Raglan Treatment plant

Repeat out-of-cycle discharge

2 November 2023

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How the plant works

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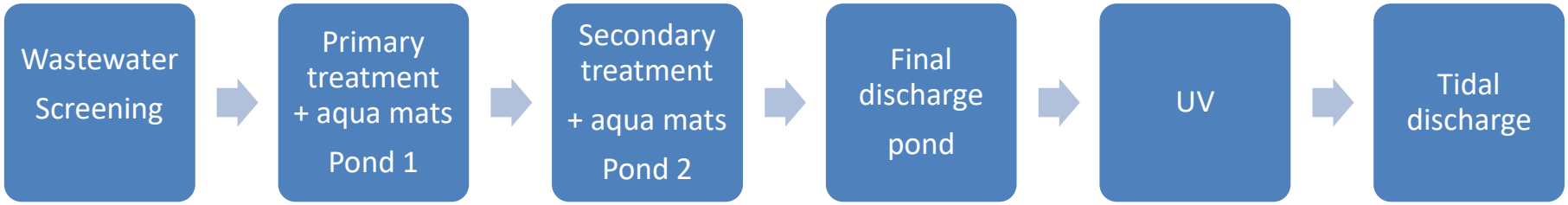
How the plant works

Aeration pond-based system.



While the out-of-cycle discharge is regrettable, it's crucial to note that no untreated wastewater was discharged.

Date Period	Site Compliance
1 July 2021 to 30 June 2022	Moderate Non-Compliance
1 July 2020 to 30 June 2021	Low Risk Non-Compliance
1 July 2019 to 30 June 2020	Significant non-compliance
1 July 2018 to 30 June 2019	High level of compliance
1 July 2017 to 30 June 2018	High level of compliance

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How the plant works – tidal discharge

- The plant discharge programme is based on data points, including
  - the day,
  - month,
  - year,
  - time and
  - tide condition
    - Outgoing - discharge (1) or incoming - no discharge (0).
- An example is that on 10 October 2023 7:28 am Outgoing tide - discharge would commence.
- Three years of this information is loaded into the plant's PLC (programme logic controller) that manages the discharges.
- The correct sequence for discharges should be 1, 0, 1, 0, 1, 0, 1, 0, 1 representing the change of each tide.
- The recent event happened due to a sequencing error where it deviated

What happened

The sequence of events leading up to the out-of-cycle discharge is as follows:

1. The tidal discharge program was last updated in January 2022 extending the tidal discharge times to 31 December 2024 – three years of data is required. An unknown error in the programming occurred during this update.

2. An error occurred in the programming on Sunday 24 September (21 months into the 36 months of data) when a discharge was expected but did not happen. This issue was investigated and was believed to be related to daylight saving and was corrected.

3. On October 10, we experienced the initial occurrence of discharging on the incoming tide, resulting in three out-of-cycle discharges of treated effluent which was promptly brought to our attention by the community. This was due to a sequencing error identified during the investigation e.g. 1, 0, 1, 0, 1, 1, 0, 1, 0, 1

What happened

The sequence of events leading up to the out-of-cycle discharge is as follows:

4. The second instance of discharging on the incoming tide took place on 26 October, resulting in two out-of-cycle discharges of treated effluent. This was due to a missed exception during the corrective work undertaken by our contractor.

5. Signs and communication occurs to ensure the community is aware of the consent breach although the environmental impact is minimal.

6. Sampling was taken on 12, 13 and 15 October for the first instance and 27, 28 and 29 October to determine any environmental impact. These show very low results at the treatment plant but an elevated result behind the museum. Which requires further investigation to determine the source of this.

What happened - Sampling

Mode	Trigger level		Management response
	Beach: Enterococci / 100mL	**River/Lake: *E. coli*/100 mL**	
Surveillance	Equal to or less than 140 Enterococci / 100 mL	Equal to or less than 260 *E. coli* / 100 mL	Routine monitoring.
Alert	More than 140 Enterococci / 100 mL	More than 260 *E. coli* / 100 mL	Increase monitoring and investigate source.
Action	More than 280 Enterococci / 100 mL	More than 540 *E. coli* / 100 mL	Public warnings if required, increased monitoring and investigation of contaminant source.

- The quality of water for swimming is determined by measuring 'faecal indicator bacteria' (enterococci in coastal waters and E. coli in rivers and lakes) which indicate the levels of disease causing organisms in the water.
- https://www.lawa.org.nz/learn/factsheets/coastal-and-freshwater-recreation-monitoring/
- The target for the discharge (Post UV) is to be less than <35 CFU/100mL and is normally >1.6 CFU/100mL, highest result at the discharge has been 31 CFU/100mL since Jan 2021.

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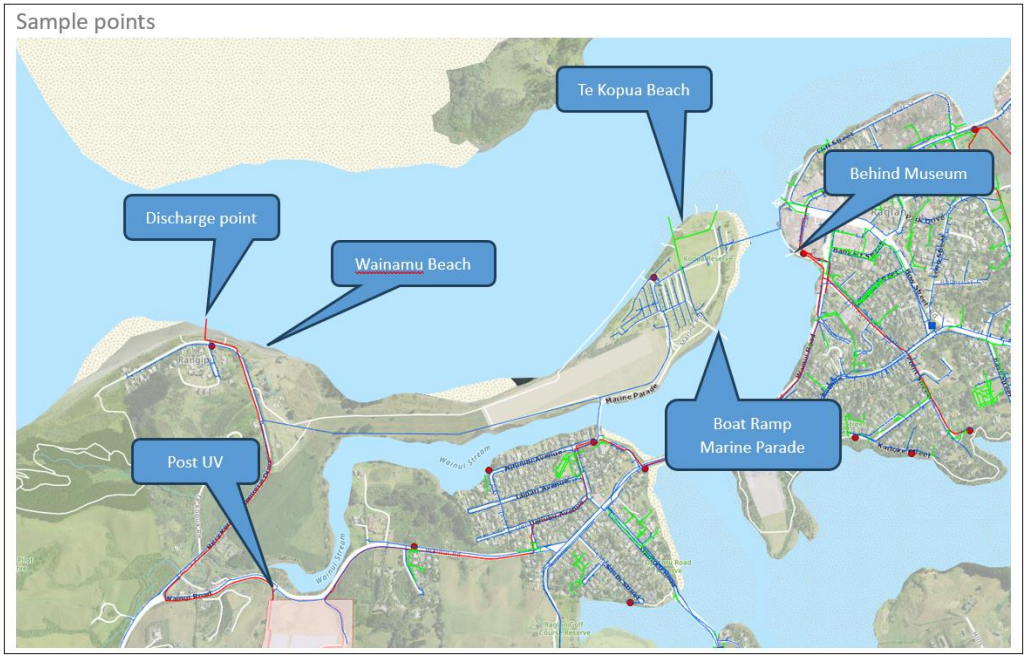
What happened - Sampling



Location/ Date/Time	12/10 12:17-12:41	13/10 9:30-11:00	15/10 12:16-12:47	27/10 9:15 – 9:50	28/10 9:50 – 10:45	29/10 11:17 – 12:06
Post UV				1.6	1.6	<1.6
Wainamu Beach	<1.6	<1.6	33	23	58	13
Te Kopua Beach	3.3	3.3	16	18	8.2	15
Boat Ramp off Marine Parade	8.2	1.6	660	120	6.6	40
Behind Raglan Museum		<1.6	240	74	<1.6	800

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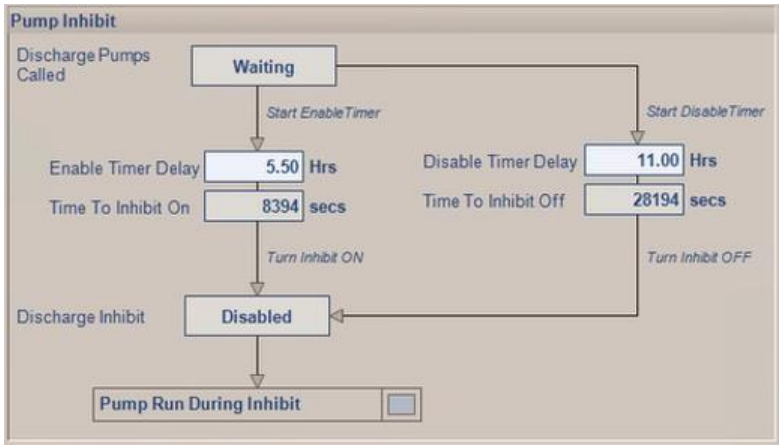
How did we fix the issue

- An investigation was carried out into the programming immediately after the first occasion of discharge on the incoming tide.
- This identified the error in the sequencing of the tidal discharges.
- The issue was corrected and the ongoing correction to 31 December 2024 is underway
- The validation process for the approval of the programme has been reviewed and updated.
- There are a number of validation points prior to signing off the change.
  - Point of data collection, during data loading and after data has been loaded.

What's being done to prevent it in the future

- Three new alarms have been created
- Improved validation for data entry and post loading
- Creation of Functional descriptions for the programming.
- Validation process with the Councillor and local chair for next three, quarterly data checks.



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Plant upgrade and discharge

- The current plant has limitations until it is replaced.
- Funding for the new plant has been approved
- Replacement of the Wastewater treatment plant is in the final stage of tender prior to award, expected within the next month
- The discharge options are under review and the community preferences are well understood.
- Next meeting community meeting on the discharge consent is on 14 December

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We deeply regret any inconvenience this situation may have caused and remain committed to ensuring this issue does not occur again.

We appreciate your understanding as we worked to resolve this matter.

Thank you

Any questions?

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