved Management Plans, including:

- Influent monitoring (Condition 29(a)): Monthly grab samples of the primary treated influent were collected and analysed. Parameters included pH, temperature, conductivity, dissolved oxygen (DO), carbonaceous biochemical oxygen demand ($cBOD_5$), total suspended solids (TSS), total nitrogen (TN), ammoniacal nitrogen (NHx-N), nitrate (NO_3-N), nitrite (NO_2-N), total phosphorus (TP), dissolved reactive phosphorus (DRP), and oil and grease (O&G). Although there are no numeric limits for influent, these results provide context for assessing plant performance.
- Effluent monitoring (Conditions 34–36): Weekly grab samples of final treated effluent were collected immediately prior to discharge to the constructed wetland (site S11, post-UV). Parameters included pH, temperature, DO, $cBOD_5$, TSS, TN, NHx-N, NO_3-N, NO_2-N, TP, DRP, O&G, and *Escherichia coli (E. coli). E. coli* was sampled weekly in summer and fortnightly in winter, with a consented limit of ≤50 cfu/100 mL post-UV disinfection.
- Flow monitoring: Continuous measurement of influent and effluent volumes using calibrated flow meters, in line with Condition 27 of the discharge permit.
- Effluent loading: Statistical analysis of effluent quality trends (2020–2026) was undertaken for this report using Mann–Kendall and Wilcoxon tests to identify temporal and seasonal trends.
- Receiving environment: Monthly grab samples from six stream and wetland monitoring sites (S1–S7) downstream of the discharge, tested for nutrients, $cBOD_5$, suspended solids, and microbiological parameters. Receiving environment data were also compared against upstream control sites to evaluate the relative contribution of WWTP discharges versus other catchment inputs.
- Sediment monitoring: Annual surficial sediment sampling 10 m downstream of the outfall for dissolved and total recoverable trace metals (Condition 29(c)(iv)).
- Air quality: Weekly site walkovers, odour checks at the boundary, and inspection of odour control systems in line with Conditions 4–6 of the air discharge permit.

3.2 Data handling and analysis

Operational data were extracted from internal monitoring databases, rainfall data was accessed via the Auckland Council environmental data portal. See Appendix C and D for sampling locations and data download information.

Statistical analysis of effluent loading parameters was completed in R.

3.3 Compliance criteria

Watercare assesses compliance with the consent using the same compliance rating system utilised by Auckland Council (

Table 3-1).

The assessment of the WWTP performance considers:

- Results of compliance monitoring
- Recorded incidents and complaints

- Receiving environment monitoring results

Table 3-1: Compliance assessment criteria

Rating	Detail
Category 1	Watercare has complied with the consent condition. Where a resource consent condition refers to a provision in a Management Plan, then the plan has been referred to in assessing consent compliance.
Category 2	Watercare has not complied with the consent condition. Watercare has assessed the non-compliance as technical or having no more than minor adverse effect.
Category 3	Watercare has not complied with the consent condition. Watercare has assessed the non-compliance having the potential to result in more than minor adverse effects on the environment. Alternatively, since the last audit, there is evidence of repeat Category 2 non-compliance.
Category 4	Watercare has not complied with the consent condition. Watercare has assessed the non-compliance as having the potential to cause significant adverse effects on the environment. Alternatively, since the last audit, there is evidence of repeat Category 3 non-compliance.

4 RESULTS

4.1 Influent and effluent volumes

Figure 4-1 shows the daily wastewater flow into the WWTP (total, as well as individual commercial area and Matiatia toilets sources) as well as rainfall for 2025-2026. Total plant inflow for the reporting period is 15,761 m^3, with an average daily plant inflow of 43.18 m^3. This is an increase from the 2024-2025 reporting period, mainly attributed to higher inflow and infiltration associated with increased annual rainfall: total rainfall for 2025-2026 was 1,466 mm, compared with 1,049 mm in 2024-2025.

Condition 27 of Discharge Permit 37282 requires individual inflow volumes be measured for the Matiatia Wharf and the Commercial (Oneroa) pump station. A flow meter located at the wharf is owned by Auckland Transport and provides daily volumes. Between 23 October 2025 and 19 February 2026, technical issues as the Matiatia flow meter related to the removal of the 3G network (over which data is telemetered) meant that daily volumes for this period could not be obtained. An upgrade to the telemetry system was required to resolve the issue. A further issue related to the telemetry system battery prevented obtaining daily volumes in April 2026. Individual daily volumes for both periods were estimated based on total plant inflow and historical contributions from both sources.

Figure 4-2 shows the daily effluent discharge and rainfall. Average daily discharge volume for 2025-2026 was 40.76 m^3, with an annual total of 14,877 m^3. These volumes are similar to 2024-2025, where the average flow was 38.66 m^3/day and the annual total was 14,110 m^3.

The average effluent flow during summer (November 2025 to April 2026 inclusive) was 47 m^3/day and during the winter period (July 2025 to October 2025, and May 2026 to June 2026, inclusive) was 35 m^3/day; which reflects the differing rainfall totals between summer months (~812 mm) and winter months (654 mm). Excluding the wet weather flow days (when rainfalls were >0.2 mm), the annual average dry weather effluent flow was 37 m^3/day, which is consistent with the previous period.

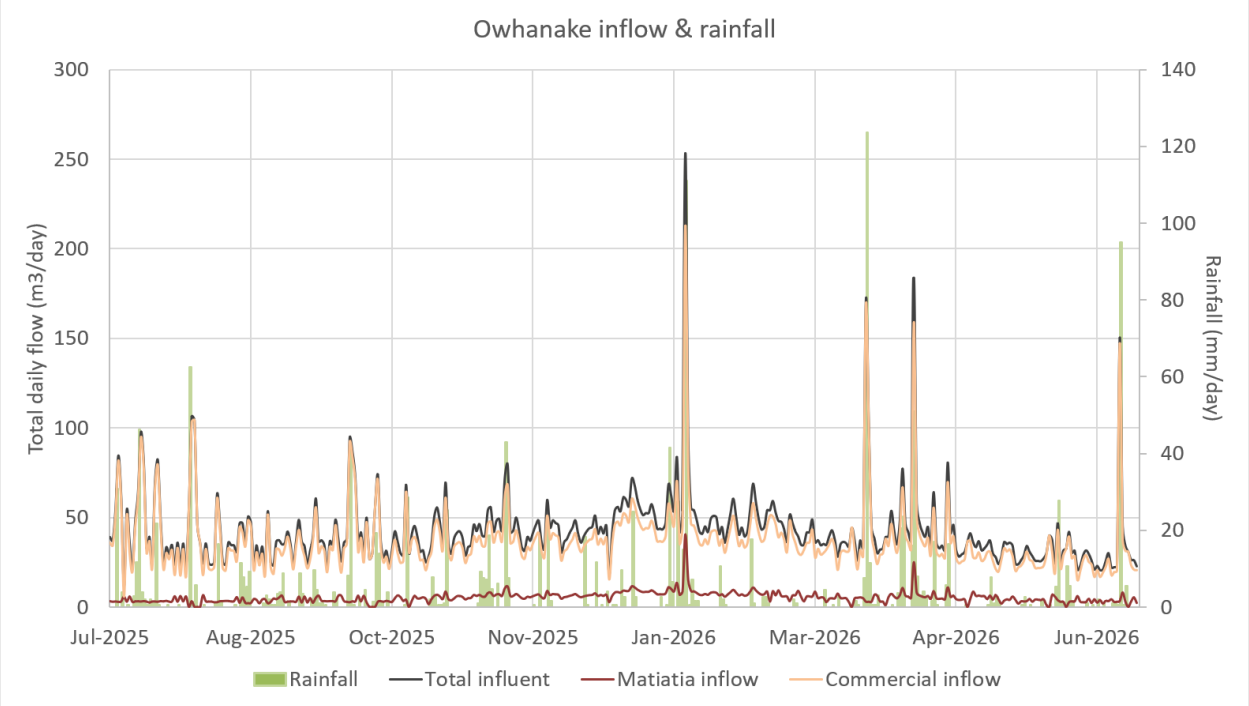

Figure 4-1: Owhanake wastewater inflows and rainfall (2025-2026).

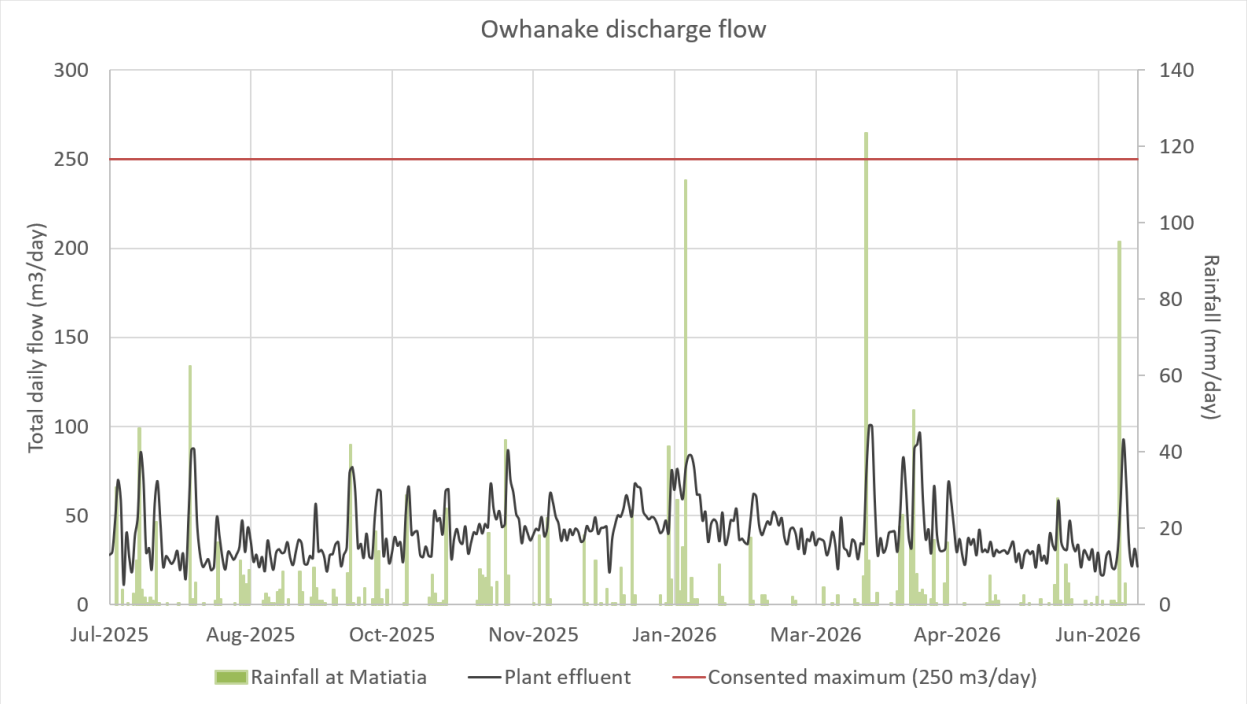

Figure 4-2: Owhanake WWTP effluent flow and rainfall (2025-2026).

4.2 Influent quality

Condition 29(a) requires sampling and testing of the primary treated influent to the WWTP. The influent is tested monthly, but the parameters have no numeric limits. Appendix A summarises monthly influent nutrient and contaminant loadings for the WWTP during the 2025–2026 reporting period. Daily mass loadings are calculated from measured concentrations and discharge volumes. Parameters include carbonaceous biochemical oxygen demand ($cBOD_5$), oil and grease (O&G), dissolved reactive phosphorus (DRP), total nitrogen (TN), ammoniacal nitrogen (NHX-N), total phosphorus (TP), and total suspended solids (TSS).

Overall, loadings for most parameters remained low and relatively stable throughout the year. Nitrogens and $cBOD_5$ loads were the most variable, with increases generally associated with periods of low rainfall; indicative of less I&I, and a more concentrated influent.

4.3 Effluent quality

The treated effluent is sampled weekly, immediately prior to the discharge into the natural wetland following the constructed wetland. *E. coli* is required to be sampled following the UV disinfection system (S11) prior to the constructed wetland weekly in summer and fortnightly in winter and must not exceed 50 cfu/100mL. Table 4-1 summarises the compliance results. Raw data is in appendix A.

During the 2025-2026 reporting period, post-disinfection *E. coli* samples were taken weekly. No exceedances at the UV disinfection monitoring point occurred during this period, and the results were typically below the detection limit. As such, the performance and effectiveness of the membranes and the UV disinfection unit is very high.

Auckland Council must be notified if *E. coli* in the wetland (S7) exceeds 126 cfu/100mL between December to March (inclusive). *E. coli* exceeded this threshold on 2 December 2025 and 3 February 2026. On both occasions there were no operational issues identified at the plant; *E. coli* at the UV treatment (S11), the last point of control at the WWTP, was less than detection limit on both days,

and consistently low in the weekly samples preceding these results. Therefore, the elevated *E. coli* at S7 is believed to be attributable to natural sources within the wetland. Auckland Council were notified via email of each event. Other elevated *E. coli* results occurred throughout the monitoring period, however, there is no trigger for notification of these results outside of December – March.

As reported in the 2024-2025 Annual Report, heavy rainfall during June 2025 resulted in high influent volumes and a significant drop in nutrient loading at the WWTP; affecting the nitrification process. Effects of this carried over into July 2025, with exceedances of the ammonia and total nitrogen consent limits on 1 July (ammonia: 24.0 mg/L and total nitrogen: 25.56 mg/L), and a further exceedance of the ammonia consent limit (11.0 mg/L) on 8 July 2025. This was resolved by reseeding, which occurred on 7 July 2025, and there were no further ammonia/TN exceedances throughout the 2025-2026 period.

4.3.1 Effluent quality trends

Effluent loads for key forms of nitrogen and phosphorus are summarised in Table 4-2. The average and maximum nutrient loading were lower than those observed in 2024-2025, and consistent with previous years. As discussed in the 2024-2025 Annual Report, results for the previous reporting period were influenced by a large number of elevated results.

As plant B was commissioned in 2020, more than five years of data has now been collected and is available for trend analysis. A Mann-Kendall test was undertaken for each parameter for the period 1 July 2020 to 30 June 2026. Statistical significance of each trend was assessed using the Mann-Kendall test, with p-values < 0.05 considered significant (Table 4-3). All four parameters showed statistically significant decreasing trends over the period (Figure 4-3).

Due to a number of elevated Nitrogen/Ammonia results in the last annual report period (July 2024 – June 2025) an additional Mann-Kendall test was run excluding all data from this period. Decreasing trends remained strongly significant for all parameters, confirming that the elevated results during this period did not drive the overall significance of the long-term trend.

Phosphorus loadings were particularly low and stable during 2025–2026, while nitrogen parameters continued to show greater short-term variability. This variability, including the elevated ammoniacal nitrogen and total nitrogen results following the June 2025 process disturbance, indicates that nitrogen removal remains more sensitive to operational upset. Overall, the longer-term results indicate improving nutrient treatment performance, while highlighting the importance of maintaining process stability to minimise short-duration nitrogen increases.

Seasonal differences in nutrient concentrations were assessed using a Wilcoxon rank-sum test, comparing summer (November–April) and winter (May–October) values for each parameter over the period 1 July 2020 to 30 June 2026. NH_X-N, DRP, and TP showed statistically significant differences between seasons ($p < 0.05$), with each parameter recording lower median concentrations in winter than in summer. TN did not show a statistically significant seasonal difference ($p = 0.074$).

Table 4-1: Effluent compliance summary (2025-2026)

Parameter	Units	n	Minimum	Average	Median	Maximum	Consented Standards	Compliant
Discharge Volume	m^3/day	365	11.54	40.76	36.80	100.81	250	Yes
E. coli (Post UV) (S11)	cfu/100mL	52	0.9	1.6	1.6	2	≤50	Yes
Dissolved Oxygen	mg/L	52	7.59	8.71	8.69	10.15	>5	Yes
pH		52	6.3	7.3	7.2	8.3	6.0 – 9.0	Yes
$cBOD_5$	mg O_2/L	52	0.5	0.94	0.69	3.0	<10	Yes
TSS	mg/L	52	1.0	2.3	1.8	10.0	<10	Yes
NH_x-N	mg/L	52	0.01	0.81	0.05	24.00	<2	No
Total Nitrogen	mg/L	52	0.33	1.69	0.72	25.56	<15	No
Dissolved Reactive Phosphorus	mg/L	52	0.12	0.25	0.24	0.58	-	-
Total Phosphorus (Nov – Apr)	mg/L	22	0.18	0.35	0.31	0.74	<2	Yes
Total Phosphorus (May – Oct)	mg/L	30	0.14	0.26	0.25	0.51	<4	Yes
E. coli (S7) (Dec – Mar)	cfu/100mL	52	1.6	337	21.5	11,000	<126	Yes*

Notes: Yellow cells show the consented standard, green indicates compliance, and red indicates non-compliance. Any day where the UV sample is not collected is due to low flows through the plant and not being able to collect a UV and Permeate sample.

**E. coli* source(s) are believed to be related to natural wetland processes – see Section 4.3.

Table 4-2: Effluent loading nutrients summary (2020-2026)

Parameter	Year	Minimum	Average	Median	Maximum
NH_x-N (kg/day)	**2020-21**	0.001	0.013	0.012	0.025
	2021-22	0.002	0.012	0.011	0.039
	2022-23	0.005	0.065	0.017	0.945
	2023-24	0.001	0.065	0.017	0.945
	2024-25	0.000	0.154	0.006	1.171
	2025-26	0.001	0.087	0.005	0.676
Total Nitrogen (kg/day)	**2020-21**	0.018	0.214	0.069	1.250
	2021-22	0.018	0.167	0.179	0.437
	2022-23	0.021	0.308	0.283	1.304
	2023-24	0.040	0.191	0.167	0.764
	2024-25	0.002	0.249	0.046	1.702
	2025-26	0.016	0.141	0.042	0.720
Dissolved Reactive Phosphorus (kg/day)	**2020-21**	0.001	0.042	0.042	0.110
	2021-22	0.000	0.015	0.011	0.067
	2022-23	0.000	0.016	0.013	0.066
	2023-24	0.000	0.016	0.013	0.066
	2024-25	0.000	0.026	0.020	0.162
	2025-26	0.005	0.008	0.008	0.014
Total Phosphorus (kg/day)	**2020-21**	0.001	0.047	0.044	0.129
	2021-22	0.006	0.017	0.011	0.084
	2022-23	0.001	0.019	0.016	0.074
	2023-24	0.001	0.019	0.016	0.074
	2024-25	0.002	0.034	0.027	0.197
	2025-26	0.006	0.009	0.009	0.015

Table 4-3: Effluent loading Mann-Kendall trend analysis for nutrient parameters (2020-2026)

Parameter	tau-value	p-value	Significant (p <0.05)
NH_X-N	-0.164	<0.001	Yes
TN	-0.180	<0.001	Yes
DRP	-0.186	<0.001	Yes
TP	-0.162	<0.001	Yes

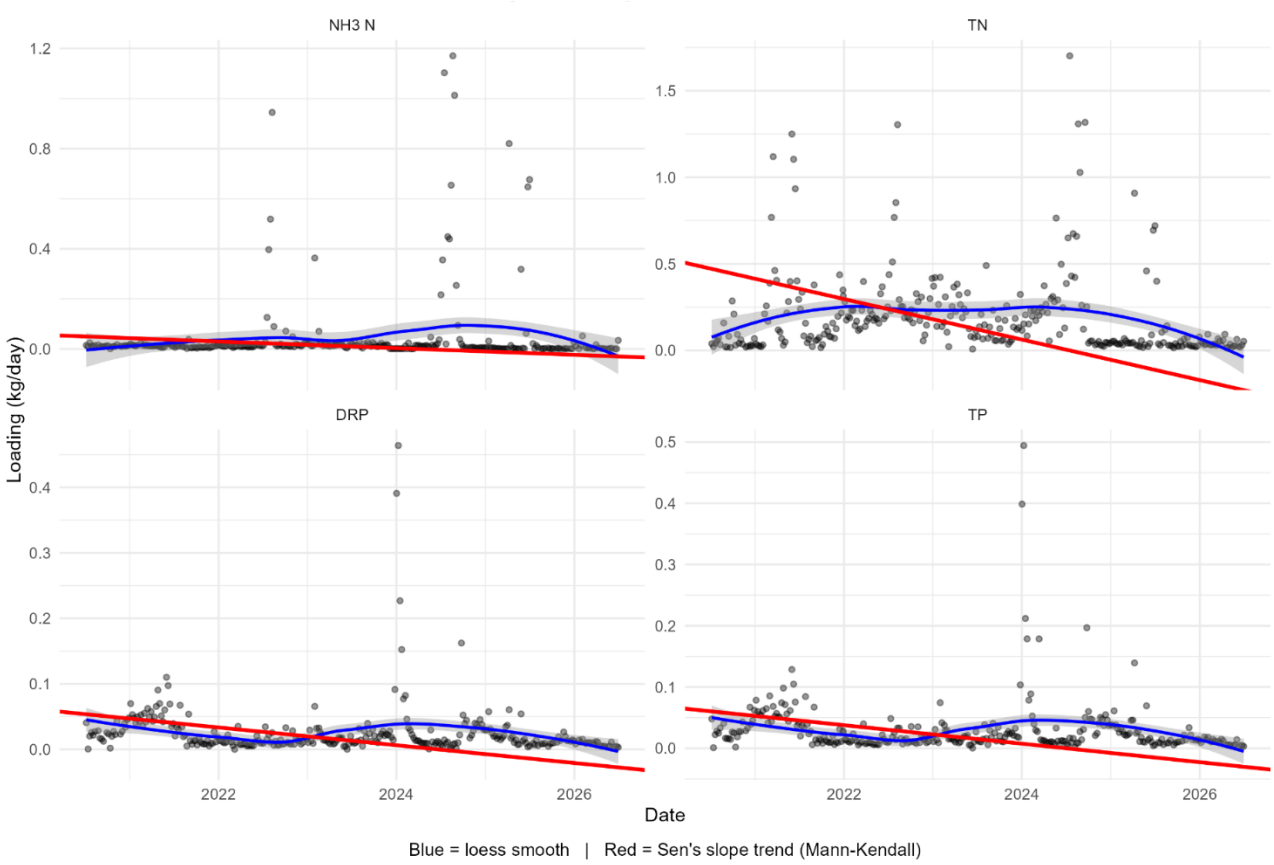

Figure 4-3; Effluent loading trends for ammonia, total nitrogen, dissolved reactive phosphorus and total phosphorus 2020 - 2026.

4.4 Receiving environment monitoring

4.4.1 Water quality

Condition 29(d) requires monthly sampling and testing of the receiving waters in tributaries, described in Table 4-4 and displayed on the map in Appendix C.

Table 4-4: Monitoring site locations

Site number	Site description	Coordinates
S1 (W1)	Control site. Puriri Tree Upstream Western Tributary	-36.779092, 174.999069
S7	Wetland Discharge (combined S1, S7, S3 and W6)	-36.779350, 174.999467
S2 (W2)	Downstream Western tributary (combined S1 and S7)	-36.780125, 175.000061
S3 (W3)	Control site. Upper Wetland Upstream Eastern Tributary	-36.780400, 175.000686
S4 (W4)	Stormwater Drain (grate) Downstream Main Tributary (combined S1, S7 and S3)	-36.781369, 174.999419
S6 (W5)	Matiatia Wetland (combined S1, S7, S2, S3 and S4)	-36.781697, 174.997817
S5	Beach outlet (combined S1, S7, S2, S3, S4 and S6)	-36.782527, 174.992659

Appendix A includes monthly monitoring results of receiving water in the tributaries that feed into Matiatia Bay. The monitoring also includes the drain to Matiatia Bay beach foreshore. On some occasions, sample results are not available due to low flows.

In assessing the impacts of plant discharge effluent quality at S7 (Wetland Discharge) on the receiving water environment, test results for each site were averaged and compared.

Table 4-5 shows the comparison, which indicates:

- The *E. coli* levels post UV were generally below the detection limit of 1.6 cfu/100mL.
- There are other contributing factors discharging along the stream flow path. The discharge from the UV disinfection (the last point of control) was consistently lower than the *E. coli* concentrations in the receiving environment; including control sites.
- Total suspended solid levels are variable throughout the wetland, and higher on average at the control and downstream sites than at the S7 wetland discharge point.
- Ammoniacal nitrogen concentration was highest on average at the S7 discharge point. The annual average was heavily influenced by the high results in July 2025 as discussed in Section 4.3. If these results are excluded, the average for August 2025-June 2026 (0.13 mg/L) is more consistent with downstream sites.
- Total nitrogen is highest at the effluent discharge point, however downstream results more closely resemble the water quality at the control sites (S1, S3)
- Dissolved reactive phosphorus is highest at the effluent discharge point; however, total phosphorus is variable throughout the catchment, but lower at the control sites.

Table 4-5: Annual mean water quality from sample control sites and locations downstream of the Owhanake WWTP

Parameter	Unit	S11	S7	S2	S4	S6	S5	S1 - Control	S3 - Control
		Post UV Tap	Wetland Discharge	Downstream Western tributary	Stormwater Drain (Gate) Downstream main tributary	Matiatia Wetland	Stream Beach Outlet	Puriri Tree Upstream Western tributary	Upper Wetland Upstream Eastern tributary
BOD	mg O_2/L	N/A	0.94	2.2	1.6	2.8	2.8	1.7	1.9
TSS	mg/L	N/A	2.3	31.6	36.5	83.9	9.9	12.8	39.3
NH_X-N	mg/L	N/A	0.81	0.034	0.024	0.114	0.114	0.040	0.029
TN	mg/L	N/A	1.69	1.07	0.80	1.16	0.74	0.92	0.88
TP	mg/L	N/A	0.29	0.20	0.39	0.44	0.44	0.10	0.15
DRP	mg/L	N/A	0.25	0.15	0.21	0.10	0.06	0.03	0.03
E. coli	cfu/100 mL	1.6	337.6	14173.3	10420.0	11615.8	11867.5	14564.5	10423.0

Note: All results are mean values. Raw data in Appendix A.

4.4.2 Sediment quality

Condition 29c(iv) requires that once Plant B has been commissioned, one sample per year of the surficial sediment in the unnamed tributary approximately 10 m downstream of the outfall structure shall be analysed for dissolved and total recoverable trace metals.

Sampling was undertaken on 11 August 2026; this is later than usual, and outside of the 2025-2026 annual reporting period, due to operational personnel changes. Nonetheless, the site continues to sample on an annual basis in accordance with consent requirements. Table 4-6 displays the results; results for all metals were below default ANZG (2018[1]) trigger values for sediment toxicity. Results below these trigger values indicate there is a low risk of unacceptable effects occurring within the aquatic ecosystem. It is noted lead has returned to below the trigger value, after exceedances in May 2024 and May 2025. Further annual monitoring will continue to identify any potential trends on this matter.

Table 4-6: Sediment results for 2026

Parameter	Units	Concentration	Default trigger value
Arsenic (Recoverable Dry Wt.)	mg/kg	13	20
Cadmium (Recoverable Dry Wt.)	mg/kg	0.14	1.5
Chromium (Recoverable Dry Wt.)	mg/kg	14	80
Copper (Recoverable Dry Wt.)	mg/kg	22	65
Lead (Recoverable Dry Wt.)	mg/kg	35	50
Mercury (Recoverable Dry Wt.)	mg/kg	0.067	0.15
Nickel (Recoverable Dry Wt.)	mg/kg	9.1	21
Zinc (Recoverable Dry Wt.)	mg/kg	120	200

4.5 Air quality

Throughout the monitoring period, all emissions were maintained at the minimum practicable level, and no assessments determined a noxious, dangerous, offensive or objectional effect from operations. Site walkovers were completed once per week and recorded in the log sheets, with no objectional odours at the boundary recorded.

No significant discharge to air occurred in the monitoring period. The WWTP was fully compliant with its air discharge consent requirements.

4.6 Complaints and incidents

There were no notable incidents at the Owhanake WWTP between July 2025 and June 2026. The WWTP did not receive any complaints related to its operation or maintenance, including air quality or odour.

[1] https://www.waterquality.gov.au/anz-guidelines/guideline-values/default/sediment-quality-toxicants

5 EFFLUENT REUSE INVESTIGATION

Condition 40 of Consent 37282 requires investigations into the beneficial non-potable reuse of the treated wastewater every two years. The plant currently reuses some effluent as part of onsite operations. Several options for further reuse were identified as opportunities through the 2023 Aurecon reuse report (provided with the 2022-2023 Owhanake WWTP annual report). Subsequent internal discussions as well as consultation with potential users and the Waiheke Local Board began to develop a scope for potential reuse options as well as identified limitations (as reported in the 2023-2024 and 2025-2025 Owhanake WWTP annual reports).

Initial feedback from the Waiheke Local Board in 2024 was that they were interested in options for reusing treated wastewater, with the preference that any reuse be for public benefit, rather than private use; or that private use provide a financial return.

Preliminary investigations through 2024-2025 focussed on effluent use for firefighting and roadworks, including discussions with Fire and Emergency New Zealand (FENZ) and Auckland Transport (AT). However, it was determined both options were not feasible due to constraints around the sufficiency of supply volume, and onsite storage and access limitations (FENZ); as well as supply costs (AT). Another option put forward by the local board was use in the toilet facilities at the Matiatia Wharf. This has not progressed as it would require substantial capital investment to establish separate, non-potable, reticulation between the plant and the wharf.

Irrigation of golf courses, or potentially vineyards, was a further option recommended in the Aurecon reuse report; however, this has been excluded to date based on the Waiheke Local Board's preference for public rather than private use, as well as the cost and practical limitations for storage and delivery to any irrigation site, as well as public health limitations.

The absence of national standards or guidelines in relation to effluent reuse creates a challenge for exploring solutions. Currently any proposed reuse would likely require resource consent as the discharge of treated wastewater from a WWTP is a discretionary activity under the AUP E6.4.1(A6). Table 5-1 provides a comparison of 2025-2026 effluent data against the more conservative limits of the Taumata Arowai wastewater standards for discharges to water[2] and land[3]. These comparisons are intended as a guideline only to the quality of effluent, and do not take into account dilution factors, specific soil profiles, or other factors relating to receiving environments and public health.

In addition to standard effluent parameter testing, extra testing for heavy metals and other parameters of particular concern was undertaken between August 2024 and May 2025. Whilst there are currently no water quality guidelines or limits in New Zealand in relation to reuse of treated wastewater from municipal facilities, results have been compared to other national water quality guidelines and limits, as well as the Australian Guidelines for Water Recycling (AGWR) – which were referred to in the Aurecon report – as a reference. A summary of results and guidelines is provided in Table 5-2, full results are in Appendix A. The parameters monitored were consistently below the guidelines and limits investigated, with the exception of copper and zinc which regularly exceeded 95% species protection ANZG freshwater guideline values but were below other guidelines/limits.

[2] https://www.taumataarowai.govt.nz/assets/Uploads/Wastewater/Discharge-to-Water-Guidance-FINAL.pdf#page=19

[3] https://www.taumataarowai.govt.nz/assets/Uploads/Wastewater/Discharge-to-Land-Guidance.pdf

It is noted this is a limited suite of analytes; for example, to date, no analysis has been undertaken for emerging contaminants of concern, herbicides, pesticides, etc., which would be important to consider when assessing potential effects of any reuse solution. Nonetheless, given the plant receives no trade waste influents, these contaminants are generally expected to be minimal.

Results of influent and effluent bacteriophage testing are presented in Table 5-3 below and show the plant achieved an average reduction of 5.7 log (or greater than 99.999%) over the monitoring period. Effluent phage concentrations were below the detection limit (<10 pfu/L) in 21 of 23 samples, meaning log reduction values were driven primarily by influent concentration rather than variation in treatment performance. This indicates the plant is consistently achieving a high level of virus treatment; however, a full quantitative public health risk assessment would likely be required for any reuse solution within areas accessible to the public.

As stated in the Waiheke Servicing Strategy (2024[4]), Watercare will continue to explore options for the beneficial reuse of treated wastewater. Whilst results indicate effluent quality consistently meets a high standard; current limitations around effluent volumes, as well as others outlined in the Aurecon 2023 reuse report, continue to restrict the practicality and economics of reuse on Waiheke Island.

Table 5-1: Comparison of 2025-2026 effluent data to Taumata Arowai standards for freshwater and irrigation.

Parameter	Statistic	Unit	Discharge to Water - Rivers and streams (very low dilution)	S7	S11 (post UV)
cBOD5	Median	mg/L	5	0.69	-
	90%ile	mg/L	10	2.17	-
TSS	Median	mg/L	5	1.8	-
	90%ile	mg/L	10	3.8	-
TN	Median	mg/L	4	0.72	-
TP	Median	mg/L	0.5	0.28	-
Ammonia	90%ile	mg/L	1	0.49	-
E. coli	90%ile	cfu/100ml	130	305	1.7
Parameter	**Statistic**	**Unit**	**Discharge to land - slow infiltration - Class 3**	**S7**	**S11 (post UV)**
TN	Loading	kg/ha/year	150	-	-
	Loading	kg/year	-	21.7	-
TP	Loading	kg/ha/year	30	-	-
	Loading	kg/year	-	4.5	-
E. coli	90%ile	cfu/100ml	< 1	305	1.7

Note: *E. coli* testing at S7 can be impacted by natural processes within the wetland. S11 (post-UV) is the last point of control at the plant and, therefore, provides an accurate reflection of effluent quality leaving the plant.

[4] https://assets.watercare.co.nz/media/waiheke_servicing_strategy_june_2024_25ee93bd3a.pdf

Table 5-2: Summary of additional effluent analysis for reuse investigation

Parameter	n	Unit	Lower range	Upper range	Mean	Median	NZDWS[5] MAV	ANZG[6] DGV (Fresh water 95% Species Protection level	AGWR[7] LTV	AGWR[7] STV
Aluminium	10	mg/L	0.05	0.12	0.0737	0.0665	1	0.055*	5.0	20
Arsenic	10	mg/L mg/L	0.00029	0.0013	0.000814	0.000805	0.01	0.024** 0.013***	0.1	2.0
Boron	10	mg/L	0.059	0.13	0.0958	0.093	2.4	0.94	0.5	0.5-15
Cadmium	10	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	0.004	0.0002	0.01	0.05
Chromium	10	mg/L	0.00054	0.0011	0.00077	0.00077	0.05	-	-	-
Cobalt	10	mg/L	0.0001	0.00049	0.000204	0.00019	-	0.0014****	0.05	0.1
Lead	10	mg/L	0.00011	0.00048	0.00025	0.00022	0.01	0.0034	2.0	5.0
Mercury	10	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	0.007	0.0006	0.002	0.002
Molybdenum	10	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	-	0.034****	0.01	0.05
Selenium	10	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	0.04	0.011	0.05	10
Calcium	10	mg/L	21	29	25.1	25.5	-	-	-	-
Copper	10	mg/L	0.0021	0.0089	0.00398	0.00325	2	0.0014	0.2	5.0
Magnesium	10	mg/L	5.1	12	7.49	7.1	-	-	-	-
Nickel	10	mg/L	0.001	0.0032	0.0021	0.00205	0.008	0.011	0.2	2.0
Sodium	10	mg/L	140	270	220	220	-	-	-	-
Zinc	10	mg/L	0.015	0.071	0.039	0.041	-	0.008	2.0	5.0
Sulphate	23	mg/L	41.6	252	123	131	-	-	-	-
Fluoride	9	mg/L	0.06	0.13	0.08	0.08	1.5	0.0017	1.0	2.0
TDS	23	mg/L	580	990	853	860	-	-	-	-
Turbidity	23	mg/L	0.1	160	7.1	0.15	-	-	-	-

* Aluminium Default Guideline Value for freshwater with pH >6.5

** Guideline for Arsenite (AsIII)

*** Guideline for Arsenate (AsV)

****Unknown species protection level

[5] https://www.legislation.govt.nz/secondary-legislation/pco-drafted/2022/168/en/latest/#LMS698043

[6] https://www.waterquality.gov.au/anz-guidelines/guideline-values/default

[7] https://www.waterquality.gov.au/sites/default/files/documents/water-recycling-guidelines-full-21.pdf

Table 5-3: Owhanake influent and effluent bacteriophage analysis

Sample Date	Units	Influent	Effluent	Log_{10} Reduction
20-Aug-24	pfu/L	1,700,000	<10	5.23
17-Sept-24	pfu/L	6,800,000	<10	5.83
5-Nov-24	pfu/L	9,400,000	<10	5.97
12-Nov-24	pfu/L	1,700,000	<10	5.23
19-Nov-24	pfu/L	5,100,000	<10	5.71
3-Dec-24	pfu/L	14,000,000	<10	6.15
17-Dec-24	pfu/L	11,000,000	<10	6.04
24-Dec-24	pfu/L	7,400,000	<10	5.87
31-Dec-24	pfu/L	2,200,000	10	5.34
7-Jan-25	pfu/L	1,300,000	10	5.11
14-Jan-25	pfu/L	76,000,000	<10	6.88
21-Jan-25	pfu/L	6,700,000	<10	5.83
28-Jan-25	pfu/L	6,900,000	<10	5.84
4-Feb-25	pfu/L	9,100,000	<10	5.96
11-Feb-25	pfu/L	3,500,000	<10	5.54
18-Feb-25	pfu/L	17,000,000	<10	6.23
25-Feb-25	pfu/L	33,000,000	<10	6.52
4-Mar-25	pfu/L	18,000,000	<10	6.26
11-Mar-25	pfu/L	4,900,000	<10	5.69
18-Mar-25	pfu/L	180,000	<10	4.26
25-Mar-25	pfu/L	6,600,000	<10	5.82
15-Apr-25	pfu/L	1,200,000	<10	5.08
20-May-25	pfu/L	1,800,000	<10	5.26

6 CONCLUSION

The 2025-2026 annual report for the Owhanake WWTP demonstrates that the plant has performed well, with effective wastewater treatment and compliance with most consent conditions. However, there were some operational challenges in July 2025 that resulted in exceedances for ammonia and total nitrogen; these were ongoing from the June 2025 exceedances that were reported in the 2024-2025 annual report. In addition, two summer (December – March) *E.coli* results exceeded the consent limit at S7; however, investigations found that these were unrelated to plant processes.

Telemetry issues at the Matiatia Wharf flow meter meant no daily volume records could be obtained between late October 2025 and mid-February 2026, as well as in April 2026. Therefore, individual volumes for the Matiatia toilets and Oneroa commercial area have had to be estimated for this period based on total plant inflow and historical proportions.

Monitoring of the receiving environment indicates that ammonia and total nitrogen were on average, higher at the discharge point; however, averages are heavily influenced by the high results in early July 2025. Nonetheless, downstream results more closely resemble the water quality at the control sites, indicating the increase is not widespread. Total phosphorus is variable throughout the catchment, but lower at the control sites. Other parameters, such as BOD, *E. coli*, and TSS, are higher on average at downstream and control sites compared to the discharge point. Results of annual sediment quality testing for metals were all below default guideline values, including lead, which had been elevated in previous years. Air discharge conditions were fully met, and no complaints or significant incidents were reported during the period. Appendix B lists a condition-by-condition assessment of compliance for the WWTP. Across all consents, the WWTP was assessed as **Category 2** in 2025-2026 due to exceedances in the effluent discharge quality from July 2025.

Appendix A. Supplementary data

Influent monitoring data

Date	$cBOD_5$	NO_x-N	O&G	DRP	TKN	TN	NH_x-N	TP	TSS
	mg O_2/L	mg/L	mg/L	mg/L P	mg/L	mg/L	mg/L N	mg/L P	mg/L
8/07/2025	240	0.04	42.4	6.6	110	110.0	88	13.9	219
12/08/2025	270	0.02	53.0	8.8	98	98.0	99	12.4	139
9/09/2025	440	0.02	35.2	19.5	280	280.0	230	21.6	112
14/10/2025	470	0.02	80.0	9.3	94	94.0	76	14.9	280
11/11/2025	120	0.02	42.8	5.9	56	56.0	49	6.9	75
9/12/2025	210	0.03	31.8	11.2	140	140.0	110	15.8	90
13/01/2026	350	0.04	53.0	13.4	130	130.0	96	15.2	171
10/02/2026	290	0.02	19.8	20.4	290	290.0	270	23.8	97
10/03/2026	260	0.02	71.0	13.0	130	130.0	110	16.0	155
14/04/2026	91	0.02	23.6	2.6	21	21.0	19	3.6	52
12/05/2026	190	0.02	35.0	12.0	120	120.0	97	15.0	150
9/06/2026	200	0.02	34.4	13.0	110	110.0	100	16.0	112

Influent loading

Date	$cBOD_5$ kg/day	O&G kg/day	DRP kg/day	TN kg/day	NH_X-N kg/day	Total P kg/day	TSS kg/day
8/07/2025	5.41	0.96	0.15	2.48	1.98	0.31	4.93
12/08/2025	9.34	1.83	0.30	3.39	3.42	0.43	4.81
9/09/2025	13.88	1.11	0.62	8.84	7.26	0.68	3.53
14/10/2025	11.43	1.95	0.23	2.29	1.85	0.36	6.81
11/11/2025	6.51	2.32	0.32	3.04	2.66	0.37	4.07
9/12/2025	7.99	1.21	0.43	5.33	4.18	0.60	3.42
13/01/2026	16.44	2.49	0.63	6.11	4.51	0.71	8.03
10/02/2026	11.43	0.78	0.80	11.43	10.64	0.94	3.82
10/03/2026	9.18	2.51	0.46	4.59	3.88	0.56	5.47
14/04/2026	7.04	1.82	0.20	1.63	1.47	0.28	3.98
12/05/2026	5.34	0.98	0.34	3.37	2.73	0.42	4.22
9/06/2026	4.64	0.80	0.30	2.55	2.32	0.37	2.60

Effluent monitoring data

Date	S7 Wetland discharge								Post UV Tap		
	$cBOD_5$ mg O_2/L	NH_X-N mg/L	NO_X-N mg/L	DRP mg/L	TP mg/L	TSS mg/L	TN mg/L	*E. coli* cfu/100mL	*E. coli* cfu/100mL	DO mg O_2/L	pH
1-Jul-25	2.20	24.00	1.56	0.19	0.20	1.00	25.56	54.0	1.6	8.72	7.17
8-Jul-25	2.70	11.00	2.00	0.31	0.35	1.00	15.00	32.0	1.7	9.92	8.3
15-Jul-25	1.90	0.68	0.34	0.28	0.30	2.80	1.20	20.0	1.6	9.93	8.18
22-Jul-25	0.71	0.08	0.60	0.27	0.34	1.00	1.14	13.0	1.6	10.1	8.05
29-Jul-25	0.75	0.27	1.17	0.28	0.29	1.00	2.08	9.8	1.6	9.86	7.84
5-Aug-25	1.20	0.24	1.10	0.23	0.24	1.00	1.77	20.0	1.6	10.15	8.23
12-Aug-25	2.90	0.75	2.70	0.17	0.26	2.00	4.00	13.0	1.6	8.78	7.44
19-Aug-25	3.00	0.03	1.47	0.19	0.20	1.80	3.27	56.0	1.7	8.97	7.3
26-Aug-25	0.56	0.04	0.26	0.23	0.24	1.00	0.80	4.9	1.7	9.91	8.14
2-Sept-25	0.58	0.07	0.27	0.27	0.37	4.60	0.83	17.0	2.0	9.68	8.12
9-Sept-25	0.70	0.03	0.27	0.25	0.28	3.80	1.05	6.6	1.6	8.7	7.91
16-Sept-25	1.70	0.22	0.16	0.25	0.29	1.00	0.83	6.6	1.6	8.59	7.4
23-Sept-25	0.74	0.02	0.58	0.28	0.28	1.60	1.22	3.3	1.6	9.17	7.5
30-Sept-25	0.50	0.05	0.11	0.23	0.25	1.00	0.64	44.0	1.6	8.97	7.37
7-Oct-25	0.80	0.03	0.06	0.26	0.28	1.00	0.61	260.0	1.7	8.96	7.33
14-Oct-25	1.30	0.06	0.20	0.31	0.51	4.60	0.97	11000.0	1.7	8.23	7.2
21-Oct-25	0.56	0.06	0.12	0.33	0.36	1.80	0.73	46.0	1.7	8.92	7.57
28-Oct-25	2.40	0.05	0.21	0.30	0.34	2.20	1.02	1000.0	1.6	8.08	7.45
4-Nov-25	0.50	0.02	0.17	0.31	0.31	2.40	0.77	16.0	1.7	9.09	7.61
11-Nov-25	0.55	0.06	1.00	0.40	0.41	1.00	1.64	1200.0	1.7	8.88	7.97
18-Nov-25	0.50	0.02	0.12	0.58	0.74	2.20	0.71	32.0	1.7	8.85	7.98

	S7 Wetland discharge								Post UV Tap		
Date	**$cBOD_5$** mg O_2/L	**NH_X-N** mg/L	**NO_X-N** mg/L	**DRP** mg/L	**TP** mg/L	**TSS** mg/L	**TN** mg/L	***E. coli*** cfu/100mL	***E. coli*** cfu/100mL	**DO** mg O_2/L	**pH**
25-Nov-25	0.92	0.04	0.11	0.45	0.49	1.00	0.59	82.0	1.6	8.75	8.02
2-Dec-25	0.50	0.03	0.08	0.34	0.37	1.00	0.65	330.0	1.7	8.59	7.86
9-Dec-25	0.69	0.04	0.04	0.30	0.31	1.00	0.58	110.0	1.7	8.3	7.74
16-Dec-25	0.80	0.03	0.09	0.34	0.35	1.80	0.56	28.0	1.6	8.37	7.81
23-Dec-25	1.20	0.03	0.11	0.34	0.34	1.60	0.61	18.0	1.6	8.82	7.8
30-Dec-25	0.69	0.49	0.48	0.24	0.24	3.60	1.44	38.0	1.7	8.15	7.4
6-Jan-26	2.30	0.20	0.37	0.16	0.18	3.20	0.63	25.0	1.7	7.78	6.83
13-Jan-26	0.50	0.03	0.37	0.21	0.20	1.00	1.03	13.0	1.7	8.47	7.1
20-Jan-26	0.50	0.02	0.08	0.24	0.31	2.00	0.46	90.0	1.7	8.05	7.02
27-Jan-26	0.50	0.29	0.06	0.23	0.31	3.60	0.69	56.0	1.7	7.89	6.7
3-Feb-26	0.81	1.00	0.10	0.30	0.35	1.00	1.70	150.0	1.7	7.59	6.73
10-Feb-26	0.53	0.36	0.08	0.26	0.36	3.60	0.94	78.0	1.7	8.07	6.83
17-Feb-26	0.50	0.12	0.06	0.23	0.26	1.60	0.70	11.0	1.6	8.42	6.83
24-Feb-26	0.50	0.09	0.04	0.21	0.30	1.80	0.68	46.0	1.7	8.16	7.02
3-Mar-26	0.50	0.08	0.17	0.24	0.28	2.20	0.68	23.0	1.7	7.92	6.57
10-Mar-26	0.93	0.20	0.10	0.23	0.58	10.00	0.77	9.8	1.0	7.9	6.74
17-Mar-26	0.59	0.02	0.80	0.21	0.24	5.00	0.58	20.0	0.9	8.25	7.14
24-Mar-26	0.82	0.03	0.84	0.23	0.26	5.00	0.72	13.0	0.9	7.94	6.83
31-Mar-26	0.53	0.45	0.09	0.32	0.40	1.80	0.71	110.0	1.6	7.96	6.65
7-Apr-26	0.65	0.09	0.43	0.21	0.24	1.20	0.69	80.0	1.6	7.96	6.65
14-Apr-26	0.54	0.43	0.03	0.27	0.34	2.40	0.97	310.0	1.7	8.2	6.29
21-Apr-26	0.50	0.08	0.05	0.17	0.20	1.00	0.46	20.0	1.6	8.91	7.07

	S7 Wetland discharge								Post UV Tap		
Date	**$cBOD_5$** mg O_2/L	**NH_X-N** mg/L	**NO_X-N** mg/L	**DRP** mg/L	**TP** mg/L	**TSS** mg/L	**TN** mg/L	***E. coli*** cfu/100mL	***E. coli*** cfu/100mL	**DO** mg O_2/L	**pH**
28-Apr-26	0.55	0.04	0.07	0.13	0.15	2.60	0.44	3.3	1.6	8.36	6.9
5-May-26	0.63	0.03	0.34	0.12	0.14	3.80	0.53	6.5	1.6	8.67	6.84
12-May-26	0.50	0.04	0.08	0.15	0.19	2.40	0.58	3.3	1.6	9.22	6.85
19-May-26	0.84	0.03	0.20	0.14	0.16	2.20	0.69	1.6	1.6	8.51	6.97
26-May-26	0.53	0.05	0.21	0.16	0.18	1.00	0.55	1.6	1.6	9.13	6.64
2-Jun-26	0.90	0.05	0.25	0.19	0.24	3.20	0.84	2000.0	1.6	8.27	6.7
9-Jun-26	0.69	0.01	0.15	0.15	0.18	1.00	0.70	9.8	1.6	8.74	7
16-Jun-26	0.77	0.01	0.35	0.14	0.14	2.80	0.33	11.0	1.7	9.52	7.03
23-Jun-26	0.81	0.02	0.55	0.15	0.16	2.80	0.49	1.6	1.7	9.37	7.04

Any day where the UV sample is not collected is due to low flows through the plant and not being able to collect a UV and Permeate sample.

Receiving environment water quality data

S1(W1) Puriri Tree (upstream western tributary)

Date	BOD	NH_X-N	NO_2-N	NO_3-N	NO_x-N	DRP	TP	TSS	TKN	TN	*E. coli*
	mg O_2/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	cfu/100mL
8/07/2025	0.63	0.026	0.02	0.63	2.6	0.008	0.015	6	0.3	2.9	68
12/08/2025	0.61	0.014	0.02	0.61	0.41	0.009	0.011	7.2	0.25	0.66	120
9/09/2025	0.58	0.034	0.02	0.58	0.14	0.01	0.038	4.6	0.48	0.62	60
14/10/2025	7.8	0.089	0.02	7.8	0.16	0.185	0.369	73	1.8	1.96	150000
11/11/2025	2.8	0.057	0.02	2.8	0.13	0.025	0.093	18	0.97	1.1	22000
9/12/2025	0.59	0.046	0.02	0.59	0.056	0.012	0.03	4	0.42	0.476	90
13/01/2026	1.2	0.014	0.02	1.2	0.091	0.018	0.101	2.2	0.63	0.721	630
10/02/2026	0.5	0.064	0.02	0.5	0.091	0.02	0.036	6.6	0.43	0.521	54
10/03/2026	1.4	0.056	0.02	1.4	0.049	0.011	0.42	8	0.63	0.679	190
14/04/2026	0.9	0.022	0.4	0.9	0.19	0.011	0.049	7.6	0.31	0.5	830
12/05/2026	2.4	0.041	0.02	2.4	0.073	0.012	0.035	7.2	0.38	0.453	640
9/06/2026	0.53	0.021	0.02	0.53	0.081	0.0096	0.025	8.8	0.38	0.461	92

S2 Lower Wetland

Date	BOD	NH_X-N	NO_2-N	NO_3-N	NO_x-N	DRP	TP	TSS	TKN	TN	*E. coli*
	mg O_2/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	cfu/100mL
8/07/2025	0.64	0.024	0.02	0.64	2.6	0.085	0.108	2.8	0.51	3.11	150
12/08/2025	0.5	0.012	0.02	0.5	0.41	0.074	0.095	7.2	0.3	0.71	250
9/09/2025	0.78	0.024	0.02	0.78	0.14	0.13	0.17	3.2	0.52	0.66	240
14/10/2025	10	0.094	0.02	10	0.16	0.193	0.554	301	2.6	2.76	160000
11/11/2025	1.2	0.041	0.02	1.2	0.13	0.218	0.256	16	0.71	0.84	5200

S2 Lower Wetland											
Date	BOD	NH_X-N	NO_2-N	NO_3-N	NO_x-N	DRP	TP	TSS	TKN	TN	*E. coli*
	mg O_2/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	cfu/100mL
9/12/2025	0.94	0.039	0.02	0.94	0.056	0.215	0.233	4.2	0.58	0.636	810
13/01/2026	4.7	0.046	0.02	4.7	0.091	0.188	0.185	3.8	0.52	0.611	330
10/02/2026	0.6	0.025	0.02	0.6	0.091	0.139	0.148	6.4	0.59	0.681	1600
10/03/2026	0.82	0.039	0.02	0.82	0.049	0.2	0.25	18	0.8	0.849	530
14/04/2026	0.5	0.035	0.02	0.5	0.19	0.12	0.16	8.2	0.7	0.89	580
12/05/2026	5.3	0.02	0.02	5.3	0.073	0.11	0.13	4	0.56	0.633	170
9/06/2026	0.9	0.015	0.02	0.9	0.081	0.11	0.13	4	0.4	0.481	220

S3 (W3) Upper Wetland (upstream eastern tributary)											
Date	BOD	NH_X-N	NO_2-N	NO_3-N	NO_x-N	DRP	TP	TSS	TKN	TN	*E. coli*
	mg O_2/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	cfu/100mL
8/07/2025	0.99	0.074	0.02	0.99	0.13	0.019	0.059	4.4	0.51	0.64	84
12/08/2025	1	0.013	0.02	1	0.19	0.025	0.051	2.4	0.42	0.61	78
9/09/2025	1.2	0.02	0.02	1.2	0.19	0.025	0.057	3.8	0.44	0.63	56
14/10/2025	9.6	0.08	0.02	9.6	0.14	0.013	0.803	342	3.3	3.44	120000
11/11/2025	1.5	0.025	0.02	1.5	0.11	0.04	0.15	12	0.6	0.71	2700
9/12/2025	1.9	0.025	0.02	1.9	0.12	0.065	0.099	1	0.55	0.67	540
13/01/2026	1.1	0.028	0.02	1.1	0.28	0.036	0.106	4.4	0.39	0.67	130
10/02/2026	2.5	0.018	0.02	2.5	0.23	0.059	0.129	76.8	0.47	0.7	240
10/03/2026	0.82	0.016	0.02	0.82	0.29	0.019	0.15	4.2	0.36	0.65	150
14/04/2026	0.5	0.017	0.02	0.5	0.038	0.016	0.067	5	0.67	0.708	570
12/05/2026	0.86	0.018	0.02	0.86	0.18	0.02	0.064	5	0.36	0.54	78
9/06/2026	0.68	0.011	0.02	0.68	0.18	0.018	0.053	11	0.38	0.56	450

S4 (W4) Stormwater Drain (Gate) - Downstream main tributary										
Date	**BOD**	**NH_X-N**	**NO_3-N**	**NO_x-N**	**DRP**	**TP**	**TSS**	**TKN**	**TN**	***E. coli***
	mg O_2/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	cfu/100mL
8/07/2025	0.83	0.023	0.83	0.53	0.132	0.187	7	0.63	1.16	4900
12/08/2025	1	0.013	1	0.066	0.128	0.381	19	0.49	0.556	290
9/09/2025	0.75	0.02	0.75	0.039	0.155	0.187	11	0.43	0.469	110
14/10/2025	8.9	0.08	8.9	0.1	0.08	0.855	250	2.8	2.9	110000
11/11/2025	0.72	0.025	0.72	0.02	0.231	0.292	4.4	0.68	0.7	940
9/12/2025	0.93	0.025	0.93	0.02	0.322	0.518	28	0.69	0.71	1400
13/01/2026	1.4	0.028	1.4	0.02	0.326	0.751	91	0.28	0.3	2000
10/02/2026	2.4	0.018	2.4	0.02	0.32	0.367	5.5	0.56	0.58	1100
10/03/2026	0.74	0.016	0.74	0.02	0.33	0.44	12	0.56	0.58	760
14/04/2026	0.5	0.017	0.5	0.033	0.15	0.19	1.8	0.67	0.703	840
12/05/2026	0.5	0.018	0.5	0.02	0.2	0.22	3	0.38	0.4	1600
9/06/2026	0.63	0.011	0.63	0.02	0.17	0.26	5.6	0.49	0.51	1100

W6 Matiatia Wetland

Date	BOD	NH_X-N	NO_x-N	DRP	TP	TSS	TKN	TN	*E. coli*
	mg O_2/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	cfu/100mL
8/07/2025	1.4	0.11	0.79	0.061	0.509	44.6	0.78	1.57	180
12/08/2025	2.4	0.36	0.11	0.13	0.389	108	1.4	1.51	120
9/09/2025	1.7	0.095	0.078	0.075	0.237	12	0.52	0.598	110
14/10/2025	7.9	0.084	0.099	0.064	0.403	119	1.8	1.899	130000
11/11/2025	3.2	0.066	0.12	0.113	0.352	245	1.2	1.32	2900
9/12/2025	2	0.14	0.02	0.121	0.47	92.8	1.2	1.22	1800
13/01/2026	-	0.068	0.035	0.125	0.251	8	0.66	0.695	290
10/02/2026	1.3	0.088	0.034	0.151	0.568	54.4	1.1	1.134	600
10/03/2026	8.3	0.12	0.02	0.14	1.5	242	1.8	1.82	1400
14/04/2026	0.5	0.049	0.12	0.086	0.15	16	0.75	0.87	660
12/05/2026	1.1	0.098	0.067	0.085	0.26	22	0.65	0.717	1000
9/06/2026	1.3	0.09	0.11	0.072	0.15	43.4	0.47	0.58	330

S5 (W7) Stream (Beach Outlet)

Date	BOD	NH_X-N	NO_x-N	DRP	TP	TSS	TKN	TN	*E. coli*
	mg O_2/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	cfu/100mL
8/07/2025	1.4	0.11	0.07	0.063	0.509	3.4	0.58	0.65	2100
12/08/2025	2.4	0.36	0.043	0.008	0.389	6.2	0.37	0.413	890
9/09/2025	1.7	0.095	0.022	0.057	0.237	4.4	0.61	0.63	1200
14/10/2025	7.9	0.084	0.12	0.102	0.403	34	0.87	0.99	41000
11/11/2025	3.2	0.066	0.021	0.097	0.352	13	0.74	0.76	4800
9/12/2025	2	0.14	0.003	0.023	0.47	14	0.86	0.86	5000
13/01/2026	1.7	0.068	0.006	0.052	0.251	11	0.86	0.86	1700

S5 (W7) Stream (Beach Outlet)									
Date	BOD	NH_X-N	NO_x-N	DRP	TP	TSS	TKN	TN	*E. coli*
	mg O_2/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	cfu/100mL
10/02/2026	1.3	0.088	0.02	0.071	0.568	5.2	0.71	0.71	1300
10/03/2026	8.3	0.12	0.0033	0.023	1.5	6.2	0.61	0.61	78000
14/04/2026	0.5	0.049	0.032	0.055	0.15	12	0.88	0.91	740
12/05/2026	1.1	0.098	0.011	0.037	0.26	2.2	0.64	0.66	880
9/06/2026	1.3	0.09	0.01	0.038	0.15	7.2	0.79	0.8	4800

Additional Effluent Reuse Analysis

Effluent metals analysis

Date	Aluminium	Arsenic	Boron	Cadmium	Chromium	Cobalt	Lead	Mercury	Molybdenum	Selenium	Copper	Magnesium	Nickel	Zinc
20/08/2024	0.1	0.001	0.092	<0.00005	0.0011	0.00016	0.00048	<0.00005	<0.0003	<0.0005	0.0021	5.4	0.0032	0.055
17/09/2024	0.05	0.00095	0.086	<0.00005	0.00077	0.00049	0.00033	<0.00005	<0.0003	<0.0005	0.0049	5.1	0.0024	0.071
19/11/2024	0.071	0.00073	0.12	<0.00005	0.001	0.00014	0.00031	<0.00005	<0.0003	<0.0005	0.0028	5.5	0.0019	0.049
17/12/2024	0.072	0.00088	0.095	<0.00005	0.00061	0.0002	0.0002	<0.00005	<0.0003	<0.0005	0.0032	6.1	0.002	0.047
21/01/2025	0.12	0.0012	0.13	<0.00005	0.00054	0.00019	0.00011	<0.00005	<0.0003	<0.0005	0.0033	6.9	0.0027	0.041
18/02/2025	0.086	0.0013	0.094	<0.00005	<0.0005	0.00017	0.00022	<0.00005	<0.0003	<0.0005	0.0057	7.3	0.0019	0.041
18/03/2025	0.062	0.00059	0.12	<0.00005	0.00093	0.00019	0.00022	<0.00005	<0.0003	<0.0005	0.0089	8.2	0.0021	0.019
15/04/2025	0.058	0.00054	0.078	<0.00005	0.00059	0.0001	0.00011	<0.00005	<0.0003	<0.0005	0.0046	7.4	0.0016	0.018
20/05/2025	0.061	0.00066	0.084	<0.00005	0.0008	0.00019	<0.0001	<0.00005	<0.0003	<0.0005	0.0022	12	0.0024	0.03
20/05/2025	0.057	0.00029	0.059	<0.00005	0.00063	0.00021	<0.0001	<0.00005	<0.0003	<0.0005	0.0021	11	0.001	0.015

Additional effluent analysis

Date	Calcium	Sodium	Sulphate	Fluoride	TDS	Turbidity	BOD
20/08/2024	22	140	131	0.07	580	0.35	1.1
17/09/2024	23	220	54.2	0.13	970	0.15	2
5/11/2024	-	-	149	-	830	0.15	2.1
12/11/2024	-	-	143	-	800	0.15	1.2
19/11/2024	25	200	135	0.08	840	0.1	5.3
3/12/2024	-	-	186	-	840	0.15	<2.0
17/12/2024	21	220	242	0.06	920	0.15	2.6
24/12/2024	-	-	224	-	990	0.1	0.61
31/12/2024	-	-	252	-	930	0.15	<0.5
7/01/2025	-	-	221	-	840	0.15	<0.5
14/01/2025	-	-	93.9	-	750	0.15	<0.5
21/01/2025	26	260	188	0.09	900	0.2	0.68
28/01/2025	-	-	178	-	890	160	<0.5
4/02/2025	-	-	63.2	-	880	0.25	0.85
11/02/2025	-	-	50.6	-	850	0.1	<0.5
18/02/2025	26	220	46.9	0.09	840	0.15	1.2
25/02/2025	-	-	57	-	920	0.1	<0.5
4/03/2025	-	-	51.1	-	830	0.15	<0.5
11/03/2025	-	-	45.6	-	870	0.15	<0.5
18/03/2025	29	240	42.5	0.13	870	0.15	0.99
25/03/2025	-	-	41.6	-	860	0.2	0.68
15/04/2025	22	170	43.5	0.07	690	0.1	2.7
20/05/2025	29	270	197	0.06	940	0.1	1.1
20/05/2025	28	260	-	-	-	-	0.75

Appendix B. Compliance assessment

Discharge to water compliance assessment (37282)

Condition Number	Consent Condition Owhanake Discharge to Water (#37282)	Compliance Rating	Comments
01	The discharges of contaminants shall be carried out in accordance with the plans and information submitted with the application, including: SEE CONSENT PDF FOR LIST OF PLANS AND REQUIREMENTS	1	Compliant.
02	That Plant B is to be installed and fully operational before annual average dry weather flows exceed 35 m3 per day.	1	The Plant B has been installed and fully operational from January 2020.
03	Notwithstanding the provisions of condition 1 of this resource consent, the Consent Holder may submit for approval of The Manager an alternative biological nutrient removal wastewater treatment plant and alternative disinfection system to those described in the Applicant's proposal for application 27 4 73 and other supporting documents.	NE	Not triggered.
04	The consent holder shall ensure that the maximum discharge volume does not exceed the following limits: a) Plant A: 80 cubic metres per day b) Plant B: 250 cubic metres per day.	1	Compliant.
05	That upon considering key new treatment system components for the upgrade of the plant capacity the Consent Holder shall specifically bear in mind and take proper account of the potential future requirement to reduce phosphorus concentrations in the treated wastewater prior to discharge.	NE	Not triggered.
06A	That prior to the commissioning of the Plant B, the Consent Holder shall provide to the Manager's satisfaction the design details of the selected disinfection system equipment. The Consent Holder shall also provide to the Manager information from a suitably qualified wastewater engineer that verifies that the disinfection methodology, along with specified maintenance and monitoring procedures, will achieve a final effluent quality that will comply with the discharge standards specified in Conditions 34 and 35 of this consent.	NE	Not triggered.
06B	That if a UV disinfection system is used then the minimum level of disinfection shall be such that the wastewater receives a minimum UV dose, defined as the 10 minute average received UV light dose, of 45 milli-Watt seconds per square centimetre (mWs/cm^2) prior to it entering the constructed wastewater wetland	1	Compliant.
06C	That if an alternative disinfection system is used instead of UV, then the Consent Holder shall provide evidence to The Manager's satisfaction that the effectiveness of any such alternative system can be continuously monitored.	NE	Not triggered.
06D	That the disinfection system used shall meet at least the discharge quality limit in condition 36.	NE	Not triggered.

Condition Number	Consent Condition Owhanake Discharge to Water (#37282)	Compliance Rating	Comments
07	That prior to the commissioning of Plant B, the Consent Holder shall install an upgraded UV disinfection system approved under condition 9 below.	1	A new UV unit replacement was installed in 2014.
08	That prior to the commissioning of Plant B, the Consent Holder shall install outfall structures in the Matiatia wetland to disperse the wastewater discharge flow and to ensure that the discharge does not result in flooding or erosion effects on the respective tributaries. The outfall structures to be used shall be designed to improve wastewater distribution within the wetland, in particular by the use of multiple discharge points rather than a single discharge point on each structure. One of the structures shall be installed approximately 1Om downstream of the existing outfall pipe. The design and installation of the structures shall be submitted to the Manager for approval prior to construction and once constructed the Consent Holder shall provide certification of the works to the Manager.	1	Outfall structure compliant in design.
09	The design and installation of all new system components shall be carried out under the supervision of a chartered professional engineer or other appropriately qualified person experienced in the design and installation of wastewater treatment systems. The supervising engineer/person shall inspect all the new works (as they are completed), and shall certify in writing to the Manager that all additional components of the wastewater treatment system have been designed, inspected and installed in accordance with standard engineering practice and with the plans provided pursuant to condition 1 and any other plans or specifications required by the conditions of consent. This certification shall be carried out within three months of the installation of Plant B.	NE	Compliant.
10	Within three months of the commissioning of Plant 8 the consent holder shall submit an updated 'as-built' general plant layout plan for the upgraded treatment system to the Council with the certification required by condition 9, showing on the plan the location of all existing and new key components of the treatment system.	NE	Compliant.
11	That the Consent Holder shall ensure that all septic tanks connected to the reticulation system are of appropriate capacity, are fitted with outlet filters, and are installed and maintained to prevent ingress of stormwater.	1	Completed.
12	That the Consent Holder shall provide to the Manager, via the OWTP Annual Monitoring Report required by Condition 39, an updated summary of current and confirmed proposed new connections to the treatment plant sewerage system.	1	No new connections.
13	That the Consent Holder shall not accept any new connections to the treatment system where the primary treatment system at the source does not comply with the design and maintenance requirements for septic tank and outlet filters as specified in the Auckland Regional Council Technical Publication 58 "On-site Wastewater Systems: Design and Management Manual" (TP58, Third Edition 2004) as current at the time of connection or equivalent as approved in writing by the Manager.	1	Compliant.

Condition Number	Consent Condition Owhanake Discharge to Water (#37282)	Compliance Rating	Comments
14	That no trade, industrial, non-domestic or other strong (non-domestic type) wastes shall be accepted into the wastewater treatment plant without the written approval of the Manager. In this consent, "trade wastes"1 refers to anything which is discharged from trade premises as defined in Section 489 of the Local Government Act 1974.	1	Compliant.
15	That all primary treatment systems from which effluent is reticulated to the treatment plant shall be fitted with an effluent outlet filter that retains any particle of 3mm diameter or greater within the septic tank on the site that the wastewater is generated.	1	No new connections. Auckland Council is responsible for requirements relating to grease traps etc.
16	That the Consent Holder shall fence and clearly signpost the treatment plant and discharge points to discourage access by unauthorised personnel. The details of such action shall be agreed with the local Medical Officer of Health and submitted for approval by the Manager, prior to the exercising of this consent.	1	Fence and signposts in place.
17	That this resource consent is granted by the Auckland Council subject to its servants or agents being permitted access to the relevant parts of the property at all reasonable times for the purpose of carrying out inspections, surveys, investigations, tests, measurements or taking samples.	1	Compliant. Most recent Compliance Officer inspection completed 14 April 2026.
18	The Consent Holder shall ensure that 24 hours a day, seven days a week electronic monitoring systems are installed and maintained to operate in the event of any plant failure.	1	Electronic monitoring system in place.
19	The Consent Holder shall ensure that the system is designed and maintained to ensure that wastewater can be retained within the system, above the alarm level, without overflow for a period of at least 24 hours and in accordance with the provisions in the Management Plan.	1	As designed.
20	That a suitable area shall be reserved for the extension of the constructed wetland, should this become necessary and the extent of this reserve shall be specified in the Management Plan.	1	Area reserved.
21	That the Consent Holder shall install and maintain signage along the upper and main sections of Matiatia Wetland, Matiatia stream and Matiatia Beach foreshore. The signage shall advise of the poor stream water quality and the sources potentially contributing to that poor quality. The signs shall be erected prior to the exercise of this consent, in such positions as to clearly notify users of the wetland and of the associated public walkway of the proximity of the effluent discharge and shall provide appropriate public health advice, as approved by the Medical Officer of Health, regarding the use of the wetland for recreation and gathering of food for consumption.	1	Signage in place.

Condition Number	Consent Condition Owhanake Discharge to Water (#37282)	Compliance Rating	Comments
22	That in the event of wastewater being discharged from the treatment plant that has not received effective disinfection, the Consent Holder shall immediately supplement the signage required by condition 21 above with signs specifically advising of system malfunction and warning against collection of shellfish or contact recreation in the vicinity of the stream outlet, as a consequence of the discharge of poorly treated wastewater. Signage shall be maintained until at least 24 hours after such time that monitoring confirms compliance with the discharge quality consent conditions.	1	Not required. The condition trigger did not occur.
23	That the wording, language(s) and locations of all signs shall be to the satisfaction of the Manager, in consultation with the Medical Officer of Health.	1	Signage approved.
24	That the Consent Holder shall desludge the plant as required and that the sludge shall be thickened according to the standard in the Management Plan approved by the Manager. Waste sludge shall be disposed of off-site to an appropriate licensed waste treatment and disposal facility, in a manner that ensures that the sludge or runoff from the sludge does not enter any natural waters.	1	Compliant.
25	The consent holder shall prepare a Management Plan for the wastewater treatment and discharge system to enable compliance with the conditions of this consent to ensure that any adverse effects on the environment are minimised. The Management Plan shall be in accordance with the conditions of this consent and shall cover the following: SEE CONSENT PDF FOR LIST OF REQUIREMENTS	1	O&M manual dated February 2020 in place.
26	The consent holder shall comply with the requirements of the Management Plan required by condition 25 once it has been approved. All subsequent significant updates to the plan throughout the term of this consent shall be submitted to the Manager for review.	1	O&M manual dated February 2020 in place.
27	That the Consent Holder shall continuously measure the wastewater flow into and out of the wastewater treatment plant. Meters shall be located to enable separate measures of the wastewater flows from the Oneroa commercial and residential area pump station(s) and from the Matiatia Wharf pump station(s), for flows from the wharf public toilets and from the WIL development and for the treated wastewater flow discharged to the natural wetland. Flow volumes shall be measured with meters capable of measuring to an accuracy of plus or minus 5 %. Where pump hours are used to meter flows, the pump flow time shall be regularly calibrated to consistently ensure an accuracy of plus or minus 5 % in achieved. The meters shall be installed in accordance with the manufacturer's specifications and shall be maintained in good working order at all times.	2	Telemetry issues in Oct 2025 – Feb 2026, and April 2026 prevented obtaining daily volumes from Matiatia Wharf. No issues with plant flow meters throughout the 2025-2026 reporting year. Meters are replaced and verified as needed based on plc changes.
28	That all wastewater flows both into and out of the wastewater treatment plant are to be logged automatically. This data is to be recorded at such a frequency so as to ensure that the diurnal variations in wastewater flows can be determined and a daily 24 hour flow total determined. The data shall also be securely stored electronically for at least 2 years. All data collected pursuant to this condition shall be forwarded to the Manager quarterly as required by Condition 38.	1	Ongoing.

Condition Number	Consent Condition Owhanake Discharge to Water (#37282)	Compliance Rating	Comments
29A	That the Consent Holder shall monitor water quality at the following locations: a. Primary Treated Influent into the Plant That samples shall be taken from the primary treated influent flow at the point it enters the Owhanake treatment plant at intervals as specified in the Management Plan, and the samples shall be analysed for the following parameters: • 5-day carbonaceous Biochemical Oxygen Demand ($cBOD_5$) • Total Suspended Solids (TSS) • Total Nitrogen (TN) • Total Oxidised Nitrogen (NO_3 & NO_2) • Ammonia Nitrogen (NH_3 & NH_4) • Dissolved Reactive Phosphorus (DRP) • Total Phosphorus (TP) • Oil and Grease	1	Ongoing.
29Bi	That the Consent Holder shall monitor water quality at the following locations: b. Effluent Post Secondary Treatment System and Post Disinfection Treatment, prior to Constructed Wetland Turbidity (or equivalent) monitoring prior to disinfection system (i) That effluent entering the disinfection treatment system shall be continuously monitored for turbidity or an alternative effluent quality parameter that indicates its suitability for effective disinfection. The monitoring system shall be connected to an automated alarm that is designed to activate in the event that effluent quality requirements, as specified in the Management Plan, are exceeded in accordance with procedures the Management Plan.	1	The treated effluent from the new system passes through 4 x SINAP 80-120 membrane modules. These modules contain PVDF membrane sheets with a nominal pore size of 0.1 micron. Prior to discharge, the filtered water from the MBR is passed through the existing site UV which is rated at 120mJ/cm2 [= 120mWs/cm2] at 4m3/hr, 45% UVT. UVT is assessed once a week.
29Bii	That the Consent Holder shall monitor water quality at the following locations: b. Effluent Post Secondary Treatment System and Post Disinfection Treatment, prior to Constructed Wetland E. coli monitoring following disinfection system (ii) That effluent samples shall be taken immediately following the discharge from the disinfection system and shall be analysed for E. coli. Samples shall be taken at twice weekly intervals, at the same time each sampling day, post commissioning of any new key plant components or changes in flow regimes in excess of 25% increase in the average weekly flows compared to the average flows recorded in the previous month, until two week's full plant discharge quality compliance is achieved. At all other times, unless the frequency in condition 29(b)(iii) applies, sampling shall be undertaken weekly in summer and fortnightly in winter.	1	The measured E. Coli level in the treated water from the MBR is typically <1.6 cfu/100mL (i.e., below detection limits).

Condition Number	Consent Condition Owhanake Discharge to Water (#37282)	Compliance Rating	Comments
29Biii	That the Consent Holder shall monitor water quality at the following locations: b. Effluent Post Secondary Treatment System and Post Disinfection Treatment, prior to Constructed Wetland Increased E. coli monitoring if elevated turbidity (or equivalent) (iii) That in the event of the disinfection system influent quality in terms of turbidity (or an alternative parameter specified 29(b)(i) above) exceeding the quality trigger level and maximum non-compliance interval (minutes), as specified in the Management Plan for effective treatment, then the frequency of E. coli monitoring shall be increased to daily until both E. coli levels and turbidity are in compliance with this consent and the parameters specified in the Management Plan respectively.	1	Compliant.
29Biv	That the Consent Holder shall monitor water quality at the following locations: b. Effluent Post Secondary Treatment System and Post Disinfection Treatment, prior to Constructed Wetland Increased wetland monitoring if E. coli elevated above 10,000cfu/100mL (iv) That in the event of an E. coli exceedance of 10,000 cfu (or MPN) per 100 mL, then monitoring shall be undertaken to assess the extent of impact of the discharge on the wetland. This shall involve full monitoring of the Receiving Water Quality in accordance with condition 29(d), which shall commence as soon as practicable following the exceeding result and at least within one week of the exceeding discharge flow.	1	Compliant.
29Ci	That the Consent Holder shall monitor water quality at the following locations: c. Treated Wastewater immediately prior to the Discharge into the Natural Wetland (i) That samples of treated effluent shall be taken immediately prior to its discharge into the natural wetland. Samples shall be taken at weekly intervals at the same time each sampling day (This is site E2 on Site Sampling Plan .)	1	Compliant.
29Cii	That the Consent Holder shall monitor water quality at the following locations: c. Treated Wastewater immediately prior to the Discharge into the Natural Wetland (ii) That following four consecutive samples being in full compliance with the plant discharge quality standards specified in conditions 34, 35 and 36, then the frequency of analysis for that parameter only, may be decreased to monthly, and must return to weekly should the limit be exceeded again. This is except for analysis for E. coli, which shall be undertaken weekly in any event during the summer period 1 November to 30 April each year.	1	Compliant.

Condition Number	Consent Condition Owhanake Discharge to Water (#37282)	Compliance Rating	Comments
29Ciii	That the Consent Holder shall monitor water quality at the following locations: c. Treated Wastewater immediately prior to the Discharge into the Natural Wetland (iii) That all the samples taken from this location shall be analysed for the following parameters: • 5-day carbonaceous Biochemical Oxygen Demand ($cBOD_5$) • Total Suspended Solids (TSS) • Total Nitrogen (TN) • Total Oxidised Nitrogen (NO_3&NO_2) • Ammonia Nitrogen (NH_3&NH_4) • Dissolved Reactive Phosphorus (ORP) • Total Phosphorus (TP) • E. coli • Dissolved Oxygen • pH • Temperature • Conductivity	1	Compliant.
29Civ	That the Consent Holder shall monitor water quality at the following locations: c. Treated Wastewater immediately prior to the Discharge into the Natural Wetland (iv) That once Plant B has been commissioned, one sample per year of the surficial sediment in the unnamed tributary approximately 10m downstream of the outfall structure shall be analysed for dissolved and total recoverable Trace Metals.	1	Plant B has been installed and fully operational from January 2020. Sediment sample this reporting period taken August 2026.
29Cv	That the Consent Holder shall monitor water quality at the following locations: c. Treated Wastewater immediately prior to the Discharge into the Natural Wetland (v) That should the E. coli levels in the discharge from the treatment plant be in excess of 126 MPN (or cfu)/100 ml based on single sample exceedance in the summer period between 1 December to 31 March, then the Consent Holder shall also immediately notify the Manager and the Medical Officer of Health of the exceedance, and undertake any precautionary actions specified by the Medical Officer of Health. The Consent Holder shall also re-sample all sites specified in condition 29(d) above, as soon as practicable and within one week of receipt of the exceeding sample result, and also analyse the samples for faecal coliforms.	1	Auckland Council notified following elevated E. coli results.

Condition Number	Consent Condition Owhanake Discharge to Water (#37282)	Compliance Rating	Comments
29D	That samples shall be taken monthly of the receiving waters in tributaries to the upper Matiatia Wetland, the main wetland and the lower reaches of Matiatia Stream downstream of the wetlands, at least at the following locations. [These points were initially shown on plan titled "Sampling Points as Recommended by ARC Draft Resource Consent Conditions", dated 11 May 2004'', with the draft conditions to the hearing and are required to be specified in the Management Plan): (i) The western tributary, at least 10 metres upstream of the point of discharge;[W1) (ii) The western tributary, downstream of the point of discharge prior to the confluence with the eastern tributary [W2); (iii) The eastern tributary immediately upstream of the confluence with the western tributary; [W3] (iv) The main wetland tributary, immediately downstream of the confluence of the western and eastern tributaries [W4]; (v) The main wetland tributary immediately upstream of the confluence with the stream that drains into Matiatia Bay; [W5] (vi) The main wetland tributary immediately downstream of the confluence with the stream that drains into Matiatia Bay; [W6] (vii) The stream that drains into Matiatia Bay, at least 20 metres upstream of the beach foreshore; [W7] AND Once the discharge location is extended to include a discharge into the eastern tributary; (viii) The eastern tributary, at least 10 m upstream of the point of discharge. [W8] That sampling shall be undertaken at the same time and day of each month at the precise sample site locations as shown on the plan and included in the Management Plan, unless the Manager approves other locations in writing at the request of the Consent Holder.	1	Compliant. Low flows prevent samples on some occasions in summer.
30	That the Consent Holder shall analyse all the samples collected in accordance with condition 29 above for the parameters specified in the respective conditions and with the minimum detection limits specified in Appendix 1.	1	Compliant.
31	That the Consent Holder shall maintain the photographic record established under consent 26771 of the sampling locations in the wetland and stream and expand it to include all sites specified in part (d) of condition 29. The purpose of the photographic record shall be to identify changes in vegetation at specified locations within the wetland and Matiatia stream. In addition to the photographic record the Consent Holder shall also record observations of algal and/or bacterial growths in the lower Matiatia Stream.	1	Compliant.
32	That the samples required by the Monitoring Program specified in Condition 29 to 33 shall be collected and analysed in accordance with the latest edition of the "Standard Methods for the Examination of Water and Wastewater", published by the American Public Health Association, the American Water Works Association and the Water Environment Federation, or equivalent as approved in writing by the Manager.	1	Compliant.

Condition Number	Consent Condition Owhanake Discharge to Water (#37282)	Compliance Rating	Comments
33	That the results obtained in accordance with Conditions 29 to 33 shall be recorded in a log book and a copy forwarded to the Manager quarterly with the flow records required by condition 27 and within one month the date the sample was taken.	1	Compliant.
34	That the quality of the wastewater discharged from Plant A from the final point of the treatment process, immediately prior to its discharge into the natural wetland (as specified in condition 29(c)), shall comply with the following discharge standards: 5-day carbonaceous biochemical oxygen demand ($cBOD_5$) better than 10 g O_2/m^3 Total Suspended Solids (TSS) better than 10 g/m^3 Total Nitrogen (TN) better than 30 g N/m^3 Ammonia Nitrogen (NH_3&NH_4) better than 2 g N/m^3 Total Phosphorus (TP) better than 7 g P/m^3	N/A	Plant B has been installed and fully operational from January 2020.
35	That the quality of the wastewater discharged from Plant B from the final point of the treatment process, immediately prior to its discharge into the natural wetland (as specified in condition 29(c)), shall comply with the following standards: 5-day carbonaceous Biochemical Oxygen Demand ($cBOD_5$) better than 10g O_2/m^3 Total Suspended Solids (TSS) better than 10 g/m^3 Total Nitrogen4 better than 15 g N/m^3 Ammonia Nitrogen better than 2 g N/m^3 Total Phosphorus Summer better than 2 g P/m^3 Total Phosphorus Winter better than 4 g P/m^3 Dissolved oxygen better than 5 g O_2/m^3 pH 6.0 - 9.0	2	Non-compliant on two occasions (1 and 8 July 2025) for Ammonia Nitrogen and Total Nitrogen.
36	That the E. coli levels in the effluent immediately following discharge from the disinfection treatment system shall not exceed 50 MPN (or cfu)/100 mL.	1	Compliant.
37	That in the event of any sample having a contaminant quality that exceeds the limits specified in Conditions 34, 35 and 36 above. the following action shall be taken: • The Manager shall be advised of the exceedance and its possible cause as soon as practicable after receipt of the result. The Consent Holder shall implement any modifications to the treatment system and sampling regime in accordance with response actions specified in the Management Plan, or, in the event of significant adverse effects, implement appropriate mitigation measures that the Manager and Consent Holder consider appropriate following consultation. • The Consent Holder shall ensure action is taken immediately to address and remedy the problem and advise the Manager immediately of actions taken.	1	Compliant.

Condition Number	Consent Condition Owhanake Discharge to Water (#37282)	Compliance Rating	Comments
38	The consent holder shall ensure that the results of the monitoring undertaken in accordance with conditions 27 and 28 (flow monitoring) and conditions 29 to 36 (discharge quality and discharge quality standards) are reported to the Manager quarterly within 20 working days of the period ending 31 December, 31 March, 30 June and 30 September each year.	1	Ongoing.
39	The consent holder shall prepare an Annual Report and provide it to the Manager by 30 September each year. The Annual Report is to cover: SEE CONSENT PDF FOR LIST OF REQUIREMENTS	1	Compliant.
40	That the Consent Holder shall actively undertake investigations into the beneficial non potable reuse of the treated wastewater generated from the system, particularly wastewater generated during the summer period from 1 November to 31 March each year. The investigations shall be undertaken two yearly, first with in 6 months of the consent being exercised, and subsequently at two yearly intervals (unless agreed by the Manager that an investigation in that year is not necessary). The investigations shall be reported as part of the OWTP Annual Report required by condition 39 and shall involve the following: (1) That, the Consent Holder shall commission an independent investigation into reuse options for minimising the discharge of treated wastewater from the plant into the Owhanake wetland (particularly during summer). This shall include a detailed investigation of: (a) Possible reuse options for treated wastewater (b) The quality of the treated wastewater available for possible re-use (c) The demand for reuse of treated wastewater (d) The costs/economics of reuse of treated wastewater; (e) Possible health effects and risks (f) Additional if any treatment required for safe reuse of wastewater (g) The regulatory requirements for reuse of treated wastewater (h) The feasibility of re-use storage tanks. That the Consent Holder shall actively undertake investigations into the beneficial non potable reuse of the treated wastewater generated from the system, particularly wastewater generated during the summer period from 1 November to 31 March each year. The investigations shall be undertaken two yearly, first within 6 months of the consent being exercised, and subsequently at two yearly intervals (unless agreed by the Manager that an investigation in that year is not necessary). The investigations shall be reported as part of the OWTP Annual Report required by condition 39 and shall involve the following: (2) That the Consent Holder shall undertake public consultation in connection with the investigations required by clause (1) above;	1	Re-used as plant process water. Investigations ongoing for public use of effluent.

Condition Number	Consent Condition Owhanake Discharge to Water (#37282)	Compliance Rating	Comments
41	That should the Consent Holder wish to pursue off-site reuse of the wastewater, the Consent Holder shall ensure the following: a) The treated wastewater disinfection system and the wastewater reticulation system design shall be in accordance with the specifications for wastewater reuse in Auckland Regional Council Technical Publication 58 "On-site Wastewater Systems: Design and Management Manual" (TP58) as current at the time of the installation, or equivalent as approved in writing by the Manager That should the Consent Holder wish to pursue off-site reuse of the wastewater, the Consent Holder shall ensure the following: b) The Consent Holder shall provide a completed report of the investigation in accordance with the details required by condition 40 above and the proposed reuse system design details to the Manager and to the Medical Officer of Health, for their review and approval at least two months before the new reticulation works need to commence. That should the Consent Holder wish to pursue off-site reuse of the wastewater, the Consent Holder shall ensure the following: c) The Consent Holder shall obtain prior written approval from the Medical Officer of Health and from the Manager, prior to commencing any reticulation or other associated works for re-use.	N/A	No offsite reuse.
42	All complaints received by the consent holder about the discharges shall be logged immediately. The information shall include: a) the date. time, location and nature of the complaint; b) name, phone number and address of the complainant unless the complainant wishes to remain anonymous; c) action taken by WSL to remedy the problem; d) any equipment failure and remedial action taken; e) the weather conditions at the time of the complaint including estimates of wind direction, wind strength, temperature and cloud cover; and f) the date and name of the person making the entry. Details of any complaints received that affect the consent holder's ability to comply with the conditions of consent shall be provided to the Auckland Council within 24 hours of receipt of the complaint(s) or on the next working day.	1	Complaint log in place.
43	That the conditions of this consent (including any specified quantity) may be reviewed pursuant to section 128 of the Resource Management Act 1991 , by the giving of notice pursuant to section 129 of the Act, in the year of 2005 and subsequently at yearly intervals thereafter commencing in the month of June of that year, for any of the following purposes: SEE CEONSENT PDF FOR LIST OF REQUIREMENTS	1	Compliant.

Discharge to air compliance assessment (DIS60341182)

Condition Number	Consent condition Owhanake Discharge to air (#DIS60341182)	Compliance Rating	Comments
1	The discharge of contaminants into air shall be carried out in general accordance with the plans and all information submitted with the application, detailed below, and all referenced by the council as consent number DIS60341182: - Application form, and Owhanake WWTP Assessment of Environmental Effects (Rev.3), dated 25 June 2019 and prepared by Beca Ltd; - Owhanake Wastewater Treatment Plant Technical Odour Assessment (Rev.3), dated 26 June 2019 and prepared by Beca Ltd. - Emails prepared by Anshita Jerath, dated 24 July 2019, 26 July 2019 and 30 July 2019.	1	Compliant.
2	Air discharge consent number DIS60341182 shall expire 35 years from the date of commencement unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.	1	
3	Access to the relevant parts of the property shall be maintained and be available at all reasonable times to enable the servants or agents of Auckland Council to carry out inspections, surveys, investigations, tests, measurements or take samples whilst adhering to the consent holder's health and safety policy.	1	Compliant. Most recent compliance Officer inspection completed 14 April 2026.
4	All processes on site shall be operated, maintained, supervised, monitored and controlled to ensure that all emissions authorised by this consent are maintained at the minimum practicable level.	1	Ongoing.
5	Beyond the boundary of the site, there shall be no dust and/or odour caused by discharges from the site, which in the opinion of an enforcement officer, is the cause of a noxious, dangerous, offensive or objectionable effect.	1	Compliant.
6	No discharges from any activity on site shall give rise to visible emissions, other than water vapour, to an extent which, in the opinion of an enforcement officer, is the cause of a noxious, dangerous, offensive or objectionable effect.	1	Compliant.
7	Beyond the boundary of the site, there shall be no hazardous air pollutant, caused by discharges from the site, which is present at a concentration that causes, or is likely to cause adverse effects to human health, the environment or property.	1	Compliant.
8	At least one month prior to the installation of any component that increases the treatment capacity beyond 130m³ of wastewater per day, the Team leader – Central Compliance Monitoring, shall be notified in writing. The notification shall be accompanied by schematic plans of the upgraded wastewater treatment plant and a proposed revision of the Operations Management Plan in accordance with Condition 14.	1	Compliant.
9	All processes on site shall be operated in accordance with the Operations Management Plan submitted and certified in accordance with Condition 13 of this consent.	1	Ongoing.

Condition Number	Consent condition Owhanake Discharge to air (#DIS60341182)	Compliance Rating	Comments
10	All processing equipment, buildings, ducting and emissions control equipment shall be maintained in good condition and as far as practicable be free from leaks in order to prevent the escape of fugitive emissions.	1	Ongoing.
11	The meteorological conditions and proximity of sensitive receptors shall be considered prior to undertaking any potentially odorous activities at the site.	1	Compliant.
12	A walkover inspection of the site shall be undertaken at least once per week to identify any odours that may be originating from the site. The results shall be recorded and any odour potentially detectable off-site investigated immediately. Where necessary, remedial action shall be undertaken as soon as practicable. The procedures for the walkover, recording of the results and any remedial actions taken shall be as specified in the Operations Management Plan required by Condition 13.	1	Ongoing.
13	Within three months of the date of commencement of this consent an Operations Management Plan (OMP) shall be submitted to the Team Leader – Central Compliance Monitoring for certification, to confirm that the activities undertaken in accordance with the OMP will achieve the objectives of the plan and compliance with the conditions of this air discharge consent. Any subsequent review of the OMP shall also be submitted to the council for certification. The consent holder shall meet the costs of the production, certification, monitoring and review of the OMP. REFER TO DECISION DOCUMENT FOR FURTHER DETAILS.	1	O&M manual dated February 2020 in place.
14	The OMP shall be reviewed prior any substantial alterations to the site and at least once every three years and any subsequent changes to the certified OMP shall be submitted to the council for certification prior to implementation. The council will advise the Consent Holder in writing if any aspects of the OMP are considered to be inconsistent with achieving the provisions of this consent.	1	Compliant. Most recent air quality management plan approved by Auckland Council in May 2024. Next revision due 2027.
15	Details of all inspections, records, monitoring and test results that are required by the conditions of this consent shall be kept for a minimum of two years from the date of each entry and shall be provided to the council on request.	1	Ongoing.
16	The council shall be notified as soon as practicable in the event of any significant discharge to air, which results or has the potential to result in a breach of air quality conditions or adverse effects on the environment. The following information shall be supplied: a) Details of the nature of the discharge; b) An explanation of the cause of the incident; and c) Details of remediation action taken.	1	Compliant.

Condition Number	Consent condition Owhanake Discharge to air (#DIS60341182)	Compliance Rating	Comments
17	All air quality complaints that are received shall be recorded. The complaint details shall include: a) The date, time, location and nature of the complaint; b) The name, phone number and address of the complainant, unless the complainant elects not to supply these details; c) Weather conditions, including approximate wind speed and direction, at time of the complaint; d) Any remedial actions undertaken. Details of any complaints received shall be provided to the council within one working day of the complaint.	1	Complaint log in place.
18	Under section 128 of the RMA, the conditions of this consent may be reviewed by the Manager Resource Consents at the consent holder's cost in order to: a) Deal with any significant adverse effects on the environment arising from the exercise of the consent which was not foreseen at the time the application was considered and which is appropriate to deal with at the time of the review. b) With regard to (a) above, should there be complaints related to odour from the WWTP received by the Council or unforeseen adverse odour effects, then the Team Leader – Central Compliance Monitoring may request the installation of a meteorological monitoring station to measure wind speed, wind direction and temperature at the site. c) Consider the adequacy of conditions which prevent nuisance and adverse effects beyond the boundary of the site, particularly if regular or frequent complaints have been received and validated by an enforcement officer. d) Consider developments in control technology and management practices that would enable practical reductions in the discharge of contaminants to air. e) Alter the monitoring requirements, including requiring further monitoring, or increasing or reducing the frequency of monitoring. f) Take into account any Act of Parliament, regulation, national policy statement, regional policy statement or relevant regional plan that relates to limiting, recording or mitigating emissions by this consent. Or, the consent may be reviewed by the Manger Resource Consents at any time, if it is found that the information made available to the council in the application contained inaccuracies which materially influenced the decision and the effects of the exercise of the consent are such that it is necessary to apply more appropriate conditions.	1	N/A

Appendix C. Receiving environment sampling locations


S1
S7
S2
S3
S4
S6
S5
Ocean View Road
Owhanake (Waiheke) Treatment

Appendix D. Data Sources

Download location of environmental monitoring data used in this report.

Category	Parameter	Source platform	Tag/ID
Influent volume	Matiatia inflow	Pi	DPMAT_80_FQ_001_VOLUMEDAY
Influent volume	Commercial inflow	N/A	Calculation
Influent volume	Total inflow		DTWHK_20_FT_001_PV
Rainfall volume	N/A	Auckland Council	659401
Effluent volume	N/A	Pi	DTWHK_80_FQ_001_EFFVOLDAY$
Influent quality	All	Pi	DTWHK_20_1_S8_XXX*
Effluent quality	DO, pH	ID form	DTWHK_51_15_S7_XXX*
Receiving environment	All	Pi	DTWHK_51_15_S1_XXX* DTWHK_51_15_S2_XXX* DTWHK_51_15_S3_XXX* DTWHK_51_15_S4_XXX* DTWHK_51_15_W6_XXX* DTWHK_51_15_S5_XXX*
Sediment quality	All	Labware	N/A
Effluent Reuse Investigation	All	Labware	N/A

Note: *XXX to be replaced by parameter code (BOD, TSS, TNH3N, TKN, NOX, TP, DRP, ECOLI).