



Denehurst Wastewater Treatment Plant Annual Report

Final - September 2025

Watercare 


QUALITY INFORMATION

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REVISION HISTORY

Rev	Revision Date	Name	Position	Signature
1	24/09/2025	Michiel Jonker	Environmental Care Manager	
2	30/09/2025	Gabriel Freitas De Almeida	Operations Controller	
3	30/09/2025	Jon Piggot	Head of Wastewater	

APPROVED

Date	Name	Position	Signature
30/09/2025	Michiel Jonker	Environmental Care Manager	

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.

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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 0-1 - Table of abbreviations

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

EXECUTIVE SUMMARY

This annual report documents the performance of the Denehurst Wastewater Treatment Plant (WWTP) for the period 1 July 2024 to 30 June 2025. The WWTP operates under resource consent DIS60048047, which permits the discharge of up to 14.8 m³/day of treated domestic wastewater to land at application rates of 2 mm/day (May–September) and 4 mm/day (October–April).

Main findings include:

- **Flows and irrigation:** Daily discharge volumes remained within the 14.8 m³/day consent limit. One breach of the 2 mm/day irrigation limit occurred in June 2025 (2.1 mm/day) due to a SCADA alarm fault.
- **Effluent quality:** Five-day carbonaceous biochemical oxygen demand (cBOD5) results consistently complied with the 15 mg/L limit. A single breach of the total suspended solids (TSS) limit occurred in September 2024 (22 mg/L) during tank drainage following heavy rainfall. A repeat sample in October returned 6 mg/L.
- **Monitoring:** Required quarterly sampling and weekly visual inspections were carried out. No ponding, channelling, or surface seepage was observed.
- **Compliance management:** While operational responses resolved the exceedances, Council was not notified of the September 2024 TSS breach within the timeframes required by Condition 28, representing a reporting non-compliance.

On balance, the plant's performance is assessed as Category 2 compliance: generally compliant, with isolated technical non-compliances that had no more than minor environmental effects and were promptly managed.

1 INTRODUCTION

1.1 Outline

This annual report covers consent compliance for the Denehurst Wastewater Treatment Plant (WWTP) from July 2024 to June 2025. The report includes:

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

1.2 Consents and plans

1.2.1 Consents

Discharge to land permit DIS60048047 enables the operation of the WWTP, discharging up to 14,800 L/day of wastewater into an effluent disposal field, at a rate between 2 and 4 mm/day, depending on season.

1.2.2 Plans

The WWTP has a single management plan. Watercare last updated the “Denehurst Drive Operation and Maintenance Plan” in October 2017.

2 TREATMENT PLANT

2.1 Current operation

The Denehurst WWTP is at 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.

2.1.1 Upgrades and maintenance

There have been no major upgrades or maintenance tasks conducted during the 2024-25 reporting period.

2.1.2 Incidents and issues

There were no complaints reported against the WWTP. However, there were two minor incidents resulting in non-compliance:

- On 29 June 2025, the buffer tanks reached a high level without triggering a Supervisory Control and Data Acquisition (SCADA) alarm. As the operators were not alerted to this issue, a greater volume of effluent was discharged to the disposal field than planned. Staff have since investigated and rectified the SCADA alarm fault.
- In September, excessive rainfall warranted the irrigation tank to be drained. This stirred up the discharge contents, and before the solids could settle the quarterly sampling was conducted, leading to an exceedance in total suspended solids.

3 COMPLIANCE

3.1 Introduction

The assessment of WWTP performance considers:

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

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

Table 3-1 - 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

3.2 Method statement

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, with additional verification sampling in October following a high total suspended solids result. 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.

All operational and monitoring records, including PI tag IDs and SCADA outputs used in this report, are collated in Appendix C (Data Sources).

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.

3.3 Plant performance

3.3.1 Effluent volumes

Daily effluent discharge volumes are presented in Figure 3-1, and confirm that the daily limit of 14.8 m³/day was not breached during the reporting period. The total annual discharge volume for the 2024-25 reporting period was 1,806 m³.

The average wastewater application rates via irrigation are presented in Table 3-2, and shows that the monthly average was breached in June 2025. As previously mentioned in Section 2.1.2, this was a result of a failed SCADA alarm that did not notify operators of the high buffer tank level. The result was that the monthly average for irrigation rates breached the 2 mm/day limit by 0.1 mm. All remaining months of the year were compliant as per the discharge standards set out in the consent.

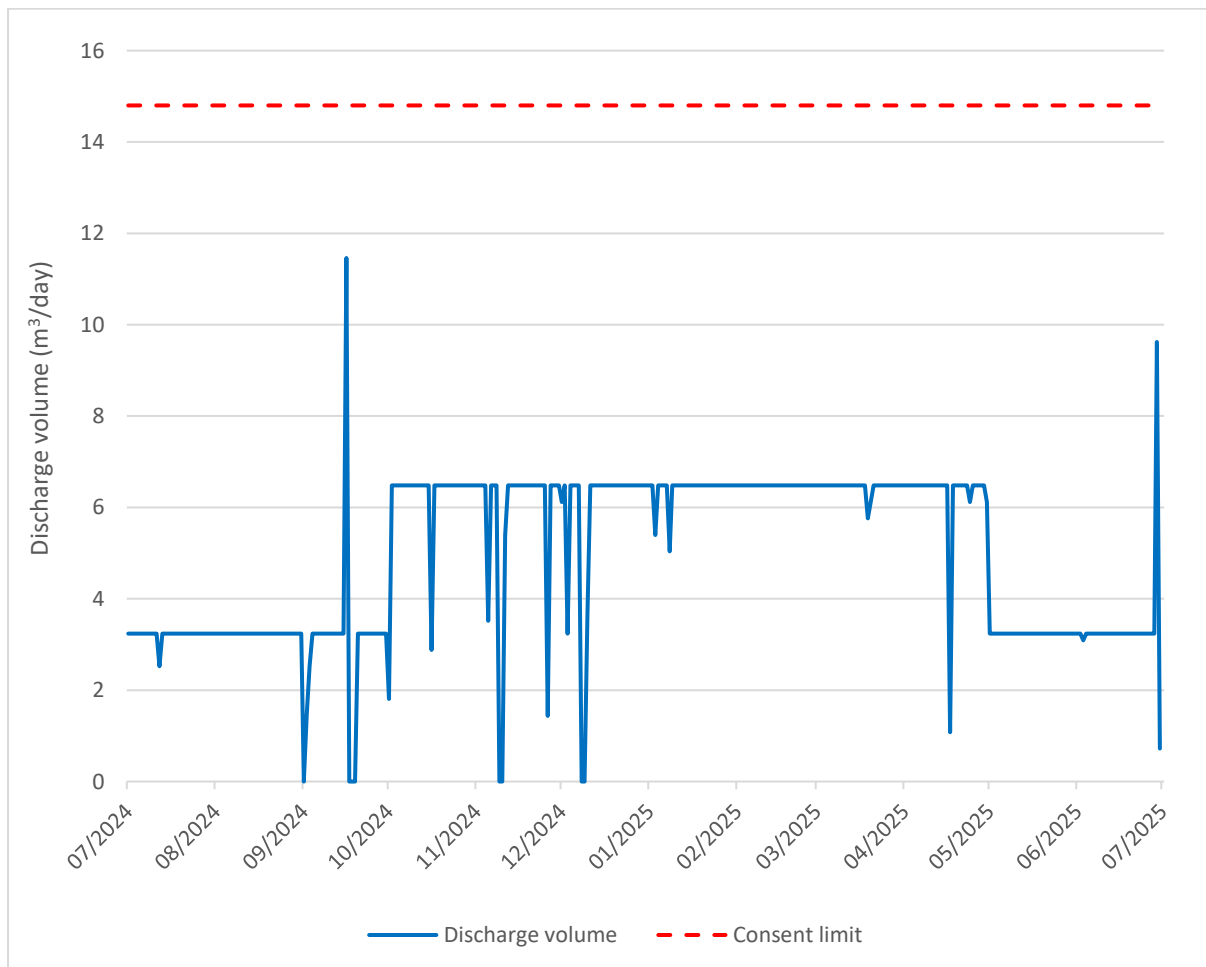


Figure 3-1 Daily effluent discharge volumes during the 2024-25 reporting period.

Table 3-2 Monthly average wastewater irrigation rates and corresponding limits for the reporting period 2024-2025

Date	Average irrigation volume (mm/day)	Consent limit (mm/day)
Jul-24	2.0	2
Aug-24	2.0	2
Sept-24	1.9	2
Oct-24	3.8	4
Nov-24	3.6	4
Dec-24	3.6	4
Jan-25	4.0	4
Feb-25	4.0	4
Mar-25	4.0	4
Apr-25	3.9	4
May-25	2.0	2
Jun-25	2.1	2

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

3.3.2 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 3-3 and show that the quality standard for cBOD₅ was met, but not for total suspended solids (TSS) which recorded 22 mg/L in September. This exceedance occurred as a result of the irrigation tank requiring to be drained following excessive rainfall, which stirred up the contents and prevented the solids settling before the quarterly sampling was conducted. A repeat sample was conducted in October, after the tank had time to settle, and returned a result of 6.0 mg/L.

Table 3-3 Discharge quality monitoring during the 2024-25 reporting period, compared to consent standards

	Ammonia (mg/L)	cBOD ₅ (mg/L)	E.coli (cfu/100 ml)	NO ₂ + NO ₃ (mg/L)	Total N (mg/L)	Total P (mg/L)	TSS (mg/L)
3/09/24	9.1	6.8	14,000	24	46	5.87	22.0
15/10/24	-	-	-	-	-	-	6.0
3/12/24	18.0	4.1	270	45	65	11.20	8.0
4/03/25	16.0	3.1	2,000	51	68	13.10	11.0
3/06/25	13.0	2.7	8,100	36	50	7.33	6.2

	Ammonia (mg/L)	cBOD ₅ (mg/L)	E.coli (cfu/ 100 ml)	NO ₂ + NO ₃ (mg/L)	Total N (mg/L)	Total P (mg/L)	TSS (mg/L)
Consent limit	-	15	-	-	-	-	15
Average	14.0	4.2	6,093	39	57	9.38	11.8
Maximum	18.0	6.0	14,000	51	68	13.10	22.0

3.3.3 Effluent quality trends

To assess trends in discharge quality over time, data from the past five reporting periods have been plotted alongside total monthly rainfall (Figure 3-2). Among the nutrient parameters, nitrite plus nitrate and total nitrogen exhibit a similar seasonal pattern, as expected. In the first two reporting periods, a clear seasonal trend is evident, peaking in summer and declining through winter. This pattern is less pronounced in the 2022–23 reporting year, likely due to the extreme rainfall experienced during summer. The seasonal trends become more apparent again in the following two periods, aligning with the return of typical seasonal rainfall patterns. In contrast, ammonia and total phosphorus do not show a strong seasonal trend.

The remaining parameters, cBOD₅, total suspended solids, and *E.coli*, tend to peak around spring, although this is not consistent across all years. Notably, *E.coli* shows a distinct peak following the extreme weather event in February 2023.

Overall, while some seasonal trends are evident, other factors must also influence discharge quality at the WWTP.

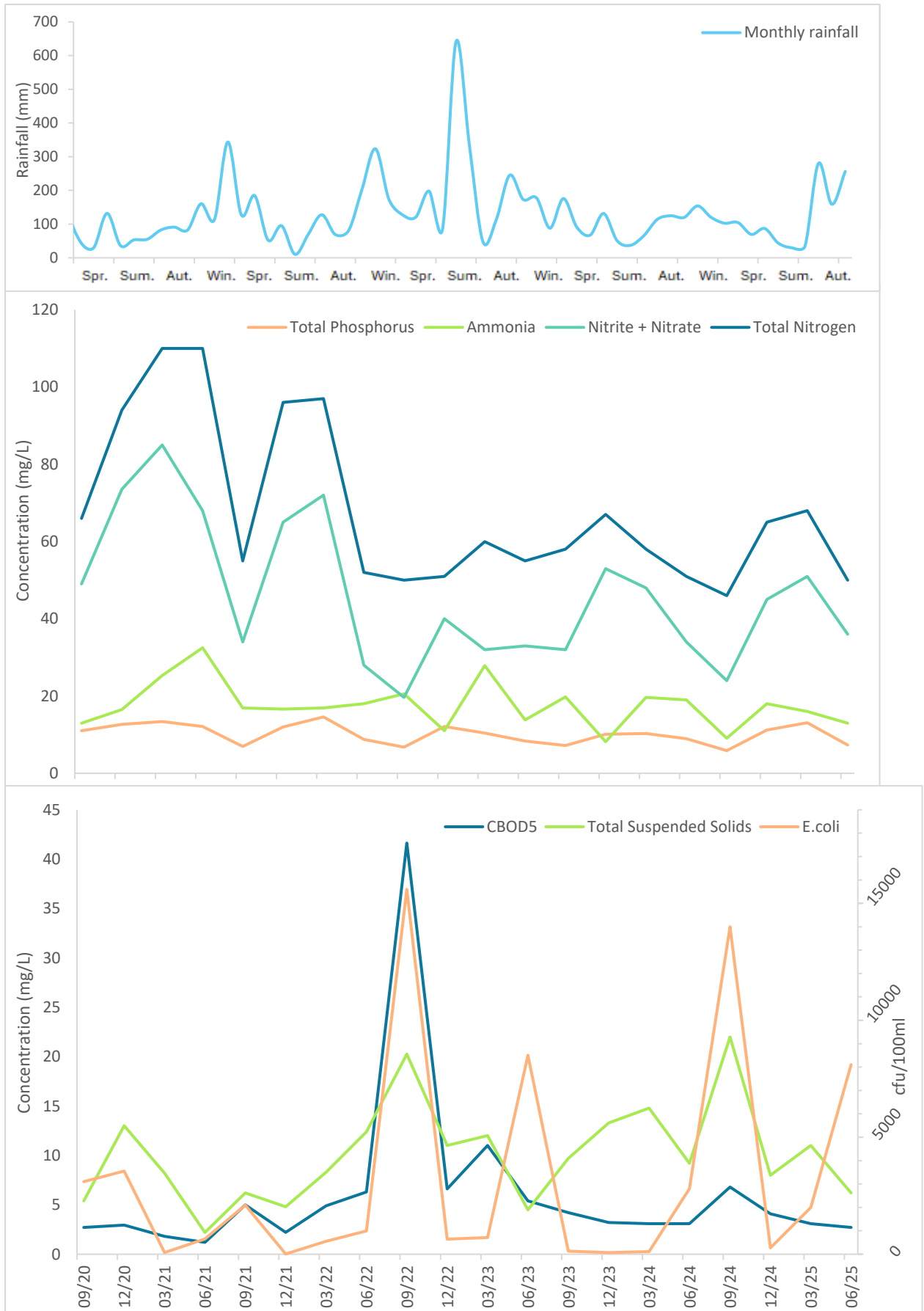


Figure 3-2 Discharge quality against total monthly rainfall for the period 2020-2025

3.4 Summary of compliance

A condition-by-condition assessment of compliance for the Denehurst WWTP is provided in Appendix B. The overall compliance rating suggested is a Category 2.

4 CONCLUSION

The Denehurst Wastewater Treatment Plant has continued to operate effectively throughout the 2024–25 reporting period, maintaining a high level of compliance with its resource consent conditions. Daily discharge volumes remained within consented limits, and effluent quality generally met required standards, with only one minor exceedance in total suspended solids due to operational constraints during a high rainfall event. While a single irrigation exceedance occurred in June 2025, this was promptly investigated and resolved.

Seasonal trends in nutrient parameters remain consistent with previous years, indicating stable system performance. Overall, the plant continues to demonstrate reliable operation with only minor, well-managed exceptions.

Appendix A. Daily discharge volumes

Date	Discharge volume	Irrigation
1/07/24	3.24	2.00
2/07/24	3.24	2.00
3/07/24	3.24	2.00
4/07/24	3.24	2.00
5/07/24	3.24	2.00
6/07/24	3.24	2.00
7/07/24	3.24	2.00
8/07/24	3.24	2.00
9/07/24	3.24	2.00
10/07/24	3.24	2.00
11/07/24	3.24	2.00
12/07/24	2.52	1.56
13/07/24	3.24	2.00
14/07/24	3.24	2.00
15/07/24	3.24	2.00
16/07/24	3.24	2.00
17/07/24	3.24	2.00
18/07/24	3.24	2.00
19/07/24	3.24	2.00
20/07/24	3.24	2.00
21/07/24	3.24	2.00
22/07/24	3.24	2.00
23/07/24	3.24	2.00
24/07/24	3.24	2.00
25/07/24	3.24	2.00
26/07/24	3.24	2.00
27/07/24	3.24	2.00
28/07/24	3.24	2.00
29/07/24	3.24	2.00
30/07/24	3.24	2.00
31/07/24	3.24	2.00
1/08/24	3.24	2.00
2/08/24	3.24	2.00

Date	Discharge volume	Irrigation
3/08/24	3.24	2.00
4/08/24	3.24	2.00
5/08/24	3.24	2.00
6/08/24	3.24	2.00
7/08/24	3.24	2.00
8/08/24	3.24	2.00
9/08/24	3.24	2.00
10/08/24	3.24	2.00
11/08/24	3.24	2.00
12/08/24	3.24	2.00
13/08/24	3.24	2.00
14/08/24	3.24	2.00
15/08/24	3.24	2.00
16/08/24	3.24	2.00
17/08/24	3.24	2.00
18/08/24	3.24	2.00
19/08/24	3.24	2.00
20/08/24	3.24	2.00
21/08/24	3.24	2.00
22/08/24	3.24	2.00
23/08/24	3.24	2.00
24/08/24	3.24	2.00
25/08/24	3.24	2.00
26/08/24	3.24	2.00
27/08/24	3.24	2.00
28/08/24	3.24	2.00
29/08/24	3.24	2.00
30/08/24	3.24	2.00
31/08/24	3.24	2.00
1/09/24	0	0.00
2/09/24	1.45	0.90
3/09/24	2.52	1.56
4/09/24	3.24	2.00

Date	Discharge volume	Irrigation
5/09/24	3.24	2.00
6/09/24	3.24	2.00
7/09/24	3.24	2.00
8/09/24	3.24	2.00
9/09/24	3.24	2.00
10/09/24	3.24	2.00
11/09/24	3.24	2.00
12/09/24	3.24	2.00
13/09/24	3.24	2.00
14/09/24	3.24	2.00
15/09/24	3.24	2.00
16/09/24	11.46	7.09
17/09/24	0	0.00
18/09/24	0	0.00
19/09/24	0	0.00
20/09/24	3.24	2.00
21/09/24	3.24	2.00
22/09/24	3.24	2.00
23/09/24	3.24	2.00
24/09/24	3.24	2.00
25/09/24	3.24	2.00
26/09/24	3.24	2.00
27/09/24	3.24	2.00
28/09/24	3.24	2.00
29/09/24	3.24	2.00
30/09/24	3.24	2.00
1/10/24	1.81	1.12
2/10/24	6.48	4.01
3/10/24	6.48	4.01
4/10/24	6.48	4.01
5/10/24	6.48	4.01
6/10/24	6.48	4.01
7/10/24	6.48	4.01

Date	Discharge volume	Irrigation
8/10/24	6.48	4.01
9/10/24	6.48	4.01
10/10/24	6.48	4.01
11/10/24	6.48	4.01
12/10/24	6.48	4.01
13/10/24	6.48	4.01
14/10/24	6.48	4.01
15/10/24	6.48	4.01
16/10/24	2.88	1.78
17/10/24	6.48	4.01
18/10/24	6.48	4.01
19/10/24	6.48	4.01
20/10/24	6.48	4.01
21/10/24	6.48	4.01
22/10/24	6.48	4.01
23/10/24	6.48	4.01
24/10/24	6.48	4.01
25/10/24	6.48	4.01
26/10/24	6.48	4.01
27/10/24	6.48	4.01
28/10/24	6.48	4.01
29/10/24	6.48	4.01
30/10/24	6.48	4.01
31/10/24	6.48	4.01
1/11/24	6.48	4.01
2/11/24	6.48	4.01
3/11/24	6.48	4.01
4/11/24	6.48	4.01
5/11/24	3.52	2.18
6/11/24	6.48	4.01
7/11/24	6.48	4.01
8/11/24	6.48	4.01
9/11/24	0	0.00
10/11/24	0	0.00

Date	Discharge volume	Irrigation
11/11/24	5.4	3.34
12/11/24	6.48	4.01
13/11/24	6.48	4.01
14/11/24	6.48	4.01
15/11/24	6.48	4.01
16/11/24	6.48	4.01
17/11/24	6.48	4.01
18/11/24	6.48	4.01
19/11/24	6.48	4.01
20/11/24	6.48	4.01
21/11/24	6.48	4.01
22/11/24	6.48	4.01
23/11/24	6.48	4.01
24/11/24	6.48	4.01
25/11/24	6.48	4.01
26/11/24	1.44	0.89
27/11/24	6.48	4.01
28/11/24	6.48	4.01
29/11/24	6.48	4.01
30/11/24	6.48	4.01
1/12/24	6.12	3.78
2/12/24	6.48	4.01
3/12/24	3.24	2.00
4/12/24	6.48	4.01
5/12/24	6.48	4.01
6/12/24	6.48	4.01
7/12/24	6.48	4.01
8/12/24	0	0.00
9/12/24	0	0.00
10/12/24	3.64	2.25
11/12/24	6.48	4.01
12/12/24	6.48	4.01
13/12/24	6.48	4.01
14/12/24	6.48	4.01

Date	Discharge volume	Irrigation
15/12/24	6.48	4.01
16/12/24	6.48	4.01
17/12/24	6.48	4.01
18/12/24	6.48	4.01
19/12/24	6.48	4.01
20/12/24	6.48	4.01
21/12/24	6.48	4.01
22/12/24	6.48	4.01
23/12/24	6.48	4.01
24/12/24	6.48	4.01
25/12/24	6.48	4.01
26/12/24	6.48	4.01
27/12/24	6.48	4.01
28/12/24	6.48	4.01
29/12/24	6.48	4.01
30/12/24	6.48	4.01
31/12/24	6.48	4.01
1/01/25	6.48	4.01
2/01/25	6.48	4.01
3/01/25	5.4	3.34
4/01/25	6.48	4.01
5/01/25	6.48	4.01
6/01/25	6.48	4.01
7/01/25	6.48	4.01
8/01/25	5.04	3.12
9/01/25	6.48	4.01
10/01/25	6.48	4.01
11/01/25	6.48	4.01
12/01/25	6.48	4.01
13/01/25	6.48	4.01
14/01/25	6.48	4.01
15/01/25	6.48	4.01
16/01/25	6.48	4.01
17/01/25	6.48	4.01

Date	Discharge volume	Irrigation
18/01/25	6.48	4.01
19/01/25	6.48	4.01
20/01/25	6.48	4.01
21/01/25	6.48	4.01
22/01/25	6.48	4.01
23/01/25	6.48	4.01
24/01/25	6.48	4.01
25/01/25	6.48	4.01
26/01/25	6.48	4.01
27/01/25	6.48	4.01
28/01/25	6.48	4.01
29/01/25	6.48	4.01
30/01/25	6.48	4.01
31/01/25	6.48	4.01
1/02/25	6.48	4.01
2/02/25	6.48	4.01
3/02/25	6.48	4.01
4/02/25	6.48	4.01
5/02/25	6.48	4.01
6/02/25	6.48	4.01
7/02/25	6.48	4.01
8/02/25	6.48	4.01
9/02/25	6.48	4.01
10/02/25	6.48	4.01
11/02/25	6.48	4.01
12/02/25	6.48	4.01
13/02/25	6.48	4.01
14/02/25	6.48	4.01
15/02/25	6.48	4.01
16/02/25	6.48	4.01
17/02/25	6.48	4.01
18/02/25	6.48	4.01
19/02/25	6.48	4.01
20/02/25	6.48	4.01

Date	Discharge volume	Irrigation
21/02/25	6.48	4.01
22/02/25	6.48	4.01
23/02/25	6.48	4.01
24/02/25	6.48	4.01
25/02/25	6.48	4.01
26/02/25	6.48	4.01
27/02/25	6.48	4.01
28/02/25	6.48	4.01
1/03/25	6.48	4.01
2/03/25	6.48	4.01
3/03/25	6.48	4.01
4/03/25	6.48	4.01
5/03/25	6.48	4.01
6/03/25	6.48	4.01
7/03/25	6.48	4.01
8/03/25	6.48	4.01
9/03/25	6.48	4.01
10/03/25	6.48	4.01
11/03/25	6.48	4.01
12/03/25	6.48	4.01
13/03/25	6.48	4.01
14/03/25	6.48	4.01
15/03/25	6.48	4.01
16/03/25	6.48	4.01
17/03/25	6.48	4.01
18/03/25	6.48	4.01
19/03/25	5.76	3.56
20/03/25	6.12	3.78
21/03/25	6.48	4.01
22/03/25	6.48	4.01
23/03/25	6.48	4.01
24/03/25	6.48	4.01
25/03/25	6.48	4.01
26/03/25	6.48	4.01

Date	Discharge volume	Irrigation
27/03/25	6.48	4.01
28/03/25	6.48	4.01
29/03/25	6.48	4.01
30/03/25	6.48	4.01
31/03/25	6.48	4.01
1/04/25	6.48	4.01
2/04/25	6.48	4.01
3/04/25	6.48	4.01
4/04/25	6.48	4.01
5/04/25	6.48	4.01
6/04/25	6.48	4.01
7/04/25	6.48	4.01
8/04/25	6.48	4.01
9/04/25	6.48	4.01
10/04/25	6.48	4.01
11/04/25	6.48	4.01
12/04/25	6.48	4.01
13/04/25	6.48	4.01
14/04/25	6.48	4.01
15/04/25	6.48	4.01
16/04/25	6.48	4.01
17/04/25	1.08	0.67
18/04/25	6.48	4.01
19/04/25	6.48	4.01
20/04/25	6.48	4.01
21/04/25	6.48	4.01
22/04/25	6.48	4.01
23/04/25	6.48	4.01
24/04/25	6.12	3.78
25/04/25	6.48	4.01
26/04/25	6.48	4.01
27/04/25	6.48	4.01
28/04/25	6.48	4.01
29/04/25	6.48	4.01

Date	Discharge volume	Irrigation
30/04/25	6.12	3.78
1/05/25	3.24	2.00
2/05/25	3.24	2.00
3/05/25	3.24	2.00
4/05/25	3.24	2.00
5/05/25	3.24	2.00
6/05/25	3.24	2.00
7/05/25	3.24	2.00
8/05/25	3.24	2.00
9/05/25	3.24	2.00
10/05/25	3.24	2.00
11/05/25	3.24	2.00
12/05/25	3.24	2.00
13/05/25	3.24	2.00
14/05/25	3.24	2.00
15/05/25	3.24	2.00
16/05/25	3.24	2.00
17/05/25	3.24	2.00
18/05/25	3.24	2.00
19/05/25	3.24	2.00
20/05/25	3.24	2.00
21/05/25	3.24	2.00
22/05/25	3.24	2.00
23/05/25	3.24	2.00
24/05/25	3.24	2.00
25/05/25	3.24	2.00
26/05/25	3.24	2.00
27/05/25	3.24	2.00
28/05/25	3.24	2.00
29/05/25	3.24	2.00
30/05/25	3.24	2.00
31/05/25	3.24	2.00

Date	Discharge volume	Irrigation
1/06/25	3.24	2.00
2/06/25	3.24	2.00
3/06/25	3.09	1.91
4/06/25	3.24	2.00
5/06/25	3.24	2.00
6/06/25	3.24	2.00
7/06/25	3.24	2.00
8/06/25	3.24	2.00
9/06/25	3.24	2.00
10/06/25	3.24	2.00
11/06/25	3.24	2.00
12/06/25	3.24	2.00
13/06/25	3.24	2.00
14/06/25	3.24	2.00
15/06/25	3.24	2.00
16/06/25	3.24	2.00
17/06/25	3.24	2.00
18/06/25	3.24	2.00
19/06/25	3.24	2.00
20/06/25	3.24	2.00
21/06/25	3.24	2.00
22/06/25	3.24	2.00
23/06/25	3.24	2.00
24/06/25	3.24	2.00
25/06/25	3.24	2.00
26/06/25	3.24	2.00
27/06/25	3.24	2.00
28/06/25	3.24	2.00
29/06/25	9.62	5.95
30/06/25	0.72	0.45

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.	2	Not compliant – see section 3.3.1
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.	2	Not compliant – see section 0
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	Compliant
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.	1	Compliant

Condition Number	Consent Conditions Denehurst WWTP Discharge to Land (#DIS6004847)	Condition Rating	Comment
15	<p>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:</p> <ul style="list-style-type: none"> 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	<p>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:</p> <ul style="list-style-type: none"> 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	<p>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:</p> <ul style="list-style-type: none"> • 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 <p>The Plan shall include but not be limited to: See consent document for details.</p>	1	
18	<p>The wastewater treatment and disposal system shall be managed in accordance with the updated Operation and Maintenance Plan.</p>	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	<p>If evidence of breakout in the disposal field is identified, the consent holder shall:</p> <ul style="list-style-type: none"> 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	<p>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:</p> <ul style="list-style-type: none"> 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	<p>Water quality samples shall be analysed for the following parameters.</p> <p>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.</p>	1	
28	<p>In the event of any exceedance of the discharge standards in Conditions 7 to 11 the consent holder shall:</p> <ul style="list-style-type: none"> 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. 	2	Auckland Council was not advised of the high TSS result observed in September 2024.

Condition Number	Consent Conditions Denehurst WWTP Discharge to Land (#DIS6004847)	Condition Rating	Comment
29	<p>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:</p> <ul style="list-style-type: none"> 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	<p>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:</p> <ul style="list-style-type: none"> 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. <p>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.</p>	1	Due in 2026-2027
31	<p>All recommendations specified in the audit report shall be implemented to the satisfaction of the Team Leader Western Monitoring.</p>	1	

Condition Number	Consent Conditions Denehurst WWTP Discharge to Land (#DIS6004847)	Condition Rating	Comment
32	<p>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:</p> <ul style="list-style-type: none"> 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

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