

Denehurst Wastewater Treatment Plant
Annual Report

Final - September 2026

Watercare

QUALITY INFORMATION

Document	Annual Report
Date	29 September 2026
Name and position of originator	Eleanor Matthews, Environmental Scientist
Report directory	O:\Ops\Wastewater Operations\Regional Plants\Nth Region\03 Asset Ops_Nth\DTDEN\03-Resource Consent\03-Resource Consent Administration and Monitoring\Annual Reports\2025-26

REVISION HISTORY

Rev	Revision Date	Name	Position	Signature
1	28/06-8/2026	Michiel Jonker	Environmental Care Manager	[redacted]
2	30/09/2026	Gabriel Freitas		
3				

APPROVED

Date	Name	Position	Signature
29/09/2026	Michiel Jonker	Environmental Care Manager	[redacted]

CONSENT CHANGE AND MONITORING HISTORY

Change type	Description	Effective date	Reference / condition	Reporting / monitoring implications
Discharge consent	Discharge of treated wastewater to ground soakage	Aug 2007 – Dec 2015	34087	Continuously measure flows to land disposal. Sample treated effluent quarterly. Annual performance report due 31 May.
Reissue discharge consent	Discharge to land up to 14,800 L/d into an effluent disposal field at a rate between 2 and 4 mm/day	July 2017	DIS60048047	Flow meter to measure total daily discharge. Quarterly quality monitoring. Annual performance report due 30 Sept.
Ops and maintenance plan	Details operational and maintenance procedures	October 2017	DIS60048047	Operations and Management Plan must be maintained and followed (Condition 17–18).
Audit requirement	Independent audit	Due in 2026–2027 (within 10 years of consent commencement)	DIS60048047	Audit report due by 30 September of the year undertaken. Will inform any required system changes or upgrades.

EXECUTIVE SUMMARY

This annual report summarises the environmental monitoring, operational performance and consent compliance of the Denehurst Wastewater Treatment Plant (WWTP) for the period 1 July 2025 to 30 June 2026. The WWTP operates under resource consent DIS60048047, which permits the discharge of up to 14.8 m^3/day of treated domestic wastewater to land at application rates of 2 mm/day from May to September and 4 mm/day from October to April.

Main findings include:

- Flows and irrigation: Daily discharge volumes remained within the 14.8 m^3/day consent limit. There were no breaches of the average two and four mm/day irrigation limit.
- Effluent quality: five-day carbonaceous biochemical oxygen demand ($cBOD_5$) and total suspended solids (TSS) results consistently complied with the 15 mg/L limits.
- Monitoring: Required quarterly sampling and weekly inspections were completed, with no ponding, channelling, or surface seepage observed. One cBOD5 result was not received due to a software malfunction at the Watercare Laboratory. As Condition 21 requires quarterly analysis of $cBOD_5$, this represents a monitoring deficiency for the reporting period.
- Compliance management: On two occasions, 12 April and 20 May 2026, the same balancing pipe between the two buffer tanks failed and released tank contents to the nearby Waimauku Stream (approximately 40 m^3 and 32 m^3 respectively). These incidents represent non-compliance with Condition 14 of the consent. Watercare notified Auckland Council following both incidents and undertook receiving-environment monitoring. Available monitoring did not provide evidence of a material ongoing effect on the Waimauku Stream; however, samples collected on 14 April following the first incident were not analysed due to laboratory miscommunication, limiting assessment of short-term effects from that incident. Following the second failure, the balancing pipe was replaced with a larger pipe to reduce the likelihood of reoccurrence.

Overall, the plant is assessed as Category 2 compliance for the 2025–26 reporting period. The plant generally complied with flow, irrigation, effluent quality and inspection requirements. The two isolated non-compliances were promptly notified and investigated, available receiving-environment results did not indicate more than minor effects, and corrective action was completed. Key priorities for the next reporting period are to monitor the performance of the replacement balancing pipe, complete the required independent audit, and maintain routine inspection and sampling programmes.

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LIST OF ABBREVIATIONS AND ACRONYMS

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

Table 1-1: Abbreviations and acronyms used in this report

Abbreviation	Description
$cBOD_5$	5-day carbonaceous biochemical oxygen demand
E. coli	*Escherichia coli*
NH_X	Ammonia and ammonium, reported in milligrams nitrogen
NO_2	Nitrite, reported in milligrams nitrogen
NO_3	Nitrate, reported in milligrams nitrogen
TSS	Total suspended solids
Watercare	Watercare Services Limited
WWTP	Wastewater treatment plant

1 INTRODUCTION

1.1 Background

This annual report presents environmental monitoring, operational performance and compliance with the relevant resource consent for the Denehurst Wastewater Treatment Plant (WWTP) for the period 1 July 2025 to 30 June 2026. Discharge to land permit DIS60048047 enables the operation of the WWTP, limiting effluent discharge to 14,800 L/day into the effluent disposal field, at a rate that does not exceed 2 mm/day in months May to September, and 4 mm/day in months October to April.

1.2 Scope

To meet the requirements of the consent this report covers:

- Relevant consents and management plans
- Description of the WWTP
- Plant performance
- Effluent discharge trends
- Summary of compliance.

1.3 Additional Details

No complaints were reported against the WWTP during the reporting period. Two incidents resulted in non-compliance:

- **12 April 2026 incident:** During a heavy rain event, the buffer tanks reached a high level and the balancing pipe between them failed, discharging an estimated 40 m^3 to the nearby Waimauku Stream. Watercare notified the Team Leader for Western Monitoring within two working days and provided details of the response and remedial actions. Samples were collected on 14 and 20 April; however, the 14 April samples were not analysed due to laboratory miscommunication. Results from 20 April did not provide evidence of a material ongoing effect on the stream.
- **20 May 2026 incident and corrective action:** The repaired balancing pipe failed again, releasing an estimated 32 m^3 to the Waimauku Stream. Watercare again notified the Team Leader for Western Monitoring within two working days and advised of the response and remedial actions. Samples collected on 20 and 27 May. The results did not provide evidence of a material ongoing effect attributable to the incident. Following the second failure, Watercare replaced the balancing pipe with a larger pipe to reduce the risk of recurrence.

2 OPERATIONAL DETAILS

2.1 Current Operations

The Denehurst WWTP is located on Denehurst Drive in Waimauku. This WWTP is a land treatment system that consists of:

- Privately-owned interceptor tanks
- AdvanTex© recirculating packed bed reactor treatment technology
- Irrigation (drip irrigation) onto two areas with a total of approximately 1,640 m²
  - The southern field is 640 m²
  - The northern field is 1,000 m²
- Two flow balancing/buffer tanks (30,000 L each).

Interceptor tanks require periodic cleaning of the effluent filter and removal of septage. Individual homeowners are responsible for the maintenance of their interceptor tanks.

2.2 Changes in reporting year

During the reporting year, the balancing pipe between the two buffer tanks was upgraded following leakage issues identified during operation. The upgrade was undertaken to address the leak and improve the transfer and balancing of flows between the tanks. This work is expected to reduce the likelihood of further leakage and improve the reliability of the flow balancing system during normal operation and higher inflow periods.

2.3 Future changes

New irrigation lines are planned for installation over the next few months to support ongoing operation of the land disposal system. During the next reporting period, key priorities will include monitoring the performance of the replacement balancing pipe to confirm that it is operating effectively, completing the required independent audit, and continuing routine inspection and sampling programmes. These actions will support ongoing consent compliance and help identify any operational issues early.

3 METHODOLOGY

3.1 Monitoring

The assessment of WWTP performance considers:

- Results of required WWTP monitoring
- Recorded incidents and complaints.

Daily discharge volumes were recorded by a calibrated flow meter installed on the irrigation line, with readings logged at the same time each day (Condition 19). Irrigation application rates were calculated from daily flows and disposal field area dimensions.

Quarterly effluent quality monitoring was undertaken in September, December, March, and June. Samples were collected in accordance with the requirements of Conditions 21–22. Parameters tested included five-day carbonaceous biochemical oxygen demand (cBOD5), total suspended solids, *Escherichia coli*, nitrate and nitrite nitrogen, ammoniacal nitrogen, total nitrogen, and total phosphorus.

Weekly visual inspections were completed to assess the land disposal fields for evidence of ponding, channelling, or breakout of effluent as per Condition 24. No evidence of surface discharges was observed during the reporting period. For each visit, the process technician fills out a templated Excel sheet, which is saved in a shared drive.

3.2 Incident response monitoring

Requirements for water quality monitoring - Waimauku Stream (Condition 25a) are detailed in Section 26a, b and condition 27:

In accordance with Condition 25(a), water quality samples of the Waimauku Stream shall be collected on the day that evidence of breakout in the disposal field is identified, and in the following week, as follows:

a. from a point at the subdivision boundary upstream (Point A, Figure 1) of the disposal area (at approximately NZTM (2000) 5929542N and 1732944E), and,

b. from a point within approximately 120 metres downstream of the subdivision boundary of the disposal area (at approximately NZTM (2000) 5929140N and 1732864E) (Point B, Figure 1).

Water quality samples shall be analysed for the following parameters:

- 5-day Biochemical Oxygen Demand (BOD5)
- Total suspended solids (TSS)
- Escherichia coli (E. coli)
- Total ammoniacal nitrogen (NHx)
- Total nitrogen (TN)
- Total phosphorus (TP)
- pH



Figure 3-1 Upstream and downstream sampling locations as outlined in the consent

3.3 Data handling and analysis

All operational and monitoring records, including PI tag IDs, SCADA outputs, laboratory results and calculation workbooks used in this report, are collated in Appendix C (Data Sources).Flow and discharge quality performance were assessed against the applicable consent requirements and compared with previous reporting periods to identify changes in performance, unusual results and potential trends. The following consent limits were used:

- Condition 7 – Daily discharge volume: maximum 14.8 m^3/day.
- Condition 8 – Winter application rate: average maximum 2 mm/day from May to September.
- Condition 9 – Summer application rate: average maximum 4 mm/day from October to April.
- Condition 10 – $cBOD_5$: maximum 15 mg/L.
- Condition 10 –TSS: maximum 15 mg/L.

To assess long-term changes in discharge quality, water quality monitoring results from the past five reporting periods were compiled and compared with total monthly rainfall records. Results were standardised by sampling date and reporting period, then plotted alongside rainfall data to examine seasonal patterns and potential climate influences. This approach provides context for interpreting annual variation and identifying whether observed exceedances are isolated events or part of a broader trend.

Data limitations for the reporting period included one missed $cBOD_5$ result from the March 2026 quarterly effluent sample and the 14 April 2026 Waimauku Stream samples not being analysed due to laboratory miscommunication. These limitations are noted where the results are interpreted.

3.4 Compliance criteria

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

Table 3.1.1 Compliance assessment criteria

Rating	Detail
Category 1	Watercare has complied with the consent condition. Where a 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 Effluent volumes

Daily effluent discharge volumes are presented in Figure 4-1 and confirm that the daily limit of 14.8 m^3/day was not breached during the reporting period. The total annual discharge volume for the 2025-26 reporting period was 1,824.29 m^3.

The average wastewater application rates via irrigation are presented in Table 4-1, and shows that the monthly average was not breached and all months remained compliant.

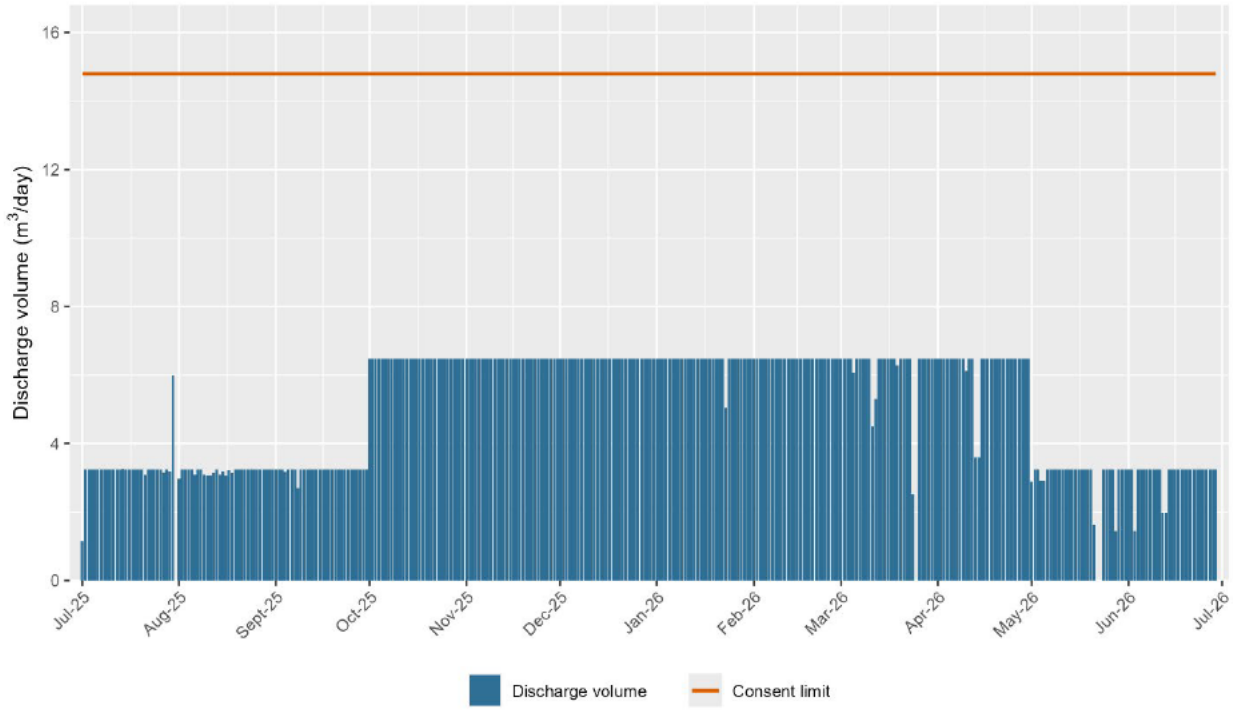

Figure 4-1 Daily effluent discharge volumes during the 2025-26 reporting period.

Table 4-1 Monthly average wastewater irrigation rates and corresponding consent limits for the 2025–26 reporting period

Date	Average irrigation volume (mm/day)	Consent limit (mm/day)	Compliance
Jul-25	1.9	2.0	Compliant
Aug-25	2.0	2.0	Compliant
Sept-25	2.0	2.0	Compliant
Oct-25	4.0	4.0	Compliant
Nov-25	4.0	4.0	Compliant
Dec-25	4.0	4.0	Compliant
Jan-26	4.0	4.0	Compliant
Feb-26	4.0	4.0	Compliant
Mar-26	3.7	4.0	Compliant
Apr-26	3.9	4.0	Compliant
May-26	1.8	2.0	Compliant

Date	Average irrigation volume (mm/day)	Consent limit (mm/day)	Compliance
Jun-26	1.9	2.0	Compliant

During the weekly visual inspections, no evidence of ponding, channelling or surface seepage of wastewater was observed.

4.2 Effluent quality

As per condition 21 of the consent, discharge quality monitoring was conducted in September, December, March and June of the reporting period and the averages and maximums have been compared to the consent standards. These are presented in Table 4-2 and show that the quality standard for $cBOD_5$ and total suspended solids (TSS) was met.

A $cBOD_5$ analytical result was not produced for the March 2026 sample due to a laboratory software failure. Consequently, compliance with the $cBOD_5$ concentration standard cannot be demonstrated for that sampling event and the quarterly analytical requirement of Condition 21 was not fully achieved.

Table 4-2 Discharge quality monitoring results for the 2025–26 reporting period compared with consent standards and previous reporting results

Date	Ammonia (mg/L)	cBOD5 (mg/L)	*E. coli* (cfu/100 ml)	NO2 + NO3 (mg/L)	Total N (mg/L)	Total P (mg/L)	TSS (mg/L)
02/09/2025	17	3.7	3,200	35	50	8.43	6.4
02/12/2025	13	5.4	1,100	31	50	8.81	7
03/03/2026	15	-	48	51	74	12	12
02/06/2026	25	3.6	1,400	41	72	11	14
Consent limit	NA	15	NA	NA	NA	NA	15
Average	17.5	4.2	1,437	39.5	61.5	10.06	9.85
Maximum	25	5.4	3,200	51	74	12	14

4.3 Effluent quality trends

Figure 4-2 compares discharge quality results from the past six reporting periods with total monthly rainfall. Nitrite plus nitrate and total nitrogen showed the clearest seasonal pattern, generally increasing during warmer months and decreasing through winter. This pattern was less pronounced during the 2022–23 reporting year, likely because of the extreme rainfall experienced during summer, but became more apparent again in later reporting periods.

$cBOD_5$, total suspended solids and *E. coli* showed more variable trends. These parameters tended to peak around spring, although the pattern was not consistent across all years. The most notable *E. coli* peak occurred after the February 2023 extreme weather event.

Overall, the long-term dataset suggests that rainfall and seasonality influence some discharge-quality parameters, but they do not fully explain year-to-year variation. Operationally, the five-year dataset does not indicate a negative trend in treatment performance.

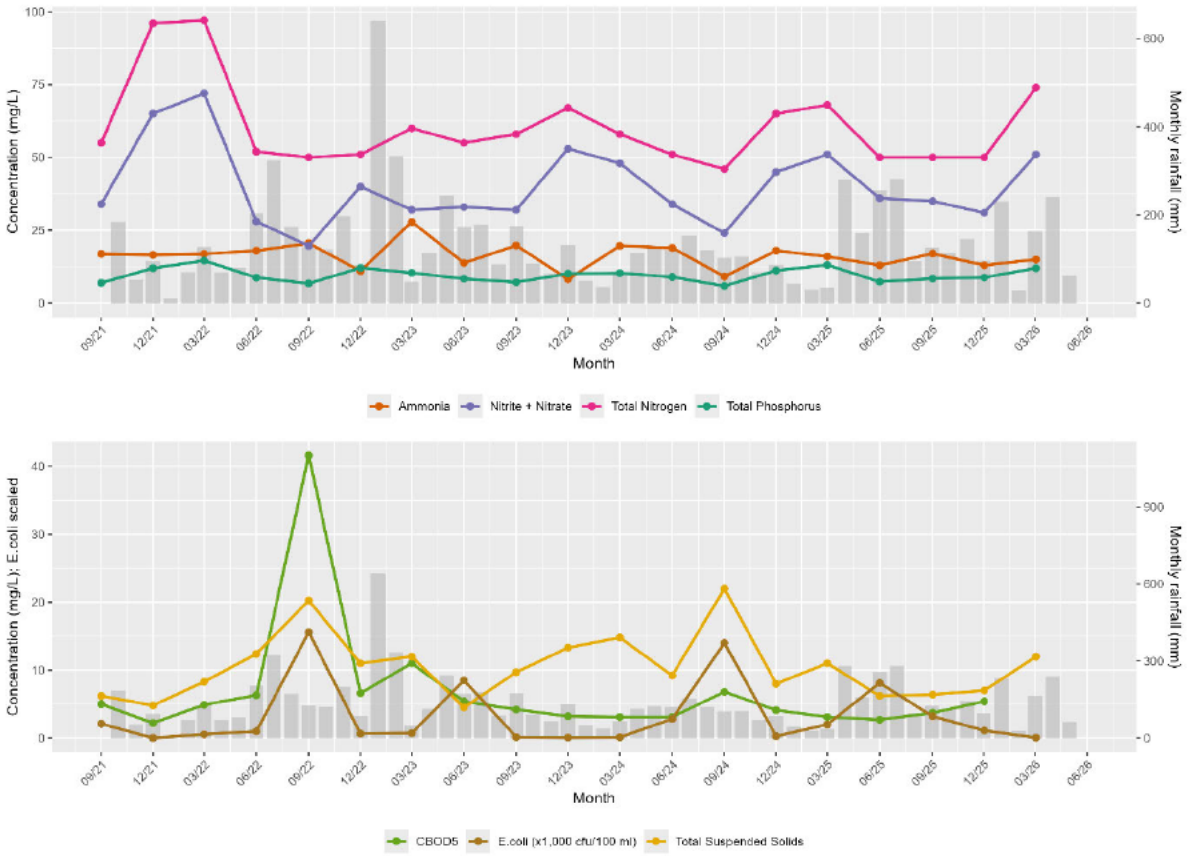

Figure 4-2 Discharge quality for the past five reporting periods compared with total monthly rainfall for 2021–2026. E. coli is plotted as ×1,000 cfu/100 mL for readability.

4.4 Incident results

On two occasions during the 2025–26 reporting period, the contents of the buffer tanks leaked into the nearby Waimauku Stream.

The first incident occurred on 12 April 2026 during a heavy rainfall event. The buffer tanks reached a high level and the balancing pipe between them failed, discharging an estimated 40 m^3 to the nearby Waimauku Stream. The tanks had been emptied by sucker truck ahead of the storm, so the inflow was largely rainfall-related infiltration. Watercare notified the Team Leader for Western Monitoring within two working days and provided details of the response and remedial actions. Samples were collected on 14 and 20 April (Table 4-3); however, the 14 April samples were not analysed due to laboratory miscommunication.

The 20 April 2026 results did not indicate a meaningful impact on the Waimauku Stream from the buffer tank leak. Ammoniacal nitrogen, $cBOD_5$, pH, total nitrogen, total phosphorus and total suspended solids were consistent between upstream and downstream locations. $cBOD_5$ concentrations were low, indicating limited organic loading. Total coliforms were elevated both upstream and downstream, which indicates the stream was exposed to wider catchment contamination. *E. coli* concentrations were higher upstream than downstream, suggesting the observed microbiological results were influenced by sources upstream of the WWTP and the heavy rainfall event.

Table 4-3 Water quality results for Waimauku Stream samples collected on 20 April 2026

Parameter	Units	Waimauku – Upstream of WWTP	Waimauku – Downstream of WWTP
Ammoniacal Nitrogen	mg/L	0.015	0.012
cBOD5	mg/L	0.59	<0.5
pH	-	7.1	7.1
Total Nitrogen	mg/L	2.0	1.9
Total Phosphorus	mg/L	0.058	0.057
TSS	mg/L	3.4	5.8
E. coli	MPN/100mL	910	790
Total Coliforms	MPN/100mL	16,000	20,000

The results from samples collected on 20 May 2026 do not suggest a significant impact on the Waimauku Stream from the second buffer tank leak that morning (Table 4-4). All water quality parameters were consistent between upstream and downstream sites. Total coliform and *E. coli* results were higher upstream than downstream, suggesting contamination sources from the wider catchment.

Table 4-4 Water quality results for Waimauku Stream samples collected on 20 May 2026

Parameter	Units	Waimauku – Upstream of WWTP	Waimauku – Downstream of WWTP
Ammoniacal Nitrogen	mg/L	0.026	0.01
cBOD5	mg/L	0.57	<0.5
pH	-	7.2	7.3
Total Nitrogen	mg/L	3.4	3.4
Total Phosphorus	mg/L	0.042	0.041
TSS	mg/L	<0.96	<0.83
E. coli	MPN/100mL	110	100
Total Coliforms	MPN/100mL	>2,400	2,400

The follow-up samples collected on 27 May 2026 did not indicate a delayed impact on the Waimauku Stream (Table 4-5). Water quality results were generally consistent between upstream and downstream sites. *E. coli* and total coliform concentrations were lower than in the previous sampling round, which may reflect the dry weather preceding sampling and reduced catchment runoff.

Table 4-5 Water quality results for Waimauku Stream samples collected on 27 May 2026

Parameter	Units	Waimauku – Upstream of WWTP	Waimauku – Downstream of WWTP
Ammoniacal Nitrogen	mg/L	0.017	0.0054
cBOD5	mg/L	1.2	0.71
pH	-	7.4	7.4
Total Nitrogen	mg/L	5.4	5.9
Total Phosphorus	mg/L	0.048	0.046
TSS	mg/L	3.1	1.8
E. coli	MPN/100mL	31	85
Total Coliforms	MPN/100mL	350	1,900

5 CONCLUSION

The Denehurst Wastewater Treatment Plant operated effectively during the 2025–26 reporting period. Daily discharge volumes remained within consented limits, monthly irrigation application rates complied with the relevant seasonal limits, and effluent quality met the consent standards for $cBOD_5$ and total suspended solids. Weekly inspections did not identify ponding, channelling or surface seepage.

Two balancing pipe failures in April and May 2026 resulted in non-compliance and discharges to the Waimauku Stream. Watercare notified Auckland Council within the required timeframe, investigated both incidents, completed receiving-environment sampling, repaired the balancing pipe after the first failure and replaced the balancing pipe after the second failure. Available monitoring results did not indicate significant stream effects.

A condition-by-condition assessment of compliance for the Denehurst WWTP is provided in Appendix B. The overall compliance rating for the 2025–26 reporting period is Category 2. This rating reflects two non-compliances associated with isolated balancing-pipe failures. The focus for the next reporting period is to monitor the replacement balancing pipe, complete the independent audit requirement, and maintain routine operational monitoring and inspections.

Appendix A. Daily discharge volumes

Date	Discharge volume (m3/day)	Irrigation
1/07/2025	1.16	0.7
2/07/2025	3.24	2.0
3/07/2025	3.24	2.0
4/07/2025	3.24	2.0
5/07/2025	3.24	2.0
6/07/2025	3.24	2.0
7/07/2025	3.24	2.0
8/07/2025	3.24	2.0
9/07/2025	3.24	2.0
10/07/2025	3.24	2.0
11/07/2025	3.24	2.0
12/07/2025	3.24	2.0
13/07/2025	3.24	2.0
14/07/2025	3.25	2.0
15/07/2025	3.24	2.0
16/07/2025	3.24	2.0
17/07/2025	3.24	2.0
18/07/2025	3.24	2.0
19/07/2025	3.24	2.0
20/07/2025	3.24	2.0
21/07/2025	3.08	1.9
22/07/2025	3.24	2.0
23/07/2025	3.24	2.0
24/07/2025	3.24	2.0
25/07/2025	3.24	2.0
26/07/2025	3.24	2.0
27/07/2025	3.15	1.9
28/07/2025	3.24	2.0
29/07/2025	3.19	2.0
30/07/2025	5.99	3.7
31/07/2025	0	0.0
1/08/2025	2.97	1.8
2/08/2025	3.24	2.0
3/08/2025	3.24	2.0
4/08/2025	3.24	2.0
5/08/2025	3.24	2.0
6/08/2025	3.09	1.9
7/08/2025	3.24	2.0
8/08/2025	3.24	2.0

Date	Discharge volume (m3/day)	Irrigation
9/08/2025	3.09	1.9
10/08/2025	3.07	1.9
11/08/2025	3.07	1.9
12/08/2025	3.13	1.9
13/08/2025	3.24	2.0
14/08/2025	3.09	1.9
15/08/2025	3.19	2.0
16/08/2025	3.06	1.9
17/08/2025	3.21	2.0
18/08/2025	3.14	1.9
19/08/2025	3.24	2.0
20/08/2025	3.24	2.0
21/08/2025	3.24	2.0
22/08/2025	3.24	2.0
23/08/2025	3.24	2.0
24/08/2025	3.24	2.0
25/08/2025	3.24	2.0
26/08/2025	3.24	2.0
27/08/2025	3.24	2.0
28/08/2025	3.24	2.0
29/08/2025	3.24	2.0
30/08/2025	3.24	2.0
31/08/2025	3.24	2.0
1/09/2025	3.24	2.0
2/09/2025	3.24	2.0
3/09/2025	3.24	2.0
4/09/2025	3.18	2.0
5/09/2025	3.24	2.0
6/09/2025	3.24	2.0
7/09/2025	3.24	2.0
8/09/2025	2.7	1.7
9/09/2025	3.24	2.0
10/09/2025	3.24	2.0
11/09/2025	3.24	2.0
12/09/2025	3.24	2.0
13/09/2025	3.24	2.0
14/09/2025	3.24	2.0
15/09/2025	3.24	2.0
16/09/2025	3.24	2.0

Date	Discharge volume (m3/day)	Irrigation
17/09/2025	3.24	2.0
18/09/2025	3.24	2.0
19/09/2025	3.24	2.0
20/09/2025	3.24	2.0
21/09/2025	3.24	2.0
22/09/2025	3.24	2.0
23/09/2025	3.24	2.0
24/09/2025	3.24	2.0
25/09/2025	3.24	2.0
26/09/2025	3.24	2.0
27/09/2025	3.24	2.0
28/09/2025	3.24	2.0
29/09/2025	3.24	2.0
30/09/2025	3.24	2.0
1/10/2025	6.48	4.0
2/10/2025	6.48	4.0
3/10/2025	6.48	4.0
4/10/2025	6.48	4.0
5/10/2025	6.48	4.0
6/10/2025	6.48	4.0
7/10/2025	6.48	4.0
8/10/2025	6.48	4.0
9/10/2025	6.48	4.0
10/10/2025	6.48	4.0
11/10/2025	6.48	4.0
12/10/2025	6.48	4.0
13/10/2025	6.48	4.0
14/10/2025	6.48	4.0
15/10/2025	6.48	4.0
16/10/2025	6.48	4.0
17/10/2025	6.48	4.0
18/10/2025	6.48	4.0
19/10/2025	6.48	4.0
20/10/2025	6.48	4.0
21/10/2025	6.48	4.0
22/10/2025	6.48	4.0
23/10/2025	6.48	4.0
24/10/2025	6.48	4.0
25/10/2025	6.48	4.0
26/10/2025	6.48	4.0
27/10/2025	6.48	4.0
28/10/2025	6.48	4.0
29/10/2025	6.48	4.0

Date	Discharge volume (m3/day)	Irrigation
30/10/2025	6.48	4.0
31/10/2025	6.48	4.0
1/11/2025	6.48	4.0
2/11/2025	6.48	4.0
3/11/2025	6.48	4.0
4/11/2025	6.48	4.0
5/11/2025	6.48	4.0
6/11/2025	6.48	4.0
7/11/2025	6.48	4.0
8/11/2025	6.48	4.0
9/11/2025	6.48	4.0
10/11/2025	6.48	4.0
11/11/2025	6.48	4.0
12/11/2025	6.48	4.0
13/11/2025	6.48	4.0
14/11/2025	6.48	4.0
15/11/2025	6.48	4.0
16/11/2025	6.48	4.0
17/11/2025	6.48	4.0
18/11/2025	6.48	4.0
19/11/2025	6.48	4.0
20/11/2025	6.48	4.0
21/11/2025	6.48	4.0
22/11/2025	6.48	4.0
23/11/2025	6.48	4.0
24/11/2025	6.48	4.0
25/11/2025	6.48	4.0
26/11/2025	6.48	4.0
27/11/2025	6.48	4.0
28/11/2025	6.48	4.0
29/11/2025	6.48	4.0
30/11/2025	6.48	4.0
1/12/2025	6.48	4.0
2/12/2025	6.48	4.0
3/12/2025	6.48	4.0
4/12/2025	6.48	4.0
5/12/2025	6.48	4.0
6/12/2025	6.48	4.0
7/12/2025	6.48	4.0
8/12/2025	6.48	4.0
9/12/2025	6.48	4.0
10/12/2025	6.48	4.0
11/12/2025	6.48	4.0

Date	Discharge volume (m3/day)	Irrigation
12/12/2025	6.48	4.0
13/12/2025	6.48	4.0
14/12/2025	6.48	4.0
15/12/2025	6.48	4.0
16/12/2025	6.48	4.0
17/12/2025	6.48	4.0
18/12/2025	6.48	4.0
19/12/2025	6.48	4.0
20/12/2025	6.48	4.0
21/12/2025	6.48	4.0
22/12/2025	6.48	4.0
23/12/2025	6.48	4.0
24/12/2025	6.48	4.0
25/12/2025	6.48	4.0
26/12/2025	6.48	4.0
27/12/2025	6.48	4.0
28/12/2025	6.48	4.0
29/12/2025	6.48	4.0
30/12/2025	6.48	4.0
31/12/2025	6.48	4.0
1/01/2026	6.48	4.0
2/01/2026	6.48	4.0
3/01/2026	6.48	4.0
4/01/2026	6.48	4.0
5/01/2026	6.48	4.0
6/01/2026	6.48	4.0
7/01/2026	6.48	4.0
8/01/2026	6.48	4.0
9/01/2026	6.48	4.0
10/01/2026	6.48	4.0
11/01/2026	6.48	4.0
12/01/2026	6.48	4.0
13/01/2026	6.48	4.0
14/01/2026	6.48	4.0
15/01/2026	6.48	4.0
16/01/2026	6.48	4.0
17/01/2026	6.48	4.0
18/01/2026	6.48	4.0
19/01/2026	6.48	4.0
20/01/2026	6.48	4.0
21/01/2026	6.48	4.0
22/01/2026	6.48	4.0
23/01/2026	5.04	3.1

Date	Discharge volume (m3/day)	Irrigation
24/01/2026	6.48	4.0
25/01/2026	6.48	4.0
26/01/2026	6.48	4.0
27/01/2026	6.48	4.0
28/01/2026	6.48	4.0
29/01/2026	6.48	4.0
30/01/2026	6.48	4.0
31/01/2026	6.48	4.0
1/02/2026	6.48	4.0
2/02/2026	6.48	4.0
3/02/2026	6.48	4.0
4/02/2026	6.48	4.0
5/02/2026	6.48	4.0
6/02/2026	6.48	4.0
7/02/2026	6.48	4.0
8/02/2026	6.48	4.0
9/02/2026	6.48	4.0
10/02/2026	6.48	4.0
11/02/2026	6.48	4.0
12/02/2026	6.48	4.0
13/02/2026	6.48	4.0
14/02/2026	6.48	4.0
15/02/2026	6.48	4.0
16/02/2026	6.48	4.0
17/02/2026	6.48	4.0
18/02/2026	6.48	4.0
19/02/2026	6.48	4.0
20/02/2026	6.48	4.0
21/02/2026	6.48	4.0
22/02/2026	6.48	4.0
23/02/2026	6.48	4.0
24/02/2026	6.48	4.0
25/02/2026	6.48	4.0
26/02/2026	6.48	4.0
27/02/2026	6.48	4.0
28/02/2026	6.48	4.0
1/03/2026	6.48	4.0
2/03/2026	6.48	4.0
3/03/2026	6.48	4.0
4/03/2026	6.48	4.0
5/03/2026	6.08	3.8
6/03/2026	6.48	4.0
7/03/2026	6.48	4.0

Date	Discharge volume (m3/day)	Irrigation
8/03/2026	6.48	4.0
9/03/2026	6.48	4.0
10/03/2026	6.48	4.0
11/03/2026	4.5	2.8
12/03/2026	5.3	3.3
13/03/2026	6.48	4.0
14/03/2026	6.48	4.0
15/03/2026	6.48	4.0
16/03/2026	6.48	4.0
17/03/2026	6.48	4.0
18/03/2026	6.48	4.0
19/03/2026	6.28	3.9
20/03/2026	6.48	4.0
21/03/2026	6.48	4.0
22/03/2026	6.48	4.0
23/03/2026	6.48	4.0
24/03/2026	2.52	1.6
25/03/2026	0	0.0
26/03/2026	6.48	4.0
27/03/2026	6.48	4.0
28/03/2026	6.48	4.0
29/03/2026	6.48	4.0
30/03/2026	6.48	4.0
31/03/2026	6.48	4.0
1/04/2026	6.48	4.0
2/04/2026	6.48	4.0
3/04/2026	6.48	4.0
4/04/2026	6.48	4.0
5/04/2026	6.48	4.0
6/04/2026	6.48	4.0
7/04/2026	6.48	4.0
8/04/2026	6.48	4.0
9/04/2026	6.48	4.0
10/04/2026	6.12	3.8
11/04/2026	6.48	4.0
12/04/2026	6.48	4.0
13/04/2026	3.6	2.2
14/04/2026	3.6	2.2
15/04/2026	6.48	4.0
16/04/2026	6.48	4.0
17/04/2026	6.48	4.0
18/04/2026	6.48	4.0
19/04/2026	6.48	4.0

Date	Discharge volume (m3/day)	Irrigation
20/04/2026	6.48	4.0
21/04/2026	6.48	4.0
22/04/2026	6.48	4.0
23/04/2026	6.48	4.0
24/04/2026	6.48	4.0
25/04/2026	6.48	4.0
26/04/2026	6.48	4.0
27/04/2026	6.48	4.0
28/04/2026	6.48	4.0
29/04/2026	6.48	4.0
30/04/2026	6.48	4.0
1/05/2026	2.89	1.8
2/05/2026	3.24	2.0
3/05/2026	3.24	2.0
4/05/2026	2.91	1.8
5/05/2026	2.91	1.8
6/05/2026	3.24	2.0
7/05/2026	3.24	2.0
8/05/2026	3.24	2.0
9/05/2026	3.24	2.0
10/05/2026	3.24	2.0
11/05/2026	3.24	2.0
12/05/2026	3.24	2.0
13/05/2026	3.24	2.0
14/05/2026	3.24	2.0
15/05/2026	3.24	2.0
16/05/2026	3.24	2.0
17/05/2026	3.24	2.0
18/05/2026	3.24	2.0
19/05/2026	3.24	2.0
20/05/2026	3.24	2.0
21/05/2026	1.63	1.0
22/05/2026	0	0.0
23/05/2026	0	0.0
24/05/2026	3.24	2.0
25/05/2026	3.24	2.0
26/05/2026	3.24	2.0
27/05/2026	3.24	2.0
28/05/2026	1.44	0.9
29/05/2026	3.24	2.0
30/05/2026	3.24	2.0
31/05/2026	3.24	2.0
1/06/2026	3.24	2.0

Date	Discharge volume (m3/day)	Irrigation
2/06/2026	3.24	2.0
3/06/2026	1.44	0.9
4/06/2026	3.24	2.0
5/06/2026	3.24	2.0
6/06/2026	3.24	2.0
7/06/2026	3.24	2.0
8/06/2026	3.24	2.0
9/06/2026	3.24	2.0
10/06/2026	3.24	2.0
11/06/2026	3.24	2.0
12/06/2026	1.99	1.2
13/06/2026	1.99	1.2
14/06/2026	3.24	2.0
15/06/2026	3.24	2.0

Date	Discharge volume (m3/day)	Irrigation
16/06/2026	3.24	2.0
17/06/2026	3.24	2.0
18/06/2026	3.24	2.0
19/06/2026	3.24	2.0
20/06/2026	3.24	2.0
21/06/2026	3.24	2.0
22/06/2026	3.24	2.0
23/06/2026	3.24	2.0
24/06/2026	3.24	2.0
25/06/2026	3.24	2.0
26/06/2026	3.24	2.0
27/06/2026	3.24	2.0
28/06/2026	3.24	2.0
29/06/2026	3.24	2.0

Appendix B. Summary of compliance

Condition Number	Consent Conditions Denehurst WWTP Discharge to Land (#DIS6004847)	Condition Rating	Comment
01	The discharge of domestic wastewater to land from the 19 lot subdivision serviced by the existing wastewater treatment system located at 3 and 4 Denehurst Drive, Waimauku shall be carried out in accordance with the plans and all information submitted with the application, detailed below, and all referenced by the Council as consent number DIS6004847. See table on page 5-6 of consent document for more details.	1	Compliant
02	This consent (or any part thereof) shall not commence until such time as the following charges, which are owing at the time the Council's decision is notified, have been paid in full: a. All fixed charges relating to the receiving, processing and granting of this resource consent under section 36(1) of the Resource Management Act 1991 (RMA); and b. All additional charges imposed under section 36(3) of the RMA to enable the Council to recover its actual and reasonable costs in respect of this application, which are beyond challenge	1	
03	The consent holder shall pay any subsequent further charges imposed under section 36 of the RMA relating to the receiving, processing and granting of this resource consent within 20 days of receipt of notification of a requirement to pay the same, provided that, in the case of any additional charges under section 36(3) of the RMA that are subject to challenge, the consent holder shall pay such amount as is determined by that process to be due and owing, within 20 days of receipt of the relevant decision.	1	
04	Under section 125 of the RMA, this consent lapses five years after the date it is granted unless: a. The consent is given effect to; or b. The Council extends the period after which the consent lapses.	1	
05	The consent holder shall pay the Council an initial consent compliance monitoring charge of $900 (inclusive of GST), plus any further monitoring charge or charges to recover the actual and reasonable costs that have been incurred to ensure compliance with the conditions attached to this consent.	1	
06	Discharge permit DIS60048047 shall expire 20 years after its commencement, unless it has lapsed, been surrendered or been cancelled at an earlier date pursuant to the RMA.	1	
07	The maximum wastewater volume discharged to land shall not exceed 14.8 m^3/day.	1	
08	The average wastewater application rate in the months May through September shall not exceed 2mm/day.	1	Compliant
09	The average wastewater application rate in the months October through April shall no exceed more than 4 mm/day.	1	Compliant

Condition Number	Consent Conditions Denehurst WWTP Discharge to Land (#DIS6004847)	Condition Rating	Comment
10	The quality of treated wastewater immediately before it is discharged to the land shall not exceed the standards specified below. See table on page 7 of the consent document.	1	Compliant
11	The discharge of wastewater to land shall not result in either of the following: a. ponding of wastewater within or adjacent to the land disposal area; b. channelling of wastewater that results in overland runoff of wastewater beyond the land disposal area; or c. surface seepage (breakout) of wastewater beyond the land disposal area.	1	Not compliant – see section 4.4
12	Works and installed components of the wastewater treatment and land disposal system, their capacity, efficiency, controls, and location with respect to the site boundaries, shall be consistent with that described in the application.	1	Compliant
13	For disposal fields on the site, the consent holder shall ensure that the following standards are met to the satisfaction of the Team Leader Western Monitoring, Auckland Council: a. At least 640 m^2 land disposal area in the Southern field with pressure compensated drip irrigation (PCDI) system consisting of 1,600 m of line, line spacing of 0.4 m, emitter spacing of 0.6 m and with clearly marked flush valves installed so that the lines can be flushed in two separate groups. The PCDI lines shall be installed subsurface within the topsoil at a depth of approximately 100 mm; and, b. At least 1,000 m^2 land disposal area in the Northern field with pressure compensated drip irrigation (PCDI) system consisting of 1000 m of line, line spacing of 1 m, emitter spacing of 1 m and with clearly marked flush valves at the end of each line. The PCDI lines shall be installed subsurface within the topsoil at a depth of approximately 100 mm. c. Dense vegetation that achieves at least 75% ground coverage of the total land disposal area on the site with suitable plant species (as recommended by TP58 Appendix G, or by a suitably qualified professional with expertise in botany), is established and maintained at all times. d. Post and chain fence maintained with appropriate signage that discourages unauthorised access to the land disposal area.	1	
14	The wastewater treatment and land disposal system shall be maintained in good working order at all times.	2	Not compliant – see section 4.4

Condition Number	Consent Conditions Denehurst WWTP Discharge to Land (#DIS6004847)	Condition Rating	Comment
15	The consent may modify the wastewater treatment and land disposal system. Prior to the implementation of any modifications to the wastewater treatment and land disposal system, the following information shall be submitted to the Team Leader Western Monitoring, Auckland Council, to confirm that the conditions in this consent can continue to be complied with: a. Plans and drawings outlining the details of the modifications; and b. Supporting information that details how modifications to the system do affect operations, the capacity and performance of the wastewater treatment and land disposal system.	1	
16	Within 10 working days of the implementation of any modifications, as-built plans which are certified by a suitably qualified and experienced professional as a true record of the installed system shall be provided to the Team Leader Western Monitoring, Auckland Council. The as-built plans shall display the entire wastewater system, and shall include: a. the location, dimensions and levels of any drainage field and reserve drainage field; b. plans, descriptions and dimension of all wastewater devices, including confirmation of the storage volumes and levels of any outflow; and c. details of any other structures or works required by this consent (including the bund to be extended along the western edge of the land disposal area).	1	
17	The consent holder shall maintain an updated Operation and Maintenance Plan addressing the following components to ensure the performance of the ongoing operation and maintenance of the wastewater treatment and land disposal system: • System and process details • System design parameters • System specifications • Management of the system • Monitoring of the system • Reporting procedures • Contingency Management • Instructions, tasks, forms and checklists • Important Contacts The Plan shall include but not be limited to: See consent document for details.	1	NZ1-14585289-Denehurst Drive WWTP- Operations and Maintenance Plan. 2017
18	The wastewater treatment and disposal system shall be managed in accordance with the updated Operation and Maintenance Plan.	1	

Condition Number	Consent Conditions Denehurst WWTP Discharge to Land (#DIS6004847)	Condition Rating	Comment
19	The Consent Holder shall maintain flow meters to measure the total daily discharge volume to land. The flow meter shall be read at the same time of each consecutive day.	1	Compliant
20	The Team Leader Western Monitoring, Auckland Council, may decrease or cease the frequency of flow monitoring if requested by the consent holder after the system has been operating for a minimum of 6 months. The Team Leader Western Monitoring, Auckland Council, may require flow meter readings to recommence at any stage to assist in monitoring compliance with this consent.	1	
21	Samples of treated wastewater shall be collected and analysed quarterly, during the months of December, March, June and September for the following parameters. See table on page 10 of the consent document.	1	Compliant
22	All samples shall be collected and analysed in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater", a joint publication of the American Public Health Association, Water Environment Federation and the American Water Works Association; or an alternative method that has been approved in writing by the Team Leader Western Monitoring, Auckland Council.	1	
23	The Team Leader Western Monitoring, Auckland Council, may decrease or cease the frequency of discharge quality monitoring if requested by the consent holder after the system has been operating for a minimum of 6 months. The Team Leader Western Monitoring, Auckland Council, may require the discharge quality monitoring to recommence at any stage to assist in monitoring compliance with this consent.	1	
24	Visual monitoring shall be undertaken at least once per week, on the same day of each week, to record any wastewater effluent break out and / or surface runoff from the land disposal system. Records logged shall include but not be limited to: a. Date and time of monitoring; b. Weather conditions; c. Confirmation of whether or not the treatment system has been operating correctly over the previous seven days, and if not a description of the change to operations; and d. Confirmation of evidence of breakout in the land disposal system.	1	Compliant

Condition Number	Consent Conditions Denehurst WWTP Discharge to Land (#DIS6004847)	Condition Rating	Comment
25	If evidence of breakout in the disposal field is identified, the consent holder shall: a. Collect and analyse samples water quality in the Waimauku Stream to identify any discharge-related impacts on water quality b. Collect and analyse meter readings and discharge quality monitoring information c. Advise the Team Leader Western Monitoring within 2 working days of the evidence of breakout being detected; d. Advise the Team Leader Western Monitoring of the actions taken/being taken to address and remedy the cause of observed breakout within 5 working days of being detected; e. Undertake additional sampling and analysis at the request of the Team Leader Western Monitoring, Auckland Council, to verify the wastewater treatment and land disposal system is being operated in accordance with the consent discharge and water quality standards.	1	
26	In accordance with Condition 25(a), water quality samples of the Waimauku Stream shall be collected on the day that evidence of breakout in the disposal field is identified, and in the following week, as follows: a. from a point at the subdivision boundary upstream of the disposal area (at approximately NZTM (2000) 5929542N and 1732944E), and, b. from a point within approximately 120 metres downstream of the subdivision boundary of the disposal area (at approximately NZTM (2000) 5929140N and 1732864E).	1	
27	Water quality samples shall be analysed for the following parameters. All samples shall be collected and analysed in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater", a joint publication of the American Public Health Association, Water Environment Federation and the American Water Works Association; or an alternative method that has been approved in writing by the Team Leader Western Monitoring.	1	
28	In the event of any exceedance of the discharge standards in Conditions 7 to 11 the consent holder shall: a. Advise the Team Leader Western Monitoring, Auckland Council, of the exceedance within 2 working days of the exceedance being detected; b. Advise the Team Leader Western Monitoring, Auckland Council, of the actions taken/being taken to address and remedy the cause of the exceedance within 5 working days of the exceedance being detected; c. Undertake additional sampling and analysis at the request of the Team Leader Western Monitoring, Auckland Council, to verify the wastewater treatment and land disposal system is being operated in accordance with the consent discharge standards.	1	Auckland Council was notified of the buffer tank leaks

Condition Number	Consent Conditions Denehurst WWTP Discharge to Land (#DIS6004847)	Condition Rating	Comment
29	That an annual Performance Report shall be submitted to the Team Leader Western Monitoring, Auckland Council, on 30 September. A template for the performance report shall be included in the Operations Management Plan for approval by the Manager. The Performance Report shall: a. Collate, analyse and interpret all relevant data and information pertaining to this consent for the previous year from 1 July to 30 June, including maintenance service records, flow and discharge quality monitoring records and details of any contingencies and complaints received. b. Include comment on general plant performance and any trends in changes in the discharge volume and/or the discharge quality standards over time. c. Include a consideration of compliance with each consent condition and evaluate against the Auckland Council standard compliance scoring protocol. d. Make recommendations and submit timetable to rectify any non-compliance.	1	Compliant
30	Within 10 years of the commencement of this consent, an audit report of the condition, operation, and performance of the wastewater treatment and land disposal system shall prepared by a suitably qualified wastewater professional. The audit report shall include: a. An assessment of the condition of the wastewater treatment and land disposal system and wastewater volumes tankered offsite. b. An assessment of the adequacy of the system to treat and dispose the consented wastewater volume. c. An up-to-date list of the components of the wastewater treatment and land disposal system. d. Recommendations including timeframes for any changes, upgrades or remedial works to the treatment and land disposal system or process. A copy of the assessment report shall be provided to the Team Leader Western Monitoring by no later than 30 September of the year in which the assessment is undertaken.	1	Due in 2026-2027
31	All recommendations specified in the audit report shall be implemented to the satisfaction of the Team Leader Western Monitoring.	1	

Condition Number	Consent Conditions Denehurst WWTP Discharge to Land (#DIS6004847)	Condition Rating	Comment
32	The conditions of this consent may be reviewed by the Team Leader Western Monitoring, Auckland Council, pursuant to section 128 of the Resource Management Act (RMA), by giving notice pursuant to section 129, on each anniversary of the commencement of this consent in order to: a. To deal with any adverse effect on the environment which may arise or potentially arise from the exercise of this consent and which it is appropriate to deal with at a later stage, in particular adverse effects on soils, surface waters or groundwater. b. to require the adoption of the best practicable option to prevent or minimise any adverse effects on the environment, in particular adverse effects on soils, surface waters or groundwater c. To alter monitoring requirements as a result of ongoing monitoring outcomes.	1	

Appendix C. Data sources

Table 5-1 Download location of environmental monitoring data used in this report

Category	Parameter	Source platform	Tag/ID
Effluent volume	Daily effluent discharge volume	ID/ Pi DataLink	DTDEN_52_FQ_001_VOLUMEDAY
Effluent quality	Ammonia, cBOD5, Nitrite + Nitrate, Total N, Total P	ID/ Labware	WSL_DD_STP_DIS_EFF
Rainfall	Total monthly rainfall	Moata	ACC - Rain -Kumeu @ Maddrens ID# 647513
Weekly inspections	Presence of ponding	Excel	O:\Ops\Wastewater Operations\Regional Plants\Nth Region\03 Asset Ops_Nth\1-Admin_Nth\LOGSHEETS\Army Bay Hub Logsheets-working\2025-2026