



Pukekohe Wastewater Treatment Plant 2025-2026 Annual Report

Final September 2026

QUALITY INFORMATION

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2				
3				

APPROVED

Date	Name	Position	Signature
30/09/2026	Michiel Jonker	Environmental Care Manager	

CONSENT CHANGE AND MONITORING HISTORY

Change type	Description	Effective date	Reference / condition	Reporting / monitoring implications
Consent reissue	AUTH137406.01.02 issued, consolidating discharges to land, water and air (odour). Replaced previous consents (37953 & 37993).	28/03/2018	AUTH1374 06.01.02	Established unified conditions for flows, loads, air quality and reporting.
Riparian planting plan	Riparian Planting Plan developed with Te Taniwha o Waikato to meet Condition 13, covering at least 1 ha of planting along Parker Lane Stream. Planting began after plan finalisation, aligned with Matariki planting season.	Nov 2019 (plan issued); planting commenced winter 2020	Conditions 11–14	Plan sets species, zones, densities, and maintenance. Annual maintenance and replacement planting required; updates reported through Annual Report and CLG.
Management plan updates	Requirement to prepare and maintain an Operations & Management Plan, Odour Management Plan, Pest Management Plan, and Avian Botulism Management Plan.	2018 onwards: First review due: March 2023 (5 years after commencement). Next review due: March 2028.	Conditions 8–16, 37–39	Last management plans reviewed and prepared for the WWTP in 2023
Community engagement	Establishment of a Community Liaison Group and a Te Taniwha o Waikato Liaison Group within 6 months of commencement.	2018	Conditions 5–7B	Annual meetings: groups to receive Annual Report, OMP, Riparian and Pest Plans, complaints register.
Reporting requirements	Annual Report due 30 September each year, covering monitoring results, compliance commentary, and remedial actions.	Ongoing	Condition 17	Annual reporting to WRC, CLG, and Te Taniwha o Waikato Liaison Group.
Review provisions	Formal review of consent conditions by WRC possible every 5 years after commencement (5th, 10th, 15th, etc.).	2023, 2028, ...	Condition 18	WRC may amend monitoring requirements, address effects, or adjust conditions.
Monitoring and Technology Review	Comprehensive Monitoring and Technology Review Report required at 5th, 10th, 20th, and 30th anniversaries.	2023 (5 th anniversary), 2028 (10 th anniversary) 2038 (20 th anniversary, 2048 (30 th anniversary)	Condition 21–22	Must assess monitoring adequacy, technology advances, and Best Practicable Option (BPO). 2023 report completed by Stantec ¹ .
Cultural Impact Assessment	Updated Cultural Impact Assessment required at 10th, 20th and 30th anniversaries unless iwi advise otherwise.	2023 (5 th anniversary), 2028 (10 th anniversary) 2038 (20 th anniversary, 2048 (30 th anniversary)	Condition 19	Ensures cultural effects are reviewed regularly in partnership with Te Taniwha o Waikato.

¹ The 2023 MTR concluded that the current treatment configuration and operational practices remain the Best Practicable Option (BPO) for the site. No additional process changes were required, although incremental optimisation opportunities were identified (e.g., fine-tuning wetland management and routine asset checks). These recommendations have been adopted into operational practice, and no formal amendments to the consent conditions were sought.

EXECUTIVE SUMMARY

This report provides an overview of the operational performance and compliance status of the Pukekohe Wastewater Treatment Plant (WWTP) for the period from 1 July 2025 to 30 June 2026 against the provisions of consent AUTH137406.01.02. Operated by Watercare Services Limited (Watercare), the plant treats wastewater from the Pukekohe, Tuakau, Pōkeno, Patumahoe and Paerata areas and discharges treated effluent in compliance with resource consents.

Key findings during the reporting period include:

- **Effluent volumes and quality:** The plant successfully met the consented limits for effluent discharge volumes, with an average daily discharge of 13,696 m³/day, well below the consented maximum of 104,800 m³/day. Effluent quality met all consent conditions, with parameters such as biochemical oxygen demand (cBOD₅), total suspended solids (TSS), ammoniacal nitrogen (NH₄-N), total nitrogen (TN), total phosphorus (TP), and *Escherichia coli* all within permitted limits. *E. coli* concentrations were generally at or near the detection limit (1.6 cfu/100 mL), confirming good membrane performance and reliable UV disinfection.
- **Nutrient loads:** Median TN loads were around 9–15% of the seasonal consent limits, closely matching the proportion of flow to the consented maximum (≈13%). This shows nitrogen performance is well aligned with plant throughput. By contrast, median TP loads represented 17–34% of seasonal limits, with the higher summer proportion suggesting potential for further optimisation of phosphorus removal.
- **Air quality and odour control:** Routine odour checks identified no offensive odours beyond the site boundary, and no odour complaints were reported during 2025–2026 which related to the plant operations.
- **Complaints and incidents:** One complaint was received during the reporting period, initially thought to relate to the WWTP but confirmed as a network air release valve issue. It was redirected to the appropriate team and resolved. No WWTP-related odour or noise complaints were recorded.
- **Future developments:** No major changes to this plant are planned for 2026–2027.

Overall, the Pukekohe WWTP performed well and within its consented parameters for 2025–2026, with nutrient loads demonstrating strong nitrogen removal performance and opportunities for further optimisation of phosphorus management.

TABLE OF CONTENTS

1	Introduction	1
1.1	Consent and plans	1
1.2	Scope	1
2	Operational details.....	3
2.1	Current operations	3
2.2	Changes in reporting year	3
2.3	Future changes	3
3	Methodology.....	4
3.1	Monitoring.....	4
3.2	Data handling and analysis	4
3.3	Compliance criteria.....	4
4	Results.....	6
4.1	Effluent discharge volumes	6
4.2	Effluent quality	8
4.2.1	Compliance summary	8
4.2.2	Concentration patterns.....	8
4.2.3	Nutrient loads	10
4.2.4	Long-term trends (2022-2026).....	11
4.3	Air quality	14
4.4	Complaints and incidents	14
4.5	AUTH136310.01.01.....	14
4.6	AUTH139710.01.01.....	15
4.7	Summary of compliance	15
5	Conclusion.....	16

Appendix A. Assessment of Compliance

Appendix B. Effluent Volumes and Quality Data

Appendix C. Data Sources

LIST OF FIGURES

Figure 4-1. Rainfall and treated wastewater volumes discharged from the wetland to Parker Lane Stream (2025-2026).	7
Figure 4-2. Flows from the WWTP to the wetland (2025-2026).	7
Figure 4-3. Post-UV effluent concentrations main compliance parameters (2025–2026).....	10
Figure 4-4. Total Nitrogen (TN) and Total Phosphorus (TP) loads compared with seasonal consent limits at Pukekohe WWTP (2025–2026).	11
Figure 4-5. Boxplots showing monthly and seasonal distribution of Total Nitrogen (TN) and Total Phosphorus (TP) loads at Pukekohe WWTP (2022–2026).	12
Figure 4-6. Inter-annual trends in seasonal mean nutrient loads (TN and TP) at Pukekohe WWTP (2022–2026).	12
Figure 4-7. Four-year trends in treated wastewater quality parameters at Pukekohe WWTP (2022–2026).	13
Figure 4-8. The Parker Lane pipe bridge.	14
Figure 4-9. The treatment plant entrance pipe bridge.	15
Figure 4-10. The channel under the vehicle bridge	15

LIST OF TABLES

Table 1-1: Abbreviations.....	vi
Table 1-1-1 Pukekohe WWTP Management Plans	1
Table 3-1: Compliance assessment criteria	4
Table 4-1. Summary of annual discharge volumes and rainfall (2022–2026).	8
Table 4-2. Effluent compliance results for Pukekohe WWTP (2025-2026). Yellow indicates the consent limits and green indicates compliance.....	9
Table 4-3: Download location of environmental monitoring data used in this report	39

ABBREVIATIONS

For ease of reading, this report uses abbreviations for some technical terms. Table 1-1 lists these abbreviations.

Table 1-1: Abbreviations

Abbreviation	Description
ASR	Activated Sludge Reactors
BPO	Best Practicable Option
cBOD ₅	5-day carbonaceous biochemical oxygen demand
CLG	Community Liaison Group
DO	Dissolved oxygen
<i>E. coli</i>	<i>Escherichia coli</i>
IANZ	International Accreditation New Zealand (advice note reference)
MBR	Membrane Bioreactor
MTR	Monitoring and Technology Review
NH ₄ -N	Ammoniacal nitrogen (mg/L), reported in the consent as NH ₃ -N
NHx	Ammonia and ammonium, reported in milligrams nitrogen (consent term)
OMP	Operations Management Plan
PI	Plant Information system (data platform)
TP	Total phosphorus
TN	Total nitrogen
TSS	Total suspended solids
TTOW	Te Taniwha o Waikato
UV	Ultraviolet
Watercare	Watercare Services Limited
WWTP	Wastewater Treatment Plant

1 INTRODUCTION

Watercare operates the Pukekohe Wastewater Treatment Plant (WWTP) at 241 Parker Lane, Pukekohe. The WWTP discharges treated wastewater via artificial wetlands (wetlands) to the Parker Lane Stream that discharges into the Waikato River downstream of Tuakau.

The discharge consent (AUTH137406.01.02) for the WWTP requires an annual performance report. The report includes monitoring results, plant performance and an assessment of compliance issues (if relevant).

This annual report presents the results for the Pukekohe WWTP resource consent compliance from 1 July 2025 to 30 June 2026. Compliance against each consent condition is reported in Appendix A.

1.1 Consent and plans

The discharge consent that currently applies to the Pukekohe WWTP is AUTH137406.01.02 (Discharge to land, air, and water). Waikato Regional Council issued it in 2017, and it will expire in 2052.

This report also includes commentary on AUTH136310.01.01 (branch sewer pipe bridges) and AUTH139710.01.01 (vehicle bridge).

The consent requires management plans, listed in Table 1-1. Watercare has circulated all plans, as relevant, to the Community Liaison Group, Te Taniwha o Waikato, and Waikato Regional Council.

As agreed with Waikato Regional Council, the main Operations Management Plan (OMP) was submitted in July 2023 after final commissioning of the plant upgrades.

Table 1-1-1 Pukekohe WWTP Management Plans

Management Plan	Detail
Site-specific plans	Plans include the pest management plan, the avian botulism management plan, and the odour management plan.
Riparian planting plan	Watercare prepared this Plan with Te Taniwha o Waikato. Planting occurred in September 2020 and maintenance is ongoing.
Operations Management Plan	Prepared in June 2023, after the plant upgrade was completed and commissioned. It integrates operational practice, the environmental monitoring programme and reporting of results.

1.2 Scope

This report addresses Condition 17 of the discharge consent, which requires an annual report containing, at a minimum:

- A summary of the monitoring results required by the conditions of these resource consents for year ending 30 June;
- A critical assessment of the monitoring data collected and comment on any emerging trends;
- Commentary on compliance with the conditions of this resource consent;

- d. Any reasons for non-compliance or difficulties in achieving compliance with the conditions of this resource consent and a description and a summary of the effectiveness of any remedial works undertaken; and
- e. Any other issue considered relevant by the consent holder.

This report also includes commentary on AUTH136310.01.01 (branch sewer pipe bridges) and AUTH139710.01.01 (vehicle bridge).

2 OPERATIONAL DETAILS

2.1 Current operations

The Pukekohe WWTP system consists of the following unit processes:

- Primary screens, grit removal and secondary screens
- Activated Sludge Reactors (ASR)
- Membrane Bioreactor (MBR)
- Ultraviolet (UV) disinfection
- Wetlands (no further treatment)
- Biofilter (odour treatment)
- Sludge oxidation pond

The treatment plant also has a septage disposal facility that accepts up to 30 m³ of domestic wastewater/septage (weekdays only).

Watercare discharges the treated wastewater to Parker Lane Stream and ultimately to the Waikato River.

2.2 Changes in reporting year

No changes to the plant operations have occurred in the 2025-2026 period.

2.3 Future changes

Within the future 2026-2027 reporting period, an additional pump was installed at the discharge point to the Parker Lane Stream, to assist in maintaining wetland levels during wetter periods. It was installed in July 2026.

No other changes are planned for 2026-2027.

3 METHODOLOGY

3.1 Monitoring

Monitoring comprised continuous measurement of treated wastewater discharge volumes and routine effluent quality sampling.

Continuous monitoring was undertaken at the treatment plant discharge and the constructed wetland discharge with flowmeters, recording the total daily discharge volumes. Effluent quality was monitored through fortnightly grab samples at two compliance locations: (i) the discharge points of the UV disinfection unit ("post-UV"), and (ii) the constructed wetland outlet. Samples were analysed by an IANZ-accredited laboratory for five-day carbonaceous biochemical oxygen demand (cBOD₅), total suspended solids (TSS), ammoniacal nitrogen (NH₄-N), total nitrogen (TN), total phosphorus (TP), and *Escherichia coli* (*E. coli*).

No changes were made to the monitoring programme or sampling locations in the reporting period.

3.2 Data handling and analysis

Compliance assessments were undertaken using monitoring data extracted from Watercare's Pi system and the Auckland Council Environmental Data Portal. Daily discharge volumes and effluent quality results are presented in Appendix B, and were extracted using the data tags listed in Appendix C.

Daily discharge volumes and effluent quality results were assessed against the consented limits. Median concentrations and 90th percentile concentrations were calculated using all data from 1 July 2025 to 31 June 2026. However, where specified by the consent, compliance with median concentration limits was determined using rolling sets of 20 consecutive sample events, including those prior to the current reporting period. Seasonal median TN and TP loads were calculated separately for the summer period (December to May inclusive) and winter period (June to November inclusive). Daily nutrient loads were calculated by multiplying the relevant parameter with the corresponding daily discharge volumes.

3.3 Compliance criteria

The assessment of the WWTP performance considers:

- Results of compliance monitoring
- Recorded incidents and complaints.

Watercare assesses compliance with the consent using the same compliance rating system utilised by Auckland Council (Table 3-1).

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

Rating	Detail
	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 Effluent discharge volumes

The consent (AUTH137406.01.02) authorises up to 104,800 m³/day of treated wastewater to Parker Lane Stream. Figure 4-1 shows the effluent discharge volumes from the wetland to the stream alongside rainfall totals for the period 1 July 2025 to 30 June 2026. Condition 30 of the consent also requires Watercare to monitor flows from the WWTP to the wetland; these are presented in Figure 4-2.

Discharge volumes remained well below the consented limit of 104,800 m³/day throughout the reporting year. The maximum daily discharge recorded was 22,211 m³/day, less than one-quarter of the authorised limit. Annual discharge totalled 4,999,116 m³, with a mean of 13,696 m³/day (median 13,656 m³/day). These values are slightly higher than those of the previous year (2024–2025: total 4,181,804 m³; mean 11,457 m³/day), continuing a gradual upward trend observed since 2021–2022 (Table 4-1).

Rainfall for the reporting period totalled 1,511 mm, with rain recorded on 181 days. The maximum daily rainfall was 81.5 mm, and there were 18 heavy rain days (>25 mm). This represents a generally wetter year compared with 2024–2025 (total rainfall 1,367 mm; maximum daily 63 mm; 16 heavy rain days). Peaks in discharge volumes aligned with these wetter periods but remained well within the consented limit.

Flows from the plant to the constructed wetland (Figure 4-2.) showed the same rainfall-driven variability as in Figure 4-1, with sharp peaks during wet-weather. Flows to the wetland generally ranged between 8,871–32,700 m³/day and averaging at 14,467 m³, consistent with previous years.

Overall, the results confirm that discharge volumes remained compliant with consent requirements across the year. No exceedances of the authorised maximum occurred, and observed variability was attributable to rainfall-driven inflows rather than operational issues.

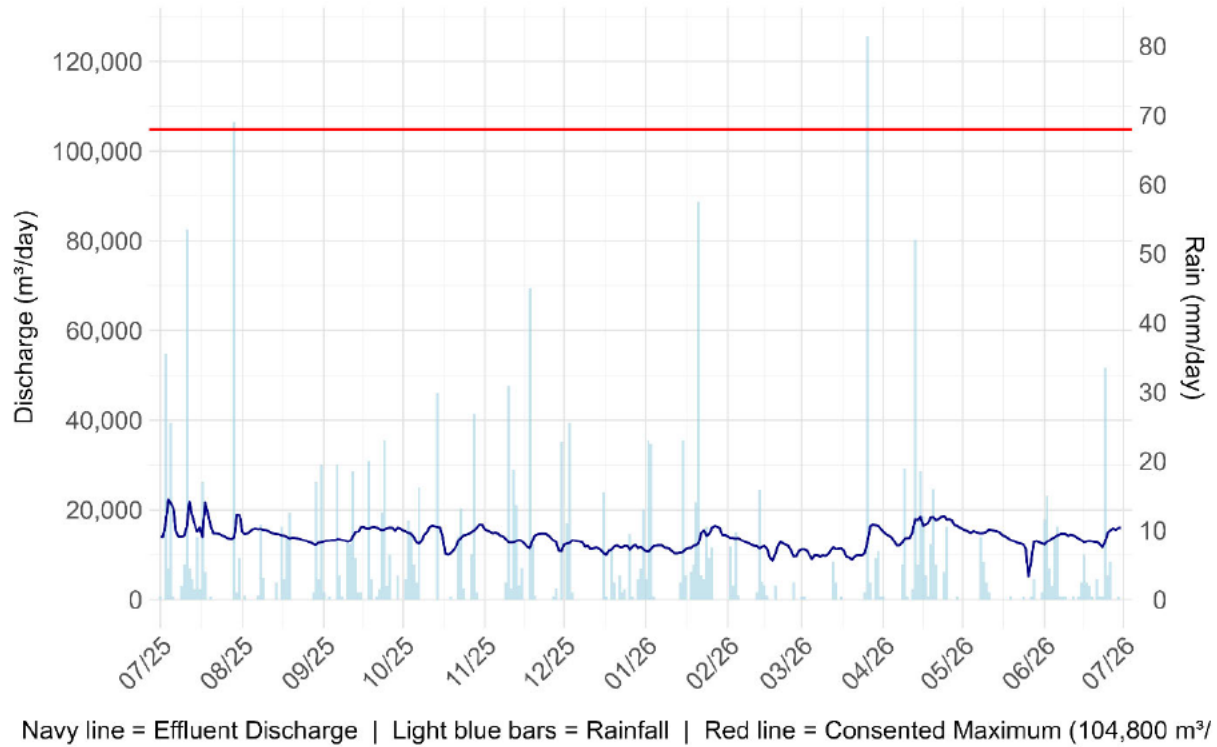


Figure 4-1. Rainfall and treated wastewater volumes discharged from the wetland to Parker Lane Stream (2025-2026).

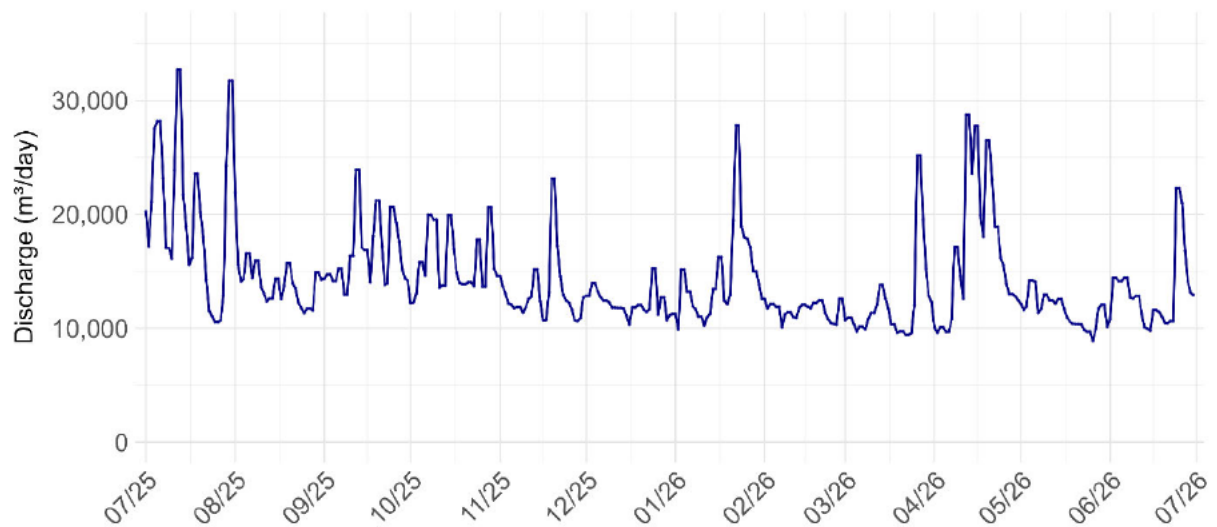


Figure 4-2. Flows from the WWTP to the wetland (2025-2026).

Table 4-1. Summary of annual discharge volumes and rainfall (2022–2026).

Year	Discharge (m ³)				Rainfall (mm)					Compliance
	Total	Daily Mean	Daily median	Daily max	Total	Mean Daily	Max Daily	Wet Days (≥0.1 mm)	Heavy Rain Days (>25 mm)	
25-26	4,999,116	13,696	13,656	22,211	1,511	4.14	82	181	18	Compliant
24-25	4,181,804	11,457	11,118	25,469	1,367	3.74	63	187	16	Compliant
22-23	3,901,339	10,659	10,891	19,313	1,158	3.16	53	181	11	Compliant
21-22	3,674,017	10,066	12,181	22,104	1,968	5.39	237	215	20	Compliant

4.2 Effluent quality

4.2.1 Compliance summary

Table 4-2 summarises treated wastewater results relative to consent limits.

- All concentration parameters (cBOD₅, TSS, NH₄-N, *E. coli*) were compliant with median and 90th percentile limits.
- Nutrient loads (TN and TP) were well below seasonal median consent limits in both reporting seasons (Dec–May and Jun–Nov).
- Occasional short-term peaks were observed (e.g., TN up to 167 kg/day; TP up to 133 kg/day in June 2025), but these did not affect seasonal median compliance.

All parameters complied with consent conditions during 2025–2026.

4.2.2 Concentration patterns

Figure 4-3 illustrates time-series concentrations at the post-UV discharge point for the reporting period. The key findings include:

- **cBOD₅ and TSS:** Values typically remained low, with medians of 0.7 mg/L and 1.0 mg/L respectively, well below limits (median ≤5; 90th percentile ≤10). Several spikes occurred throughout the reporting period, with a maximum cBOD₅ result of 6.7 mg/L on the 25 February 2026 and maximum TSS result of 6.0 mg/L on the 24th of June 2026. These were the result of rainfall impacts on the treatment process, but the spikes did not affect the overall compliance of the plant.
- **NH₄-N:** Concentrations were consistently very low (median 0.07 mg/L).
- ***E. coli*:** Results were consistently at or near the analytical detection limit (median 1.6 cfu/100 mL), indicating good membrane performance and robust UV disinfection performance.

Table 4-2. Effluent compliance results for Pukekohe WWTP (2025-2026). Yellow indicates the consent limits and green indicates compliance.

Parameter	Units	n	Minimum	Average	Maximum	Consented Maximum	Median	Consented Median	90 th Percentile	Consented 90 th Percentile	Compliant
Discharge Volume	m ³ /day	365	5,156	13,696	22,211	104,800	13,656	–	16,294	–	Yes
cBOD ₅	mg O ₂ /L	52	0.5	1.1	6.7	–	0.7	≤ 5	2.29	≤ 10	Yes
TSS	mg/L	52	1.0	1.6	6.0	–	1.0	≤ 5	3.3	≤ 10	Yes
NH ₄ -N	mg N/L	52	0.019	0.066	0.1	–	0.068	≤ 1	0.095	≤ 2.3	Yes
Total N (Dec–May)	kg/day*	52	8.7	15.1	36.1	–	13.4	≤ 88	–	–	Yes
Total N (Jun–Nov)	kg/day*	52	10.0	15.6	85.2	–	16.9	≤ 185	–	–	Yes
Total P (Dec–May)	kg/day*	52	0.7	10.0	32.4	–	7.4	≤ 22	–	–	Yes
Total P (Jun–Nov)	kg/day*	52	1.3	16.0	46.2	–	14.2	≤ 85	–	–	Yes
<i>Escherichia coli</i>	cfu/100 mL	52	0.9	1.6	18	–	1.6	≤ 50	–	1.7	Yes

*Note: Loads are calculated from grab sample concentrations and daily flows; medians for TN and TP are assessed against seasonal consent limits.

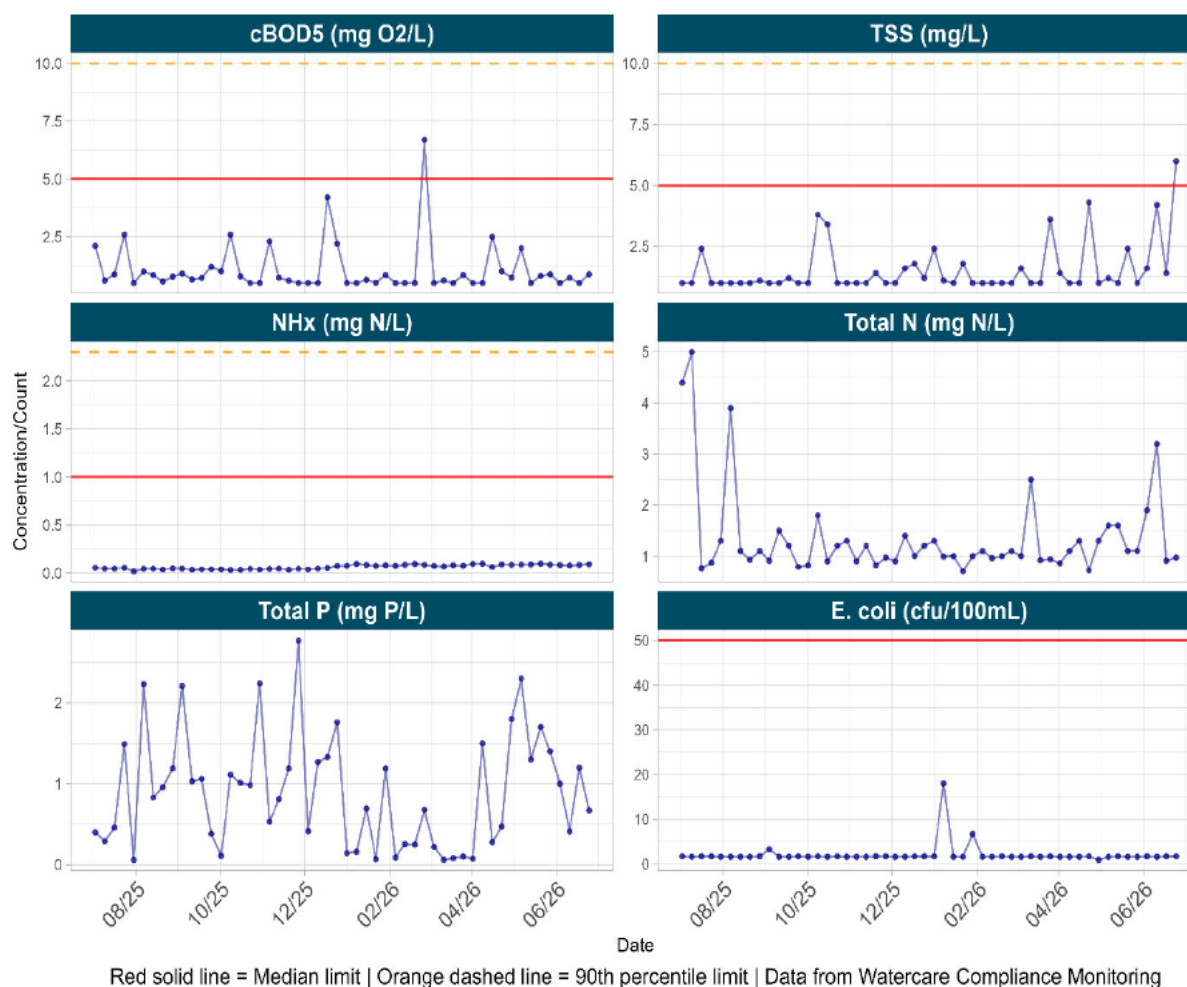


Figure 4-3. Post-UV effluent concentrations main compliance parameters (2025–2026).

4.2.3 Nutrient loads

Figure 4-4 shows weekly TN and TP loads for the reporting period compared against the consent limits.

- **TN:** Median seasonal loads were 13.4 kg/day (Dec–May) and 16.9 kg/day (Jun–Nov), compared with limits of 88 and 185 kg/day, respectively.
- **TP:** Median seasonal loads were 7.4 kg/day (Dec–May) and 14.2 kg/day (Jun–Nov), compared with limits of 22 and 85 kg/day, respectively.
- The current daily median discharge volume is about 13% of the consented maximum. Median total nitrogen loads are roughly 15% and 9% of the respective seasonal limits, indicating nitrogen removal performance is consistent with plant throughput relative to flow. In contrast, median total phosphorus loads are around 34% and 17% of the seasonal limits, with the higher summer proportion suggesting potential to refine operations to improve phosphate removal.

Loads were typically <20 kg/day for TN and TP, with short-lived peaks observed during high-flow periods.

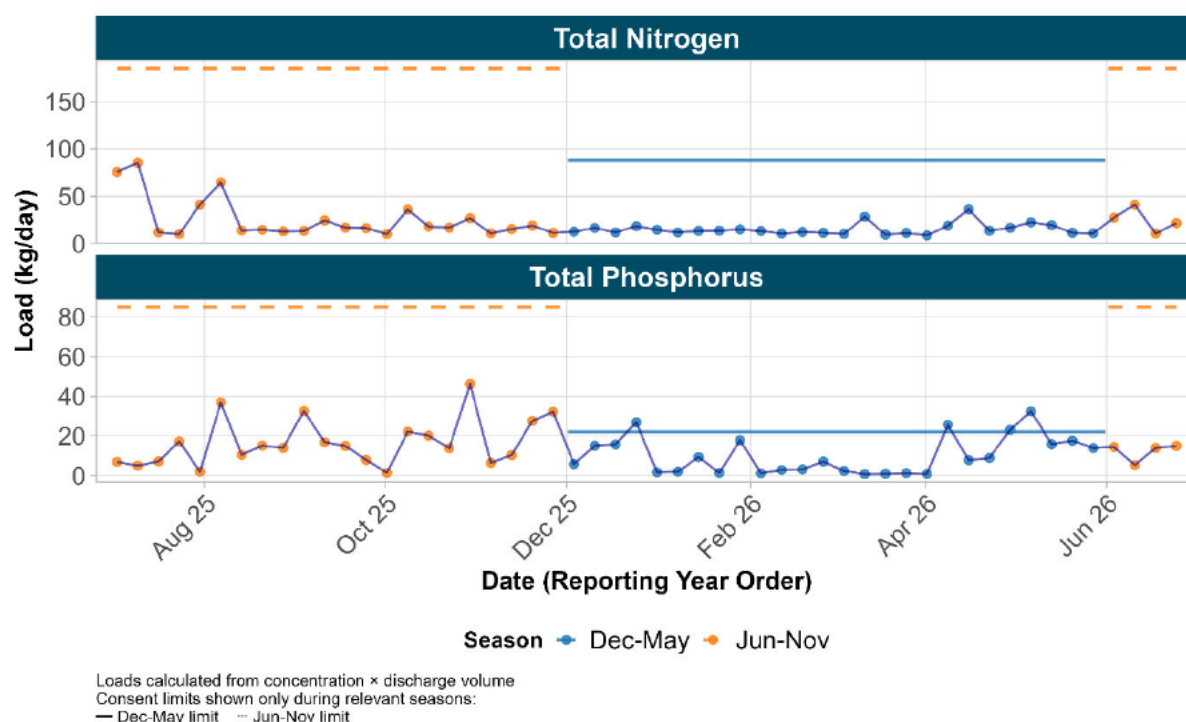


Figure 4-4. Total Nitrogen (TN) and Total Phosphorus (TP) loads compared with seasonal consent limits at Pukekohe WWTP (2025–2026).

4.2.4 Long-term trends (2022–2026)

Supplementary analyses were carried out using data from the past four years (2022–2026) to explore patterns in nutrient loads and effluent quality beyond the annual compliance period. Daily TN and TP loads were derived by multiplying measured concentrations (mg/L) by the corresponding discharge volumes (m³/day). Variation in TN and TP loads between months, seasons, and years was tested using non-parametric Kruskal–Wallis tests, with the confidence threshold set at $p < 0.05$. Post-hoc pairwise comparisons were undertaken where overall differences were significant.

Figures 4-5 and 4-6 show monthly distributions and seasonal means of TN and TP loads. Both figures indicate greater variability in wetter months, with higher winter means particularly for TN, but no statistically significant seasonal differences were detected ($p = 0.2$). However, statistically significant ($p = 0.02$) seasonal differences were determined for TP. Importantly, monthly and seasonal medians remained well below consent limits in all cases.

Across the reporting years 2022–2026, statistical testing confirmed significant inter-annual differences in TN and TP ($p < 0.001$) loads. The highest annual loads occurred in 2022–2023, while the lowest were recorded in 2023–2024 for TN, and 2025–2026 for TP. Rainfall and effluent volumes also varied between years (Section 4.1). The largest single load events (e.g., TN of 487 kg/d on 1 February 2023 and TN ~167 kg/d and TP ~133 kg/d in June 2025) coincided with high flows, and other comparable high TN events (>150 kg/d) occurred during peak rainfall, particularly in August and September 2022. No large load events occurred in 2025–2026. In contrast, effluent concentrations of cBOD₅, TSS, NH₄-N, TN, TP, and *E. coli* remained low and stable throughout the period (Figure 4-7). Taken together, these results suggest that differences in annual loads are most plausibly linked to rainfall-driven flow variability rather than treatment performance. All consent conditions were consistently met.

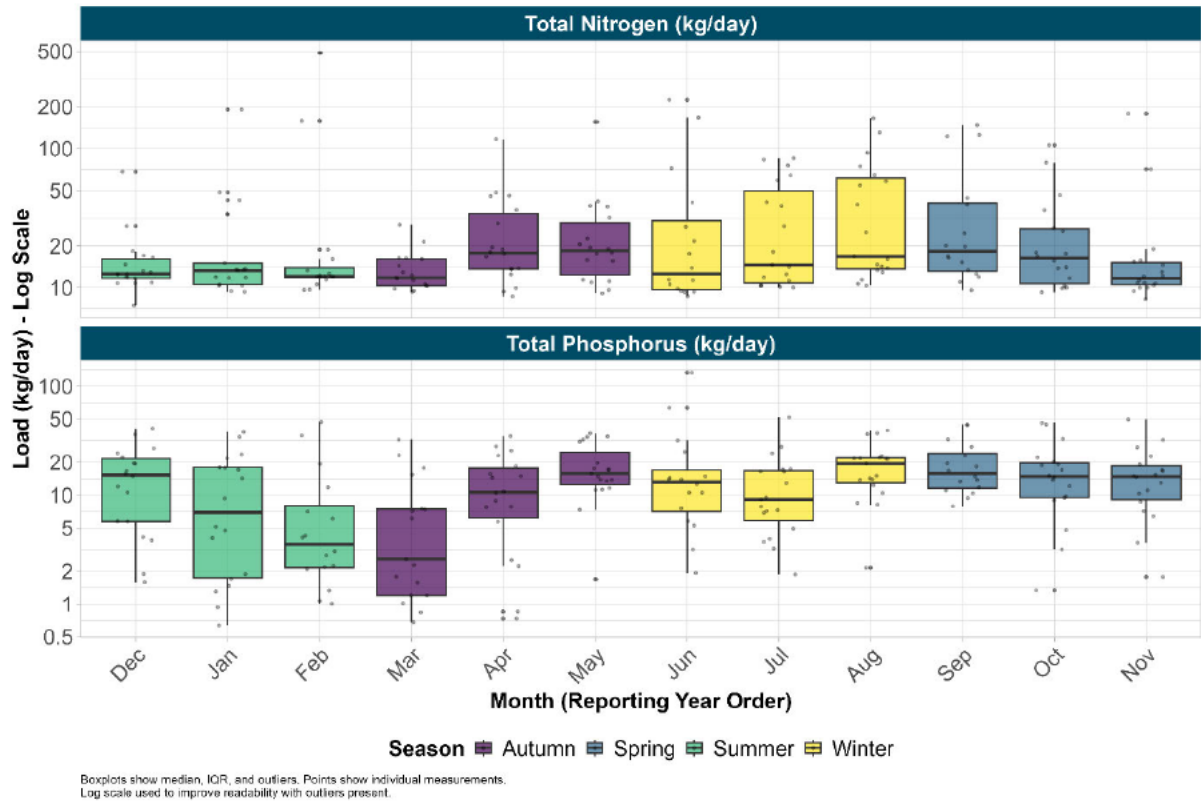


Figure 4-5. Boxplots showing monthly and seasonal distribution of Total Nitrogen (TN) and Total Phosphorus (TP) loads at Pukekohe WWTP (2022–2026).



Figure 4-6. Inter-annual trends in seasonal mean nutrient loads (TN and TP) at Pukekohe WWTP (2022–2026).

Figure 4-7 presents four-year trends (2022–2026) in median effluent concentrations and nutrient loads for key parameters at Pukekohe WWTP. Annual medians are shown with linear trend lines and confidence intervals. The results indicate consistent or improving performance for most parameters. Median cBOD₅ concentrations declined steadily, suggesting effective organic matter removal. NH₄-N concentrations also decreased, with values in 2025 and 2026 near zero, supporting strong nitrification. Total nitrogen loads followed a downward trend across the three-year period, despite gradually increasing effluent flows (Section 4.1), however a slight rise has occurred within 2025-2026 (Section 3.4). Total phosphorus loads dipped in 2024 before rising slightly in 2025 and 2026, though overall values remained low compared with consent limits. TSS shows no upward trend, having typically very low results in 2024-2026. *E. coli* concentrations remained consistently at or near the detection limit (1.6 cfu/100 mL), well within consent requirements, reflecting reliable UV disinfection.

Overall, the four-year analysis indicates that Pukekohe WWTP continues to perform reliably within its consented parameters. Trends suggest incremental improvement in organic and nitrogen removal efficiency, while phosphorus and solids remain well controlled. Variability in annual nutrient loads is best explained by rainfall-driven inflows rather than treatment limitations.

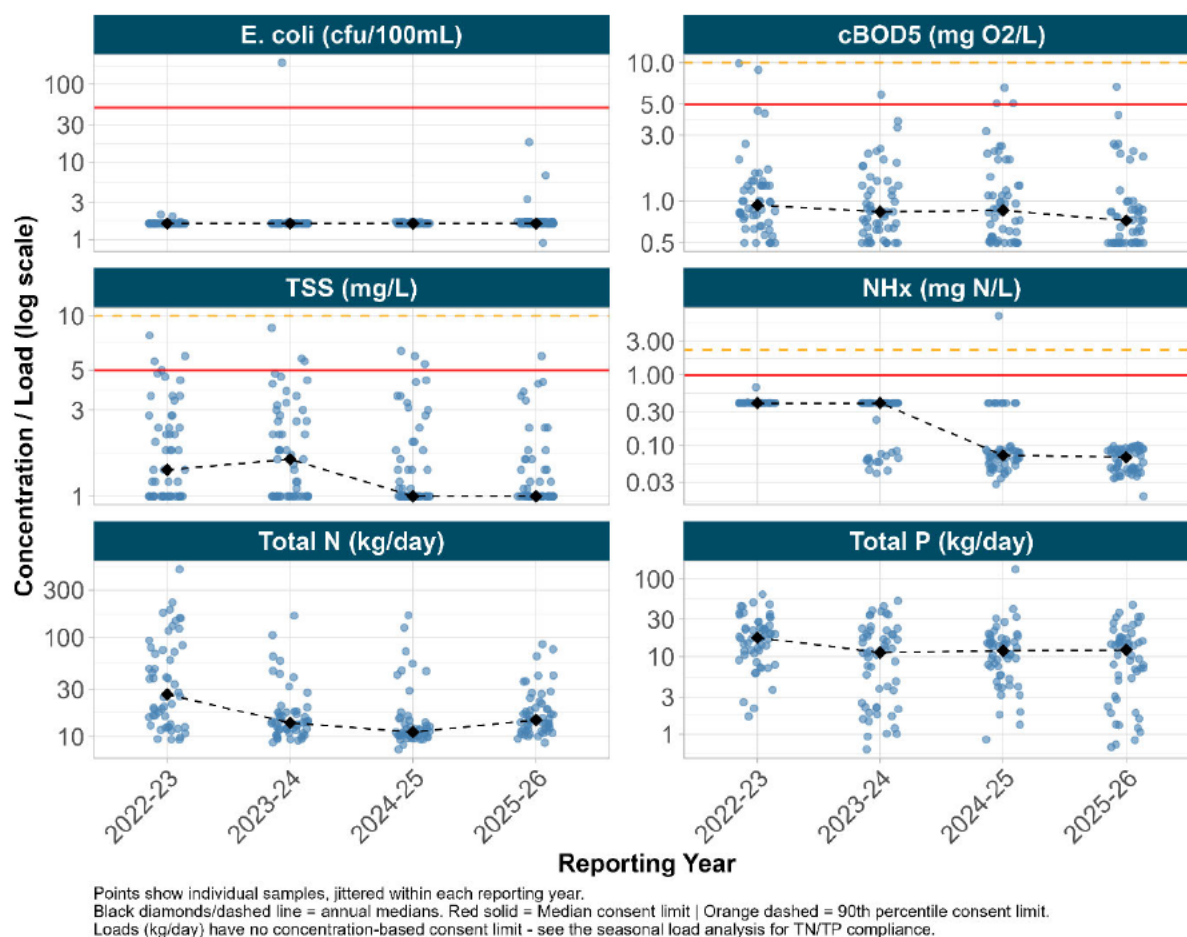


Figure 4-7. Four-year trends in treated wastewater quality parameters at Pukekohe WWTP (2022–2026).

4.3 Air quality

The site conducts a daily odour walkover on weekdays and maintains weekly logs. There were no offensive odours noted at the site boundary between July 2025 and June 2026 and no odour complaints related to the Pukekohe WWTP were recorded.

4.4 Complaints and incidents

One complaint was received during the 2025–2026 reporting period. On 10 July 2025, a resident of Parker Lane reported odour and intermittent overflows from an air release valve located opposite his property, which he initially associated with the Pukekohe WWTP.

Subsequent investigation confirmed that the source of the issue was the wider wastewater network infrastructure (air release valve) and not the WWTP operations. The complaint was therefore redirected to Watercare's Networks team, who inspected and repaired the valve within the following days. The complainant was kept informed of the findings and resolution. While the complaint was initially raised as a WWTP issue, investigation confirmed it related to the wastewater network. The incident did not reflect WWTP performance or consent compliance.

No other odour, noise, or nuisance complaints were recorded in the 2025–2026 period. Additionally, no operational incidents or issues occurred within the reporting period.

4.5 AUTH136310.01.01

Condition 14 of AUTH136310.01.01 requires Watercare to inspect the pipe bridges at least once per year and after significant rain events to confirm the integrity of the structures and if there is any undue erosion. As shown in Figure 4-8 (Parker Lane pipe bridge) and Figure 4-9 (pipe bridge at the treatment plant), the pipe bridges are intact and there is no notable downstream erosion.



Figure 4-8. The Parker Lane pipe bridge.



Figure 4-9. The treatment plant entrance pipe bridge.

4.6 AUTH139710.01.01

Condition 15 of AUTH139710.01.01, for a vehicle access bridge, requires Watercare to maintain the channel free of obstructions. As shown in the photos below (Figure 4-10), there are no obstructions in the channel below the bridge.



Figure 4-10. The channel under the vehicle bridge

4.7 Summary of compliance

Appendix A lists a condition-by-condition assessment of compliance for the Pukekohe WWTP air and effluence discharge consent. The WWTP was fully compliant with all performance standards and consent limits, and therefore overall compliance is assessed as Category 1.

5 CONCLUSION

During the 2025–2026 reporting period, the WWTP consistently met its consent conditions under normal operating circumstances. Effluent volumes remained well below the 104,800 m³/day limit, and all monitored water quality parameters were compliant, including during seasonal fluctuations.

The long-term data indicates that the Pukekohe WWTP has continued to operate reliably within its consented limits, with generally stable or improving effluent. Although annual nutrient loads varied significantly, the largest load events were associated with rainfall-driven increases in effluent flows rather than reduced treatment performance. Overall, the results indicate that treatment performance remains robust, with no evidence of a sustained deterioration in effluent quality or compliance. No incidents or complaints occurred relating to the plant operations.

Overall, the Pukekohe WWTP and associated pipe and vehicle bridges are fully compliant with the consents.

Appendix A. Assessment of Compliance

Table A-1 Compliance assessment for AUTH137406.01.01

Condition Number	Consent Condition	Compliance Rating	Comments
01	The activities authorised shall be designed, upgraded, operated and maintained in general accordance with: (a) The document titled “ Application for Resource Consent: Pukekohe Wastewater Consents Project – Section 3: Description of the Existing Pukekohe Wastewater Scheme” dated September 2016 and recorded as document number 9202644 on the Waikato Regional Council’s document recording system (b) The conditions below, which shall prevail should any inconsistency occur between the conditions and the documents described at (a).	1	
02	The consent holder shall be responsible for all sub-contracted operations related to the exercise of this consent and must ensure sub-contractors are made aware of the conditions of this consent.	1	
03	The consent holder shall pay to the Waikato Regional Council any administrative charge fixed in accordance with Section 36 of the Resource Management Act 1991, or any charge prescribed in accordance with regulations made under Section 360 of the Resource Management Act.	1	
04	Within 12 months of the commencement of this consent, and thereafter on an annual basis for the following three years the consent holder shall provide a report to the Waikato Regional Council, the Te Taniwha o Waikato Liaison Group and the Community Liaison Group, detailing progress to date and forward planning for investigations, design, procurement procedure, construction, and commissioning of the wastewater treatment plant upgrade. The requirement to supply this report to these parties may cease either temporarily or permanently with the written approval of the Waikato Regional Council.	1	
05	Within six months of the commencement of this consent, the consent holder shall establish and retain for the duration of this consent a Community Liaison Group. The consent holder shall provide reasonable organisation and administrative support to facilitate the development and ongoing role of the Liaison Group. Membership of the Liaison Group shall be determined by the consent holder in consultation with the submitters who expressed a desire to be heard in relation to the consent process. The consent holder shall invite others to participate in the Community Liaison Group by: Please see the consent document for further details.	1	The first Community Liaison Group meeting occurred in March 2018. The last Community Liaison Group meeting was in June 2023. An invitation was extended for a meeting in March 2025. The community did not attend, so it was adjourned. The next invitation for a meeting will be sent in Oct-Dec 2026.

Condition Number	Consent Condition	Compliance Rating	Comments
06	The Liaison Group shall establish its own meeting protocols but shall be invited to meet at least annually to exercise the functions set out within this condition. The functions of the Liaison Group shall include, but not be limited to, the following matters: Please see the consent document for further details.	1	Refer above
07	The consent holder shall provide minutes of each Liaison Group meeting to the Waikato Regional Council and the members of the Liaison Group within four weeks of each meeting which will include but not be limited to: (a) A record of the discussions at the meeting; (b) A record of any suggestions/issues provided or raised by the members of the Liaison Group including: i. What actions are proposed by the consent holder to respond to suggestions made by the Liaison Group; and ii. Where no actions are proposed to respond to suggestions, the reasons why not.	1	WRC included in the invite and circulation lists
07A	Within six months of the commencement of this consent, the consent holder shall establish and retain for the duration of this consent a Te Taniwha o Waikato Liaison Group. The consent holder shall provide reasonable organisation and administrative support to facilitate the development and ongoing role of the Liaison Group. The Consent Holder shall invite Te Taniwha o Waikato to: (a) Participate within the Te Taniwha o Waikato Liaison Group; (b) Establish its own meeting protocols; and (c) Meet at least annually to exercise the functions set out within condition 7B.	1	Meetings are arranged directly with TTOW as required. The last formal meeting was held on 7 October 2025.
07B	The consent holder shall request that the Te Taniwha o Waikato Liaison Group: Please see the consent document for further details.	1	
07C	The consent holder shall provide minutes of each Taniwha o Waikato Liaison Group meeting under condition 7A to the Waikato Regional Council and the members of the Taniwha o Waikato Liaison Group within four weeks of each meeting, which will include but not be limited to: (a) A record of the discussions at the meeting; (b) A record of any suggestions/issues provided or raised by the members of the Taniwha o Waikato Liaison Group including: i. What actions are proposed by the consent holder to respond to suggestions made by the Taniwha o Waikato Liaison Group; and ii. Where no actions are proposed to respond to suggestions, the reasons why not.	1	Per above

Condition Number	Consent Condition	Compliance Rating	Comments
08	The consent holder shall prepare an Operations and Management Plan (OMP). The objective of the OMP is to provide a framework for the operation, upgrade and management of the wastewater treatment and discharge systems to ensure compliance with the conditions of consent. This OMP shall be lodged with Waikato Regional Council and provided to the Te Taniwha o Waikato Liaison Group and the Community Liaison Group within six months of commencement of these consents and shall be reviewed and updated every three years and as required as a result of any changes to the wastewater treatment plant upgrade operation or management.	1	The OMP was lodged with WRC in July 2023 and provided to TTOW and the CLG.
09	As a minimum the OMP shall include: Please see the consent document for further details.	1	
10	Any improvement or review of the OMP shall be consistent with the objective of the OMP.	1	
11	The consent holder shall undertake a minimum of one hectare of riparian planting in the areas identified on the Proposed Zone of Riparian Planting plan appended to these conditions.	1	Planting occurred in September 2020. Maintenance is ongoing.
12	The Riparian Planting required in accordance with condition 11 shall be: Please see the consent document for further details.	1	
13	Within 12 months of the commencement of this consent, the consent holder shall provide to the Waikato Regional Council a Riparian Planting and Management Plan. The objective of the Riparian Planting Management Plan is to provide a framework that outlines how conditions 11 and 12 shall be achieved. The plan shall be reviewed and updated every five years and as required as a result of any changes to the wastewater treatment plant upgrade, operation, or management.	1	Compliant
14	Prior to submission to the Waikato Regional Council the Riparian Planting and Management Plan shall be provided to the Te Taniwha o Waikato Liaison Group and Community Liaison Group for comment. After receiving comments from the Te Taniwha o Waikato Liaison Group and Community Liaison Group (or in the case that no comments being received within 30 working days), the plan shall be submitted to the Waikato Regional Council for approval in a certifying capacity. As a minimum, the plan shall include: Please see the consent document for further details.	1	Watercare submitted the Plan to the CLG and WRC in October 2019.

Condition Number	Consent Condition	Compliance Rating	Comments
15	Within 12 months of the commencement of this consent, the consent holder shall provide a Pest Management Plan to the Waikato Regional Council. The plan shall be reviewed and updated every five years and as required due to any changes to the wastewater treatment plant upgrade, operation, infrastructure, or management. The objective of the Plan is to provide a framework for the management of pests (animal and plant) within the boundaries of the WWTP.	1	
16	The plan shall be provided to the Community Liaison Group, with a request for comments to be provided within 30 working days. After receiving comments from Te Taniwha o Waikato Liaison Group and the Community Liaison Group (or in the case that no comments are forthcoming within 30 working days), the plan shall be submitted to the Waikato Regional Council for approval in a certifying capacity. The certified plan shall be implemented from the date of commencement of this consent until the consent's expiry. As a minimum, the plan shall include the following: Please see the consent document and the amended consent document for further details.	1	Watercare sent the Plan to community group members for comment on in December 2018.
17	The consent holder shall provide to the Waikato Regional Council, the Te Taniwha o Waikato Liaison Group and Community Liaison Group a written report (the Annual Report) by 30 September each year, including as a minimum: Please see the consent document for further details.	1	This report is to be sent.
18	In the six-month period following the 5th,10th,15th,20th and 25th anniversaries of commencement of these consents, the Waikato Regional Council may following service of notice on the consent holder commence a review of this resource consent under section 128(1) of the Resource Management Act 1991 for the following purposes: Please see the consent document and the amended conditions for further details.	N/A	
19	By the 10th, 20th and 30th anniversaries of the commencement of this consent the consent holder shall request (in writing) of Te Taniwha o Waikato that an updated Cultural Impact Assessment be developed on behalf of Te Taniwha o Waikato unless prior written confirmation is provided on behalf of Te Taniwha o Waikato that an updated Cultural Impact Assessment is unnecessary. Any updated Cultural Impact Assessment shall be provided to the Waikato Regional Council within 30 days of receipt.	N/A	
20	The consent holder shall maintain a Complaints Register for any complaints made about the treatment and discharge operations received by the consent holder. The Register shall record: Please see the consent document and the amended conditions for further details.	1	Compliant

Condition Number	Consent Condition	Compliance Rating	Comments
21	The consent holder shall submit to the Waikato Regional Council a Monitoring and Technology Review Report by the 5th, 10th, 20th and 30th anniversaries of commencement of this consent. The Review Report shall be provided to the Te Taniwha o Waikato Liaison Group and the Community Liaison Group, with a request for comments to be provided within 60 working days. After receiving comments from the Te Taniwha o Waikato Liaison Group and the Community Liaison Group (or in the case that no comments are forthcoming after 60 working days), the plan shall be submitted to the Waikato Regional Council for certification it has been produced in accordance with the requirements of these conditions.	1	The report completed by Stantec was circulated to the CLG and Te Taniwha o Waikato in October 2022 and subsequently issued to WRC in February 2023.
22	The Monitoring and Technology Review report shall include, but is not limited to, the following: (a) An assessment of ongoing compliance with the requirements of this resource consent particularly in relation to any reported non-compliance with consent conditions; Please see the consent document for further details.	1	
23	There shall be no overflow from ponds 1, 2 or 3 into the constructed wetland or off the Pukekohe WWTP site from the ponds.	1	
24	The consent holder shall manage and maintain the integrity of the sludge storage area, wetlands and other structures that form any part of the wastewater treatment process so as to minimise the volume of seepage from such structures as far as practicable.	1	
25	No physical works shall be undertaken which are likely to significantly increase the amount of seepage above that which existed at the commencement of these consents.	1	
26	The consent holder shall maintain all existing peripheral drains within the site to ensure that any seepage into the drains is pumped back into the treatment system.	1	
27	The maximum daily discharge volume to the Parker Lane Stream, shall not exceed 104,800 cubic metres of treated wastewater.	1	There were no exceedances during the reporting year 2025-2026.
28	Up to four years from the date of commencement of this resource consent (Stage 1 discharge) the consent holder shall ensure that the treated wastewater leaving the treatment plant following UV treatment does not exceed the following limits: Please see the consent document for further details.	N/A	
29	From commencement of the Stage 2 discharge and for the remaining duration of this resource consent (Stage 2 discharge), the consent holder shall ensure that the quality of the treated wastewater discharge at the discharge point does not exceed the following limits: Please see the consent document for further details.	1	All effluent quality parameters were compliant with the consent standards

Condition Number	Consent Condition	Compliance Rating	Comments
30	The consent holder shall continuously monitor the flow rate of the treated wastewater leaving the WWTP and shall record the total daily discharge volume into the wetland.	1	The discharge effluent volumes have been monitored and recorded.
31	The consent holder shall continuously monitor the flow rate of the treated wastewater leaving the wetland and shall record the total daily discharge volume leaving the wetland. The requirement to undertake this monitoring may cease either temporarily or permanently with the written approval of the Waikato Regional Council.	1	
32	The consent holder shall take grab samples of the treated wastewater on a fortnightly basis from the discharge leaving the constructed wetland and measure for all parameters as detailed within conditions 28 and 29. The requirement to undertake this sampling may cease either temporarily or permanently with the written approval of the Waikato Regional Council. Advice Note: All wastewater quality analyses shall be undertaken by an IANZ accredited or equivalent laboratory. All methods used shall be appropriate for the wastewater analyses undertaken	1	Sampling typically occurs weekly (i.e., higher frequency than required). All results are included in this report (Appendix B).
33	The consent holder shall forward the results of the monitoring undertaken via conditions 27, 28, 29, and 32 to the Waikato Regional Council, via electronic means, on a three-monthly basis.	1	
34	The consent holder shall notify the Waikato Regional Council within 24 hours (where practicable) of the consent holder becoming aware of the limits specified in Conditions 27, 28, and 29 of this resource consent being exceeded, or any accidental discharge, plant breakdown or other circumstance which is likely to result in the limits of this consent being exceeded. The consent holder shall, within 10 working days of the incident occurring, provide a written report to the Waikato Regional Council, identifying the breach, possible causes and any remedial actions and steps to ensure future compliance.	1	
35	The consent holder shall take grab samples of the treated wastewater on a fortnightly basis from the treatment plant following UV treatment, for the purpose of determining compliance with conditions 28 and 29. Advice Note: All wastewater quality analyses shall be undertaken by an IANZ accredited or equivalent laboratory. All methods used shall be appropriate for the wastewater analyses undertaken.	1	Sampling typically occurs weekly (i.e., higher frequency than required). All available results are included in this report and used for determining compliance.
36	The operation, management and maintenance of the Pukekohe WWTP shall not result in noxious, dangerous, offensive, or objectionable odour to the extent that it causes an adverse effect at or beyond the boundary of the site, in the opinion of a Waikato Regional Council enforcement officer.	1	

Condition Number	Consent Condition	Compliance Rating	Comments
37	The consent holder shall prepare an Odour Management Plan. The objective of the Odour Management Plan is to provide a framework for the operation, maintenance and management of the wastewater treatment and discharge systems to ensure compliance with Condition 36. The Odour Management Plan shall be provided to the Te Taniwha o Waikato Liaison Group and the Community Liaison Group, with a request for comments to be provided within 30 working days. After receiving comments from the Te Taniwha o Waikato Liaison Group and the Community Liaison Group (or in the case that no comments are forthcoming after 30 working days), the plan shall be submitted to the Waikato Regional Council for certification it has been produced in accordance with the requirements of these conditions. As a minimum, the Odour Management Plan shall include: Please see the consent document for further details.	1	Odour, Pest, and Avian Botulism Management Plans were finalised and sent to community group members for comment in Dec 2018. The plans are finalised and forwarded to the Waikato Regional Council.
38	The Odour Management Plan shall be reviewed and updated every five years and as required as a result of any significant changes in plant operation, maintenance, or management.	1	The updated Odour Management Plan was submitted to WRC in July 2023. The next review is required in 2028.
39	Any change in the Odour Management Plan shall be in accordance with the objective as set out in Condition 37.	1	
40	An electronic copy of the Odour Management Plan shall be provided to Waikato Regional Council within 10 working days of a request to do so.	1	

Appendix B. Effluent Volumes and Quality Data

Date	Treated wastewater Volume to Wetland (m ³)	Wetland Discharge - Gravity (m ³)	Wetland Discharge - Pumped (m ³)	Wetland Discharge - Total (m ³)	Rainfall (mm)
1/07/2025	20,234	13,991	0	13,991	0.5
2/07/2025	17,201	13,949	0	13,949	0
3/07/2025	21,082	17,040	0	17,040	35.5
4/07/2025	27,524	22,211	0	22,211	4.5
5/07/2025	28,196	21,426	0.25	21,426	25.5
6/07/2025	28,196	20,391	0	20,391	0.5
7/07/2025	23,159	15,120	0	15,120	0
8/07/2025	17,059	14,037	0	14,037	0
9/07/2025	17,036	14,001	0	14,001	2
10/07/2025	16,105	14,210	0	14,210	5
11/07/2025	23,886	16,136	0	16,136	53.5
12/07/2025	32,701	21,804	0	21,804	4.5
13/07/2025	32,701	18,782	0	18,782	3
14/07/2025	21,736	16,782	0	16,782	1.5
15/07/2025	18,948	15,107	0	15,107	9
16/07/2025	15,582	16,086	0	16,086	1.5
17/07/2025	16,179	13,933	0	13,933	17
18/07/2025	23,582	21,571	0.25	21,572	4
19/07/2025	23,582	19,283	0	19,283	0
20/07/2025	20,185	16,532	0	16,532	0.5
21/07/2025	17,995	14,823	0	14,823	0
22/07/2025	14,252	14,732	0	14,732	0
23/07/2025	11,530	14,684	0	14,684	0
24/07/2025	11,074	14,449	0	14,449	0
25/07/2025	10,525	14,175	0	14,175	0
26/07/2025	10,525	13,858	0	13,858	0
27/07/2025	10,690	13,592	0	13,592	0
28/07/2025	12,900	13,485	0.5	13,485	0
29/07/2025	24,274	13,896	0.5	13,896	69
30/07/2025	31,749	18,947	0	18,947	1
31/07/2025	31,749	18,805	0.25	18,805	6
1/08/2025	21,924	15,118	0.25	15,118	0
2/08/2025	15,578	14,605	0	14,605	0.52
3/08/2025	14,111	14,744	0	14,744	0
4/08/2025	14,306	15,127	0	15,127	0
5/08/2025	16,558	15,656	0	15,656	0
6/08/2025	16,558	15,755	0	15,755	0

Date	Treated wastewater Volume to Wetland (m ³)	Wetland Discharge - Gravity (m ³)	Wetland Discharge - Pumped (m ³)	Wetland Discharge - Total (m ³)	Rainfall (mm)
7/08/2025	14,421	15,669	0	15,669	0.51
8/08/2025	15,946	15,720	0	15,720	10.8
9/08/2025	15,946	15,531	0	15,531	3.1
10/08/2025	13,617	15,489	0	15,489	0
11/08/2025	13,072	15,255	0	15,255	0
12/08/2025	12,328	14,945	0.25	14,945	0
13/08/2025	12,602	14,711	0	14,711	0
14/08/2025	12,602	14,574	0	14,574	2.5
15/08/2025	14,329	14,537	0	14,537	0
16/08/2025	14,329	14,320	0	14,320	10.5
17/08/2025	12,556	14,209	0	14,209	3
18/08/2025	13,743	13,920	0	13,920	9
19/08/2025	15,744	13,656	0	13,656	12.5
20/08/2025	15,744	13,808	0	13,808	0
21/08/2025	13,969	13,772	0	13,772	0
22/08/2025	13,535	13,636	0	13,636	0
23/08/2025	12,258	13,446	0	13,446	0
24/08/2025	11,784	13,294	0	13,294	0
25/08/2025	11,350	13,115	0	13,115	0
26/08/2025	11,739	12,881	0	12,881	0
27/08/2025	11,739	12,710	0.25	12,711	0
28/08/2025	11,583	12,348	0.25	12,348	1
29/08/2025	14,897	12,210	0.25	12,210	17
30/08/2025	14,897	12,659	0	12,659	3
31/08/2025	14,264	12,786	0	12,786	19.5
1/09/2025	14,347	12,924	0	12,924	1
2/09/2025	14,719	13,112	0	13,112	0
3/09/2025	14,719	13,129	0	13,129	0.5
4/09/2025	14,145	13,252	0.25	13,252	0
5/09/2025	14,145	13,211	0	13,211	0
6/09/2025	15,257	13,416	0	13,416	19.5
7/09/2025	15,257	13,387	0	13,387	3.5
8/09/2025	12,973	13,305	0	13,305	0.5
9/09/2025	12,973	13,126	0	13,126	0
10/09/2025	16,342	12,924	0	12,924	8.5
11/09/2025	16,342	13,066	0	13,066	8
12/09/2025	23,939	14,114	0	14,114	18.5

Date	Treated wastewater Volume to Wetland (m ³)	Wetland Discharge - Gravity (m ³)	Wetland Discharge - Pumped (m ³)	Wetland Discharge - Total (m ³)	Rainfall (mm)
13/09/2025	23,939	15,084	0	15,084	6
14/09/2025	17,101	15,123	0	15,123	1
15/09/2025	16,873	16,110	0	16,110	1
16/09/2025	16,873	16,232	0	16,232	0
17/09/2025	14,048	15,801	0	15,801	0
18/09/2025	18,079	15,740	0	15,740	20
19/09/2025	21,222	16,077	0	16,077	3
20/09/2025	21,222	16,208	0.25	16,209	0
21/09/2025	17,171	15,993	0.5	15,994	0.5
22/09/2025	13,806	15,698	0.5	15,699	1.5
23/09/2025	13,944	15,474	0	15,474	12.5
24/09/2025	20,660	15,613	0	15,613	23
25/09/2025	20,660	15,843	0.75	15,844	2
26/09/2025	19,298	15,998	0.75	15,999	6.5
27/09/2025	17,612	15,934	0	15,934	0
28/09/2025	15,185	15,357	0	15,357	0
29/09/2025	14,376	15,979	0	15,979	3.5
30/09/2025	14,183	15,759	0	15,759	0
1/10/2025	12,227	15,395	0	15,395	0
2/10/2025	12,260	15,123	0.5	15,124	2.98
3/10/2025	13,041	14,896	0.75	14,896	11.4
4/10/2025	15,802	14,699	0	14,699	9.9
5/10/2025	15,802	14,060	0.75	14,061	4.96
6/10/2025	14,630	12,855	0.25	12,855	2.48
7/10/2025	19,970	12,436	0	12,436	16.2
8/10/2025	19,970	13,052	0	13,052	0
9/10/2025	19,548	14,422	0	14,422	0
10/10/2025	19,548	15,027	0	15,027	0
11/10/2025	13,580	16,153	0	16,153	0
12/10/2025	13,772	16,428	0	16,428	0
13/10/2025	13,772	16,282	0	16,282	0
14/10/2025	19,943	16,182	0	16,182	29.9
15/10/2025	19,943	16,032	0	16,032	0
16/10/2025	16,958	13,955	0.5	13,956	0
17/10/2025	14,860	10,259	0.25	10,259	0
18/10/2025	13,997	10,014	0.25	10,014	0
19/10/2025	13,862	10,320	0.25	10,321	0.5

Date	Treated wastewater Volume to Wetland (m ³)	Wetland Discharge - Gravity (m ³)	Wetland Discharge - Pumped (m ³)	Wetland Discharge - Total (m ³)	Rainfall (mm)
20/10/2025	13,862	10,987	0.25	10,987	0
21/10/2025	14,037	11,726	0.25	11,727	0
22/10/2025	14,037	13,098	0	13,098	9.11
23/10/2025	13,716	13,740	0	13,740	13.1
24/10/2025	17,786	14,331	0	14,331	1.52
25/10/2025	17,786	14,478	0.5	14,479	0
26/10/2025	13,665	14,658	0	14,658	0
27/10/2025	13,665	15,095	0.5	15,096	6.6
28/10/2025	20,626	15,410	0.5	15,411	26.8
29/10/2025	20,626	16,043	0	16,043	1.01
30/10/2025	15,233	16,694	0	16,694	0
31/10/2025	14,580	16,644	0	16,644	0
1/11/2025	14,560	15,671	0.25	15,671	0
2/11/2025	13,677	15,343	0.25	15,343	0
3/11/2025	13,045	15,099	0	15,099	0
4/11/2025	12,168	14,811	0.25	14,811	0
5/11/2025	12,053	14,923	49.75	14,973	0
6/11/2025	11,775	14,564	76	14,640	0
7/11/2025	11,848	14,101	72.25	14,174	0
8/11/2025	11,848	13,961	62.25	14,023	0
9/11/2025	11,377	13,456	0	13,456	2.5
10/11/2025	11,843	12,792	0	12,792	30.9
11/11/2025	12,563	12,748	2	12,750	1.52
12/11/2025	12,773	12,802	0	12,802	18.7
13/11/2025	15,177	13,051	0	13,051	13.7
14/11/2025	15,177	13,318	0	13,318	2.02
15/11/2025	12,354	12,960	4.75	12,965	4.55
16/11/2025	10,701	12,397	6	12,403	0
17/11/2025	10,717	11,763	34	11,797	0
18/11/2025	13,164	11,489	0	11,489	45.0
19/11/2025	23,138	13,031	0	13,031	8.09
20/11/2025	23,138	14,293	11.25	14,305	0.51
21/11/2025	17,251	14,535	16.75	14,552	0
22/11/2025	14,536	14,619	54	14,673	0
23/11/2025	12,938	14,687	4.5	14,692	0
24/11/2025	12,430	14,586	80.5	14,666	0
25/11/2025	12,228	14,302	0	14,302	0

Date	Treated wastewater Volume to Wetland (m ³)	Wetland Discharge - Gravity (m ³)	Wetland Discharge - Pumped (m ³)	Wetland Discharge - Total (m ³)	Rainfall (mm)
26/11/2025	11,624	13,686	15.75	13,701	0
27/11/2025	10,697	13,160	40.5	13,201	0.5
28/11/2025	10,621	12,852	0	12,852	1.52
29/11/2025	10,882	10,897	64.5	10,961	0
30/11/2025	12,731	10,800	0	10,800	22.8
1/12/2025	12,855	12,289	8.25	12,298	0
2/12/2025	12,855	12,443	0	12,443	11
3/12/2025	13,967	12,590	0	12,590	25.5
4/12/2025	13,967	13,195	0	13,195	1
5/12/2025	13,265	13,140	1.25	13,141	0
6/12/2025	12,750	12,981	17.25	12,999	0
7/12/2025	12,430	12,933	25.75	12,958	0
8/12/2025	12,430	12,633	109.25	12,742	0
9/12/2025	12,251	11,718	42.25	11,760	0
10/12/2025	11,812	11,915	47	11,962	0
11/12/2025	11,812	11,167	57.75	11,225	0
12/12/2025	11,792	11,358	13.5	11,372	0
13/12/2025	11,792	11,632	20.25	11,653	0
14/12/2025	11,752	11,406	24.5	11,431	0
15/12/2025	11,110	10,991	59.75	11,051	0
16/12/2025	10,304	10,332	4.5	10,336	15.5
17/12/2025	11,822	9,973	1.25	9,974	0.5
18/12/2025	11,822	10,918	16.25	10,934	0
19/12/2025	12,037	11,147	0	11,147	7
20/12/2025	12,037	11,817	0	11,817	2.5
21/12/2025	11,626	12,053	0	12,053	0
22/12/2025	11,438	11,713	0	11,713	3.5
23/12/2025	11,674	11,608	0	11,608	1
24/12/2025	15,279	11,956	0	11,956	1.5
25/12/2025	15,279	11,902	24.5	11,927	0
26/12/2025	11,226	11,149	3.25	11,152	9.5
27/12/2025	12,728	11,823	1.5	11,825	0.5
28/12/2025	12,728	12,183	13.75	12,196	0
29/12/2025	10,686	11,499	0	11,499	3
30/12/2025	11,140	11,765	0.5	11,766	4.5
31/12/2025	11,278	11,191	0	11,191	13
1/01/2026	11,278	10,821	0.75	10,822	3

Date	Treated wastewater Volume to Wetland (m ³)	Wetland Discharge - Gravity (m ³)	Wetland Discharge - Pumped (m ³)	Wetland Discharge - Total (m ³)	Rainfall (mm)
2/01/2026	9,902	10,552	68.5	10,620	23
3/01/2026	15,158	11,297	37.25	11,334	22.5
4/01/2026	15,158	11,917	10.75	11,928	0.5
5/01/2026	13,224	11,976	16	11,992	0
6/01/2026	13,224	12,107	29.25	12,137	0
7/01/2026	11,933	12,084	20.25	12,104	0
8/01/2026	11,702	11,592	2.75	11,595	0
9/01/2026	11,040	11,502	10	11,512	0
10/01/2026	11,040	11,300	12	11,312	0
11/01/2026	10,243	10,738	24.5	10,763	0
12/01/2026	10,979	10,297	6.25	10,303	0
13/01/2026	11,284	10,318	37.25	10,355	0
14/01/2026	13,468	10,532	22.25	10,554	2.5
15/01/2026	13,468	10,582	9.5	10,592	23
16/01/2026	16,252	11,232	0	11,232	3.5
17/01/2026	16,252	11,411	10.5	11,422	0
18/01/2026	12,405	11,478	29.5	11,508	4
19/01/2026	12,112	11,968	0	11,968	5
20/01/2026	12,942	12,116	0	12,116	14
21/01/2026	19,480	12,548	0	12,548	57.5
22/01/2026	27,811	14,837	0	14,837	3.5
23/01/2026	27,811	15,396	0	15,396	3
24/01/2026	18,910	14,235	0	14,235	10.5
25/01/2026	17,995	14,678	0	14,678	6
26/01/2026	17,848	16,003	0	16,003	7.5
27/01/2026	17,118	16,355	4	16,359	0
28/01/2026	14,997	16,229	6.5	16,236	0
29/01/2026	14,997	15,915	6.5	15,922	0
30/01/2026	13,844	14,426	9.75	14,436	0
31/01/2026	12,564	14,430	28.25	14,459	0
1/02/2026	12,564	14,040	21.25	14,061	0
2/02/2026	11,754	13,745	10	13,755	7.7
3/02/2026	12,110	13,751	0	13,751	2.04
4/02/2026	12,110	13,529	7.25	13,536	9.7
5/02/2026	11,876	13,709	7.25	13,716	0.51
6/02/2026	11,876	13,317	18.5	13,335	0
7/02/2026	10,076	12,993	13.75	13,007	0

Date	Treated wastewater Volume to Wetland (m ³)	Wetland Discharge - Gravity (m ³)	Wetland Discharge - Pumped (m ³)	Wetland Discharge - Total (m ³)	Rainfall (mm)
8/02/2026	11,234	12,791	0	12,791	0
9/02/2026	11,404	12,526	7.5	12,534	0
10/02/2026	11,404	12,261	6.5	12,268	0
11/02/2026	10,994	11,934	5.75	11,939	0
12/02/2026	10,917	11,854	45	11,899	1.02
13/02/2026	11,792	11,396	0	11,396	15.8
14/02/2026	12,048	11,792	0	11,792	2.6
15/02/2026	12,048	11,907	0	11,907	2.05
16/02/2026	11,878	11,258	6	11,264	0.51
17/02/2026	11,755	9,352	0	9,352	0
18/02/2026	12,233	8,732	4.75	8,737	0
19/02/2026	12,233	10,148	0.25	10,148	2.04
20/02/2026	12,448	11,964	2	11,966	0
21/02/2026	12,448	12,881	2	12,883	0
22/02/2026	11,363	12,455	7	12,462	0
23/02/2026	10,784	12,233	4.5	12,238	0
24/02/2026	10,450	11,970	2.25	11,972	0
25/02/2026	10,370	11,008	12.25	11,020	0
26/02/2026	10,303	9,616	6.5	9,622	2.5
27/02/2026	12,580	9,672	2.25	9,674	0
28/02/2026	12,580	10,856	8.75	10,865	0
1/03/2026	10,701	11,208	0.75	11,209	0.5
2/03/2026	10,932	11,195	8.25	11,203	0.5
3/03/2026	10,932	10,933	3.25	10,936	0
4/03/2026	10,318	9,901	3	9,904	0
5/03/2026	9,700	9,050	0.75	9,051	0
6/03/2026	10,133	9,943	4.5	9,947	0
7/03/2026	10,133	9,966	5.75	9,972	0
8/03/2026	9,912	9,527	6.75	9,533	0
9/03/2026	10,829	9,917	5.5	9,923	0
10/03/2026	11,354	9,750	19.25	9,769	0
11/03/2026	11,354	10,138	0	10,138	0
12/03/2026	12,075	10,943	1.75	10,945	0
13/03/2026	13,805	11,685	0.5	11,685	5.5
14/03/2026	13,805	11,224	0	11,224	2.5
15/03/2026	12,603	11,283	1.5	11,285	0
16/03/2026	11,712	11,393	9.5	11,402	0.5

Date	Treated wastewater Volume to Wetland (m ³)	Wetland Discharge - Gravity (m ³)	Wetland Discharge - Pumped (m ³)	Wetland Discharge - Total (m ³)	Rainfall (mm)
17/03/2026	10,332	10,917	6.5	10,923	0
18/03/2026	10,332	9,500	1.75	9,502	0
19/03/2026	9,609	9,446	5.75	9,452	0
20/03/2026	9,737	8,886	4.25	8,890	0
21/03/2026	9,737	9,541	6.25	9,547	0
22/03/2026	9,416	9,981	3	9,984	0
23/03/2026	9,428	9,963	4	9,967	0
24/03/2026	9,580	9,882	17.75	9,900	0
25/03/2026	12,021	10,446	0	10,446	1
26/03/2026	25,180	12,993	0	12,993	81.5
27/03/2026	25,180	16,302	0	16,302	2.5
28/03/2026	19,553	16,727	0	16,727	0
29/03/2026	15,228	16,546	5.25	16,551	6
30/03/2026	12,846	16,377	0	16,377	7
31/03/2026	12,312	15,791	0	15,791	0.5
1/04/2026	10,061	15,150	0	15,150	0.5
2/04/2026	9,606	14,632	0	14,632	0
3/04/2026	10,075	14,283	0	14,283	0
4/04/2026	10,075	13,909	0	13,909	0
5/04/2026	9,676	13,047	0	13,047	0
6/04/2026	9,705	12,102	0	12,102	0
7/04/2026	10,783	12,106	0	12,106	0
8/04/2026	17,130	12,627	0	12,627	5
9/04/2026	17,130	13,577	0	13,577	19
10/04/2026	14,559	13,707	0	13,707	0.5
11/04/2026	12,587	13,732	0	13,732	0
12/04/2026	28,727	14,943	0	14,943	1.5
13/04/2026	28,727	17,833	0	17,833	52
14/04/2026	23,588	17,672	0	17,672	5
15/04/2026	27,771	18,402	0	18,402	18.5
16/04/2026	27,771	16,425	0	16,425	12
17/04/2026	19,939	16,752	0	16,752	3.5
18/04/2026	18,037	17,041	0.25	17,041	0.5
19/04/2026	26,476	18,234	0	18,234	8.0
20/04/2026	26,476	18,289	0	18,289	16.0
21/04/2026	23,017	17,621	0	17,621	5
22/04/2026	18,920	17,941	0	17,941	0

Date	Treated wastewater Volume to Wetland (m ³)	Wetland Discharge - Gravity (m ³)	Wetland Discharge - Pumped (m ³)	Wetland Discharge - Total (m ³)	Rainfall (mm)
23/04/2026	18,920	18,409	0	18,409	0
24/04/2026	16,200	18,579	0	18,579	4
25/04/2026	15,538	17,777	0	17,777	10.5
26/04/2026	13,893	17,878	0	17,878	0
27/04/2026	13,028	17,562	0	17,562	0
28/04/2026	13,028	16,608	0	16,608	0
29/04/2026	12,829	16,385	0	16,385	0.5
30/04/2026	12,462	16,016	0	16,016	0
1/05/2026	12,109	15,716	0	15,716	0
2/05/2026	11,603	15,450	0	15,450	0
3/05/2026	11,914	15,176	0	15,176	0
4/05/2026	14,200	14,857	0	14,857	0
5/05/2026	14,200	15,202	0	15,202	0
6/05/2026	14,083	15,051	0	15,051	0
7/05/2026	11,361	14,890	0	14,890	0
8/05/2026	11,713	14,721	0	14,721	9
9/05/2026	12,958	14,865	0	14,865	5.5
10/05/2026	12,958	15,091	0	15,091	2.5
11/05/2026	12,452	15,600	0	15,600	1
12/05/2026	12,452	15,484	0	15,484	0
13/05/2026	12,168	15,307	0	15,307	0
14/05/2026	12,552	15,157	0	15,157	0
15/05/2026	12,552	15,016	0	15,016	0
16/05/2026	11,694	14,434	0	14,434	0
17/05/2026	10,959	14,099	0	14,099	0
18/05/2026	10,594	13,792	0	13,792	0
19/05/2026	10,387	13,332	0	13,332	0.5
20/05/2026	10,349	13,071	0	13,071	0
21/05/2026	10,349	12,899	0	12,899	0
22/05/2026	10,329	12,568	0	12,568	0
23/05/2026	9,855	12,443	0	12,443	0
24/05/2026	9,700	12,284	0	12,284	0.5
25/05/2026	9,700	11,274	0	11,274	0
26/05/2026	8,871	5,156	0	5,156	0
27/05/2026	9,914	8,590	0	8,590	0.5
28/05/2026	11,744	12,865	0	12,865	3
29/05/2026	12,046	12,996	0	12,996	0

Date	Treated wastewater Volume to Wetland (m ³)	Wetland Discharge - Gravity (m ³)	Wetland Discharge - Pumped (m ³)	Wetland Discharge - Total (m ³)	Rainfall (mm)
30/05/2026	12,046	12,804	0	12,804	0
31/05/2026	10,113	12,469	0	12,469	1
1/06/2026	10,788	12,312	0	12,312	11.5
2/06/2026	14,433	12,884	0	12,884	15
3/06/2026	14,433	13,152	0	13,152	4.5
4/06/2026	14,133	13,636	0	13,636	2
5/06/2026	14,133	13,946	0	13,946	9
6/06/2026	14,439	14,314	0	14,314	10.5
7/06/2026	14,439	14,593	0	14,593	0.5
8/06/2026	12,700	14,644	0	14,644	0.5
9/06/2026	12,615	14,596	0	14,596	0.5
10/06/2026	12,849	14,200	0	14,200	0
11/06/2026	12,849	14,533	0	14,533	0
12/06/2026	11,286	14,318	0	14,318	0.5
13/06/2026	10,075	13,977	0	13,977	0
14/06/2026	9,969	13,586	0	13,586	0.5
15/06/2026	9,804	13,229	0	13,229	2.5
16/06/2026	11,598	12,760	0	12,760	6.5
17/06/2026	11,598	12,964	0	12,964	2.5
18/06/2026	11,436	13,009	0	13,009	2
19/06/2026	11,014	12,958	0	12,958	0.5
20/06/2026	10,469	12,852	0	12,852	0
21/06/2026	10,440	12,845	0	12,845	3
22/06/2026	10,618	12,365	0	12,365	0.5
23/06/2026	10,618	11,711	0	11,711	0.5
24/06/2026	22,287	12,871	0	12,871	33.5
25/06/2026	22,287	14,903	0	14,903	3.5
26/06/2026	20,961	15,448	0	15,448	5.5
27/06/2026	16,778	15,780	0	15,780	0
28/06/2026	14,108	15,541	0	15,541	0
29/06/2026	13,140	15,886	0	15,886	0.5
30/06/2026	12,921	16,052	0	16,052	0

Date	cBOD ₅ (mg/L)	TSS (mg/L)	NH ₄ -N (mg/L)	Total Nitrogen (mg/L)	Total Phosphorus (mg/L)	<i>E. coli</i> (per 100mL)
2/07/2025	2.1	1.0	0.1	4.4	0.4	1.7
9/07/2025	0.6	1.0	0.0	5.0	0.3	1.6
16/07/2025	0.9	2.4	0.0	0.8	0.5	1.7
23/07/2025	2.6	1.0	0.1	0.9	1.5	1.7
30/07/2025	0.5	1.0	0.0	1.3	0.1	1.6
6/08/2025	1.0	1.0	0.0	3.9	2.2	1.6
13/08/2025	0.8	1.0	0.0	1.1	0.8	1.6
20/08/2025	0.6	1.0	0.0	0.9	1.0	1.6
27/08/2025	0.8	1.1	0.1	1.1	1.2	1.7
3/09/2025	0.9	1.0	0.0	0.9	2.2	3.3
10/09/2025	0.6	1.0	0.0	1.5	1.0	1.6
17/09/2025	0.7	1.2	0.0	1.2	1.1	1.6
24/09/2025	1.2	1.0	0.0	0.8	0.4	1.7
1/10/2025	1.0	1.0	0.0	0.8	0.1	1.6
8/10/2025	2.6	3.8	0.0	1.8	1.1	1.7
15/10/2025	0.8	3.4	0.0	0.9	1.0	1.6
22/10/2025	0.5	1.0	0.0	1.2	1.0	1.7
29/10/2025	0.5	1.0	0.0	1.3	2.2	1.6
5/11/2025	2.3	1.0	0.0	0.9	0.5	1.6
12/11/2025	0.7	1.0	0.0	1.2	0.8	1.6
19/11/2025	0.6	1.4	0.0	0.8	1.2	1.7
26/11/2025	0.5	1.0	0.0	1.0	2.8	1.7
3/12/2025	0.5	1.0	0.0	0.9	0.4	1.6
10/12/2025	0.5	1.6	0.0	1.4	1.3	1.6
17/12/2025	4.2	1.8	0.1	1.0	1.3	1.7
24/12/2025	2.2	1.2	0.1	1.2	1.8	1.7
31/12/2025	0.5	2.4	0.1	1.3	0.1	1.7
7/01/2026	0.5	1.1	0.1	1.0	0.2	18.0
14/01/2026	0.6	1.0	0.1	1.0	0.7	1.6
21/01/2026	0.5	1.8	0.1	0.7	0.1	1.6
28/01/2026	0.8	1.0	0.1	1.0	1.2	6.7
4/02/2026	0.5	1.0	0.1	1.1	0.1	1.6
11/02/2026	0.5	1.0	0.1	1.0	0.3	1.6
18/02/2026	0.5	1.0	0.1	1.0	0.3	1.7
25/02/2026	6.7	1.0	0.1	1.1	0.7	1.6
4/03/2026	0.5	1.6	0.1	1.0	0.2	1.6
11/03/2026	0.6	1.0	0.1	2.5	0.1	1.7

Date	cBOD ₅ (mg/L)	TSS (mg/L)	NH ₄ -N (mg/L)	Total Nitrogen (mg/L)	Total Phosphorus (mg/L)	<i>E. coli</i> (per 100mL)
18/03/2026	0.5	1.0	0.1	0.9	0.1	1.6
25/03/2026	0.8	3.6	0.1	0.9	0.1	1.7
1/04/2026	0.5	1.4	0.1	0.9	0.1	1.6
8/04/2026	0.5	1.0	0.1	1.1	1.5	1.6
15/04/2026	2.5	1.0	0.1	1.3	0.3	1.6
22/04/2026	1.0	4.3	0.1	0.7	0.5	1.7
29/04/2026	0.7	1.0	0.1	1.3	1.8	0.9
6/05/2026	2.0	1.2	0.1	1.6	2.3	1.6
13/05/2026	0.5	1.0	0.1	1.6	1.3	1.7
20/05/2026	0.8	2.4	0.1	1.1	1.7	1.6
27/05/2026	0.9	1.0	0.1	1.1	1.4	1.6
3/06/2026	0.5	1.6	0.1	1.9	1.0	1.7
10/06/2026	0.7	4.2	0.1	3.2	0.4	1.6
17/06/2026	0.5	1.4	0.1	0.9	1.2	1.7
24/06/2026	0.9	6.0	0.1	1.0	0.7	1.7

Appendix C. Data Sources

Table 4-1: Download location of environmental monitoring data used in this report

Category	Parameter	Source platform	Tag/ID
Effluent volume	Effluent Volume (Discharge to wetland)	Pi	DTPUK_52_FT_3621_EFFVOLDAYS
Effluent volume	Daily wetland discharge (gravity)	Pi	DTPUK_55_FI_201_VOL
Effluent volume	Daily wetland discharge (pumped)	Pi	DTPUK_55_FI_101_VOL
Environmental-External	Rainfall	Auckland Council Environmental Data Portal	Location - Whangamaire @ Culvert
Effluent quality	cBOD ₅	Pi	DTPUK_48_13_UVE_BOD
Effluent quality	TSS	Pi	DTPUK_48_13_UVE_TSS
Effluent quality	NHx	Pi	DTPUK_48_13_UVE TNH3N
Effluent quality	TN	Pi	DTPUK_48_13_UVE_TN
Effluent quality	TP	Pi	DTPUK_48_13_UVE_TP
Effluent quality	<i>E. Coli</i>	Pi	DTPUK_48_13_UVE_ECOLMTEC