2 September 2024

OIA-726

7(2)(a) [redacted]

Tēnā koe 7(2)(a) [redacted]

Response to your information request - consent WGN200229 (36816) condition 22A

Thank you for your request of 2 August 2024 asking questions related to consent WGN200229 (36816) condition 22A and discharges into the coastal marine area from Rukutane Point and Vella Street Pump Stations.

Your request is responded to in accordance with the Local Government Official Information and Meetings Act (LGOIMA – the Act) 1987. Please refer to the appendix on the next page that responds to your requests.

Information from attached documents responding to your second question is withheld as allowed by section 7(2)(a) of the Act for privacy of natural persons.

In accordance with section 7(1) of the Act, we do not consider the withholding of information under section 7(2)(a) of the Act is outweighed by other considerations which render it desirable, in the public interest, to make that information available.

Please note that it is our policy to proactively release our responses to official information requests where possible. Our response to your request will be published shortly at https://www.wellingtonwater.co.nz/about-us/official-requests/official-information-act-responses/ with your personal information removed.

You have the right to seek an investigation and review by the Ombudsman of this decision. Information about how to make a complaint is available at www.ombudsman.parliament.nz or freephone 0800 802 602.

If you wish to discuss this decision with us, please feel free to email us at official.information@wellingtonwater.co.nz

Nāku noa, nā

7(2)(a) [redacted]

Group Manager
Network Management Group

APPENDIX

1. *In the time period of 1 March 2024 to 2 August 2024, please advise the number of times Wellington Water Limited contacted the Manager Environmental Regulation, Wellington Regional Council as required for consent WGN200229 (36816) condition 22A.*

Please refer to the table below:

Incident date	Event description	Contact from WW to GWRC
4/3/24	Solids carryover	Investigation report –website
16/3/24	UVT Non-compliance	Investigation report –website
6/4/24	Solids carryover	Please explain response 9/7
7/4/24	UVT Non-compliance	Please explain response 9/7
12/4/24	UVT Non-compliance	Please explain response 9/7
1/5/24	UVT Non-compliance	Please explain response 16/7
5/6/24	Unconsented discharge due to UV Mechanical fault	Please explain response 19/7
16/6/24	Unconsented discharge due to Power outage	Email response 23/7
17/6/24	Partially treated Unconsented discharge due to Power outage	Email response 23/7
2-5/7/24	Non compliant discharges for faecal coliforms	Investigation report –website

2. *In the time period of 1 March 2024 to 2 August 2024 that Wellington Water Limited contacted the Manager Environment Regulation, Wellington Regional Council as required for consent WGN200229 (36816) condition 22A, please provide:*

    a. *the date.*
    b. *the reasons for the issue.*
    c. *measures taken to prevent its reoccurrence.*
    d. *the results of receiving water quality monitoring undertaken in accordance with condition 16.*
    e. *details of how compliance with condition 13 was assessed.*
    f. *the results of that assessment.*
    g. *any other relevant matters.*

As detailed in the above table, please refer to the Investigation reports available on the Wellington Water website under the Incident Reports section at: https://www.wellingtonwater.co.nz/resources/topic/wastewater/wastewater-treatment-plants/porirua-wastewater-treatment-plant/

The please explain response and email responses are attached.

4. *In the time period of 1 March 2024 to 2 August 2024, please advise the number of times the Rukutane Point Pump station discharged into the CMA.*

   Six

5. *In the time period of 1 March 2024 to 2 August 2024, please advise the number of times the Vella Street Pump station discharged into the CMA.*

   Two

Wellington Water

9 July 2024
File No: WGN200229

Greater Wellington Regional Council
100 Cuba Street
Te Aro,
Wellington

Attn: [redacted] Senior Compliance, Monitoring and Enforcement Advisor

Dear [redacted]

Re: Request for an explanation for the sludge carry over events and UVT dropping below 45% resulting in discharges from Porirua Wastewater Treatment Plant at the outfall discharge point within the Coastal Marine Area around Rukutane Point in April 2024.

Thank you for the opportunity to explain the sludge carry over events from the Porirua WWTP into the coastal marine area around Rukutane Point on:

- 01 April 2024
- 03 April 2024
- 04 April 2024
- 05 April 2024
- 06 April 2024
- 07 April 2024
- 09 April 2024
- 12 April 2024
- 13 April 2024
- 28 – 29 April 2024

The following is our response to the questions in the Please Explain letter submitted to Wellington Water on the 10 June 2024.

1. Please provide comment, including supporting information and files as appropriate, if there is any missing or misinterpreted information in Table 1.

The information in Table 1 for the April events is generally considered accurate, with one exception. The discharges listed separately on 12 & 13 April were in fact just one discharge event, beginning 12:47pm on 12 April and stopping 21:45pm on 13 April, therefore it was treated as a single event. This was confirmed by Avina Furtado (Wastewater Contracts Team Administrator) to Amanda O'Brien (GWRC) via email on 15 April, with the final discharge report being submitted on 17 April.

2. Please provide comment on how Wellington Water Limited determines if a sludge carry over event has occurred.

Wellington Water determines whether a sludge carryover has occurred by assessing the following parameters: visual quality of the water within the vicinity of the outfall, online UV Transmittance values, sludge blanket Levels in the clarifiers and the effluent total suspended solids (TSS) results. For a sludge carryover to be confirmed, the following monitored parameters are all expected to be present:

- Evident discoloration in the coastal marine area
- Sustained UV Transmittance values of 0%
- Sludge blanket levels in the clarifiers above the maximum level, which is 3 metres for clarifiers 1 and 2, and 4 metres for clarifier 3 for a sustained period of time
- Daily effluent TSS results exceeding the percentile limit for the effluent TSS which is 75 g/m^3

3. Please provide calculations of the volume of activated sludge discharged for each event (Example: volume of wastewater was 5000 m3 of which activated sludge comprised approximately 1000 m3).

It is difficult to accurately calculate the quantity of solids (activated sludge) discharged for each incident as this would require a TSS result for the specific duration of the discharge and this is not available. We can estimate the total quantity of solids present in the effluent using the daily composite Effluent TSS results and the daily discharge volume. This calculation uses the composite TSS results for the day (the average of 24hr samples) multiplied by the total daily flow to provide an estimated Total Solids Discharged (TSS x Total Daily Flow = Estimated Solids discharged). The consent has limits in condition 12 for 90-day average TSS of 30 g/m^3 and no more than 10% of 90 days at 75 g/m^3, so the likely excess has been calculated from that upper figure.

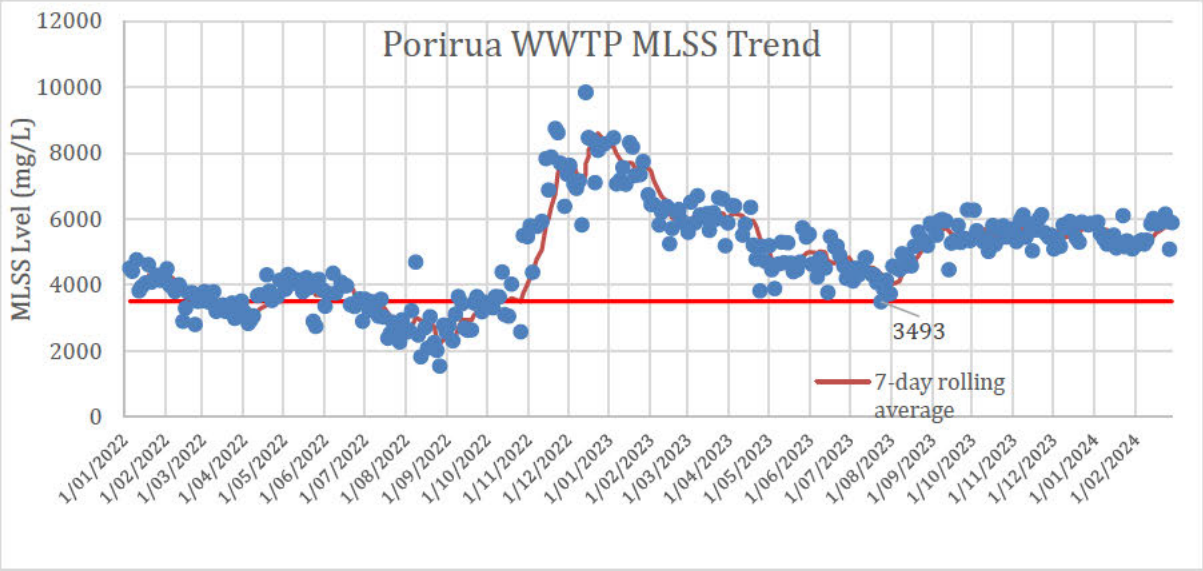
Estimated Solids Discharged:

Date	Daily Volume (m^3)	Total Suspended Solids (Effluent) (g/m^3)	Total Solids discharged to outfall (kg)	Permitted at 75 g/m3 90% limit (kg)	Excess above 90 percentile limit (kg)
4/3/24	32,957	548	18,060	2,472	15,588
15/3/24	20,468	6	122	1,535	-
16/3/24	19,849	6	119	1,489	-
1/4/24	19,369	6	116	1,452	-
3/4/24	19,848	73	1,448	1,488	-
4/4/24	22,902	74	1,694	1,717	-
5/4/24	25,336	27	684	1,900	-
6/4/24	21,205	69	1,463	1,590	-
7/4/24	22,392	7	156	1,679	-
9/4/24	20,064	6	120	1,504	-
12/4/24	54,441	6	326	4,083	-
13/4/24	49,855	6	299	3,739	-
28/4/24 – 29/4/24	20,153 (avg)	6	120	1,511	-

4. How long has MLSS been operating above 3500 mg/L?

A graphical representation of the MLSS record on site in shown in Figure 1 below.

Figure 1: MLSS Trend in Porirua WWTP



The plant underwent a hydraulic upgrade in 2022 during which the MLSS rose above the optimal level at the beginning of October 2022. The plant was able to return to normal operations after the hydraulic upgrade was completed in early 2023 and the MLSS slowly returned to the optimal level of 3500mg/L in July 2023. Due to mechanical failures in the sludge dewatering system and process changes, the quantity of sludge to landfill decreased around that time. The MLSS increased to a value of 4,570mg/L in early August 2023. However, the plant does not have sufficient redundancy and capacity to manage asset failures within the sludge management system and to reduce buildup, whilst working within the existing landfill operational parameters, which makes it challenging to reduce the MLSS once it has built up in the system.

It has proven difficult to resolve the operational and logistical barriers to improve wastage rates in a manner that also meets the landfill operational requirements, but actions to resolve and reduce these barriers are still underway. The sludge handling upgrade project for Porirua WWTP will be the long-term solution to resolve these issues.

5. When were WWL first notified that MLSS were above the optimal levels?

Wellington Water conducts a weekly operational meeting with Veolia where operational matters and potential concerns are raised and discussed across the four metropolitan wastewater plants. In October 2023, Wellington Water was made aware that the MLSS had reached 5000 mg/L.

In November 2023, WWL have requested the Spicer Landfill to allow an increase in sludge disposal from Porirua WWTP to the Landfill by accommodating extra sludge bin disposal during weekends. The Spicer Landfill could only accommodate a single additional bin on Sunday due to insufficient general waste materials to mix with the dewatered sludge during weekends. As soon as the approval of the additional sludge disposal had been made, Veolia has been instructed to liaise directly to the landfill management to make necessary arrangements for the additional disposal.

In February 2024, Wellington Water was informed that there was another mechanical fault in the sludge dewatering system, which caused a reduction in sludge removal rate from the WWTP. The plant had approximately 50% normal sludge dewatering capacity which caused the MLSS to climb up again to around the 6,000 mg/L level by the end of February. While the plant had spares available for some mechanical faults, these spares did not cover all the possible failure modes of the system. A review and procurement of spares for the sludge handling system is one of the action items that Wellington Water will undertake to increase the sludge handling reliability.

6. Please provide all photos from outfall location (including during sampling) and surrounding area (e.g. to showcase 200m range and beyond) between 04 March 2024 and 30 April 2024.

Available photos supplied by Veolia from the discharges in April are attached in Appendix I.

7. Why was no notification received to GWRC for events?

Wellington Water's contact centre relies on Veolia's notification before they can trigger the notification process to the interested parties of the WWTP, which includes GWRC and community members that have registered interest in receiving notifications. These notifications were not initiated by Veolia due to communication gaps in in some of the April events. Below is a table detailing if/when Wellington Water was notified for each event:

Date	Status
1 April	No notification received
3 April	No notification received
4 April	Notification received within 24 hours
5 April	Notified 3 days after start of event
6 April	Notified 2 days after start of event
7 April	Notification received within 24 hours
9 April	No notification received
12/13 April	Notification received within 24 hours
28-29 April	Notification received within 24 hours

Both Veolia and WWL continue to review their communications protocol and how best to improve it moving forward to avoid the reoccurrence of such incidents.

8. Why was no sampling initiated for some events?

The discharges in April saw events where the UVT dropped below 45% but the staff on site confirmed that a partially treated discharge or a sludge carryover event had not occurred. Under the consent condition, sampling is only a requirement when the plant operator can positively confirm that an event of this nature has occurred along with the drop in UVT. The table below demonstrates the dates that Veolia confirmed that a partially treated discharge event had occurred which may have caused discoloration in the coastal marine area. The shoreline sampling was undertaken on the dates of 7th , 8th , 9th , 13th , 14th , 15th , and 16th of April.

Date	Identity of discharge confirmed	Sampling taken?	Signs Opened?
1 April	Unconfirmed	No	No

3 April	Unconfirmed	No	No
4 April	Unconfirmed	No	No
5 April	Unconfirmed	No	No
6 April	Confirmed	Yes	No
7 April	Confirmed	Yes	Yes
9 April	Unconfirmed	Yes	No
12/13 April	Confirmed	Yes	Yes
28-29 April	Confirmed as a Low UVT incident only since Duron UV unit is operating at daytime only	Not required	Not required

9. Please provide comment for each event on whether signage was put out?

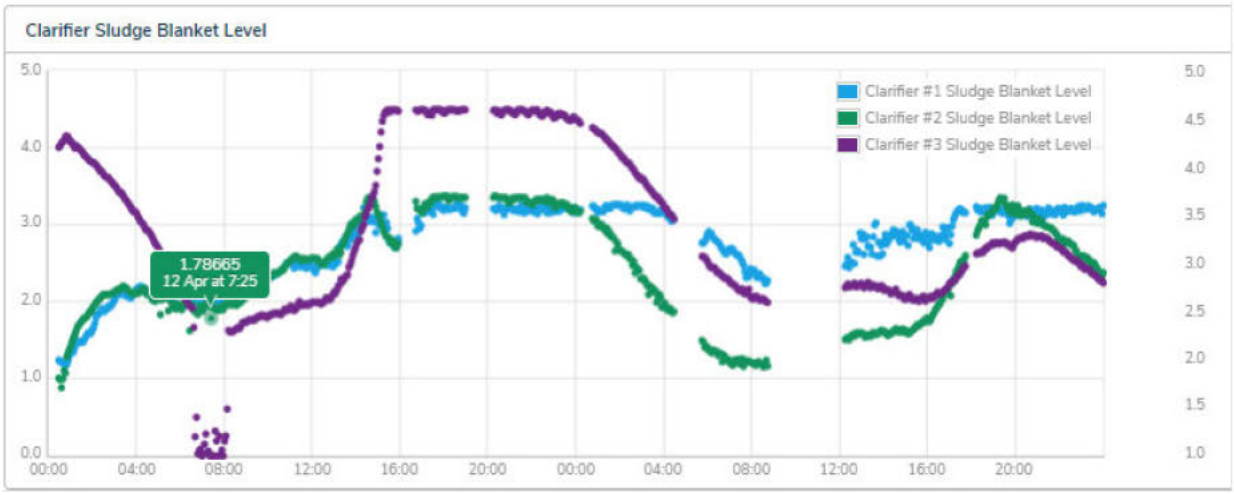
There was a delay in opening the permanent discharge signage for some events in April as Wellington Water are reliant on Veolia to follow the proper communication protocol and confirm that a discharge event has occurred. The protocol ensures that notifications are directed to the correct personnel so that the signs are opened in a timely manner. Due to the miscommunication noted above, the appropriate personnel were not notified in a timely manner. This process has been reviewed and Veolia will shortly be responsible for opening signage in future. The table in question 8 shows which events have had sign opened.

10. What improvements to process have been made since 4 March 2024 (or will be made and by what date) in relation to points 7, 8 and 9 above?

Veolia has held internal discussions with members of staff and reminded them of the procedures and their responsibilities. A list of corrective actions following both March and April events has been drawn up. These are attached in Appendix III.

11. Please provide sludge blanket levels for the 12 and 13 April 2024 events.

The graph below shows the sludge blankets for the 3 clarifiers on 12 & 13 April.



12. Please provide sampling results for the event on 15-16 March 2024.

Sampling results for the 15-16 March 2024 were attached in Appendix II in the previous response to the March events submitted via email on 21 June 2024.

13. Please provide an explanation of how often and how many samples are taken to make up a 24-hour flow-proportional sample.

A flow-proportional sample is when an autosampler is linked to a flow meter. The volume of the sample taken on each occasion is dependent on the flow as it varies throughout the course of a day. This type of composite sample will occur frequently throughout the day at intervals that are programmed into the sampler, based on maximum expected day and not over-filling the sampling container. The autosampler is currently set up to sample based on time-based interval criteria and will take a 100ml effluent sample each hour over a 24-hour period. Veolia are investigating returning the sampling criteria to flow-based, which generally gives a more representative sample.

14. Please explain how condition 5A has been assessed in response to these events?

Condition 5A is in accordance with conditions 12, 12A & 13, they are assessed as follows:

Condition	Detail	Assessment
12	Suspended Solids & BOD	These are sampled and monitored daily. There was no daily sample which was higher than the percentile limit for both effluent BOD and suspended solids.
12A	Metals	Metals are sampled monthly which were not undertaken specifically for this discharge events
13	No visible effects, adverse effect on aquatic life or	Routine daily morning check on the outfall. During these events there was visual

	objectionable odour at outfall or beyond boundary	checking for clarification. There were confirmed visible discoloration on the coastal marine area on the 6th , 7th and 12th April but were not confirmed whether these were beyond the 200-m radius.

15. What mitigations measures stated in the 10 April 2024 cover letter have been implemented, and which measures will be adopted by what date?

The below table details the progress made to the mitigating measures:

Type	Mitigating Measures	Progress
Short Term	Fast track the reduction of MLSS to optimum levels by extending the operation of two centrifuges temporarily to increase the daily dewatered sludge production	Ongoing. Veolia operations team are proactively wasting at intervals calculated for best practicable sludge quantity and quality.
Short Term	Review current sludge dewatering operations to assess whether that it is being operated at optimum conditions within the current operational constraints	Ongoing, site specific Standard Operating Procedure completed by Veolia. Centrifuges are running well and dried solids target of 18% being achieved consistently.
Short Term	Consider establishing a Service Level Agreement with the external expert contractor to deliver reliable sludge dewatering equipment performance	Draft service level agreement undergoing internal review by Veolia internal procurement team. Expected completion in July.
Short Term	Procurement of the spares for the whole Sludge Dewatering System (i.e. centrifuge, sludge feed pumps, polymer dosing system)	Veolia completed critical list and have sent requests for quotes from various suppliers. Preparing documents for quotes that have been received and chasing for remaining quotes. Expected completion of documentation in July, delivery dates are still to be confirmed.
Short Term	Investigate alternative sludge production options, working with Landfill, to enable acceptability of greater volumes of solids by removing current operational constraints	Ongoing, Landfill has agreed to accept an additional 1 bin on weekdays which is approximately 4.5 tons for a limited time. Details around production of sludge and

		transport timing being sorted out.
Medium Term	Undertake an investigation to install another centrifuge unit and/or other mechanism to augment the sludge dewatering capacity in the WWTP while solids handling upgrade project is still underway	Specialist condition assessment of centrifuges completed in May. A desktop assessment for the site's solids handling system has been undertaken and will be followed up by a workshop in June to discuss the findings and determine the appropriate medium-term solution for the site's solids handling process.
Medium Term	Undertake specialist investigation and condition assessment to determine the consequence and likelihood of failure of the current solids handling system and review the current mitigating measures	

In addition to the short-term and medium-term mitigations outlined in the table above, WWL and Veolia Contract Managers met in response to these events and discussed the interpretation of the terms of the Coastal Discharge Permit WGN200229(36816) and conditions, along with clarifying notification expectations and requirements. The WWL interpretation of permit conditions and clarification of notification procedures have been provided to Veolia in writing, dated 10 April 2024.

We trust this explanation satisfactorily answers the questions raised in the Please Explain letter of 10 June. Should further detail or clarification be required, please contact the writer directly.

Yours sincerely

[redacted]

Head of Wastewater Contracts

16 July 2024
File No: WGN200229

Greater Wellington Regional Council
100 Cuba Street
Te Aro,
Wellington

[redacted] - Compliance Monitoring and Enforcement Officer

Dear [redacted]

Re: Request for an explanation for the discharge of partially treated wastewater to coastal outfall at Rukutane Point.

Thank you for the opportunity to explain the partially treated discharge from the Porirua WWTP into the coastal marine area on 1st May 2024.

The following is our response to the questions in the Please Explain letter submitted to Wellington Water on the 17th June 2024.

1. **Why was no investigation report received?**

Wellington Water (WWL) requires the plant operator, Veolia, to carry out investigations when required, as they are responsible for managing the operation of the treatment plant as per the Regional WWTP Treatment Services Contract.

On 12th and 19th June 2024, WWL followed up with Veolia with requests via email regarding the investigation report but did not receive a response.

WWL made a further request of Veolia for the investigation report on 12th July, but we are yet to receive the report. We expect an investigation report from Veolia imminently.

2. **What caused the partially treated discharge to occur and why is there uncertainty in the type of discharge that occurred?**

As per previous responses regarding partially treated discharges in the treatment plant for March and April 2024, the treatment plant has been operating above the optimum Mixed Liquor Suspended Solids (MLSS) for several months which is the main cause of these partially treated

discharges. The treatment plant should be able to treat the maximum flow of up to 1,550 L/s provided that optimum MLSS levels (3,000 to 3,500 mg/L) are maintained and the sludge settling characteristics are within design parameters. Higher flows from wet weather along with the higher than optimal MLSS resulted in the partially treated discharge. However, WWL considers the high MLSS to be the main contributing factor.

A notification from WWL customer notifications team was sent out on 2nd May at 8:49am advising there was a UV power outage which may have caused the partially treated discharge. A correction email was then sent out around 9:43am on the same day to clarify that there was no power outage. The confusion arose from the interpretation of the new discharge notification form from Veolia which has a different format that what was used previously.

There was also uncertainty whether a sludge carry-over had occurred. WWL have carried out an assessment based on the following parameters which we expect to be all present if the sludge carry-over has occurred:

Expected Parameters to occur during Sludge Carry-over events	**Actual parameters observed based on the day of the incident and historical records**
Evident discoloration in the coastal marine area	Photo provided to GWRC which was taken by Veolia on 2nd May however it was not confirmed whether the discoloration was beyond the 200-m radius
Sustained UV Transmittance values of 0%	UVT values did not drop below 45%. Please see figure 1 below.
Sludge blanket levels in the clarifiers above the maximum level which is 3 metres for clarifier 1 and 2, and 4 metres for clarifier 3 for a sustained period of time	For approximately three hours for Clarifier 3 and six hours for Clarifier 1. Please see figure 2 below.
Daily effluent TSS results exceeding the percentile limit for the effluent TSS which is 75 g/m^3	The daily result was 6 mg/L. Please see figure 3.

Based on the above analysis, WWL believes that a sludge carryover did not occur. The discoloration to the coastal marine area around Rukutane Point on the 2nd May is a case of high suspended solids content of the effluent discharge for a short period of time, which was mitigated before it resulted in a sludge carry over.

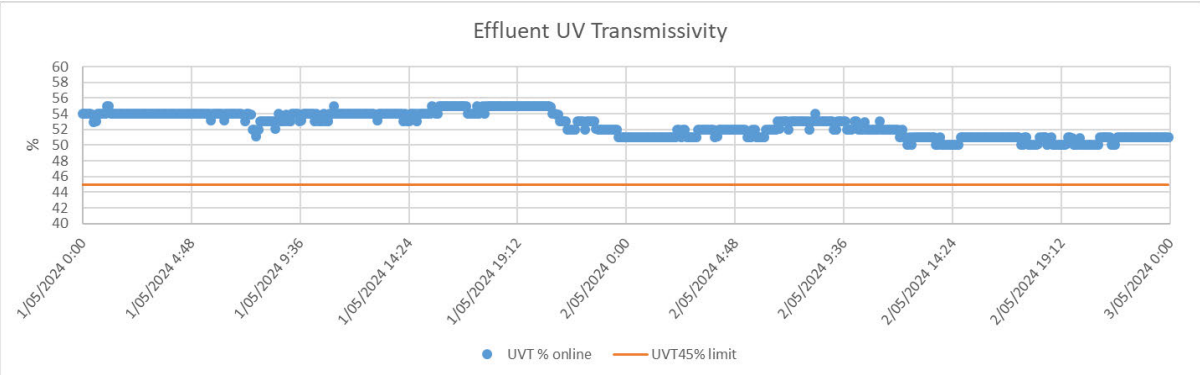


Figure 1: UV Transmissivity

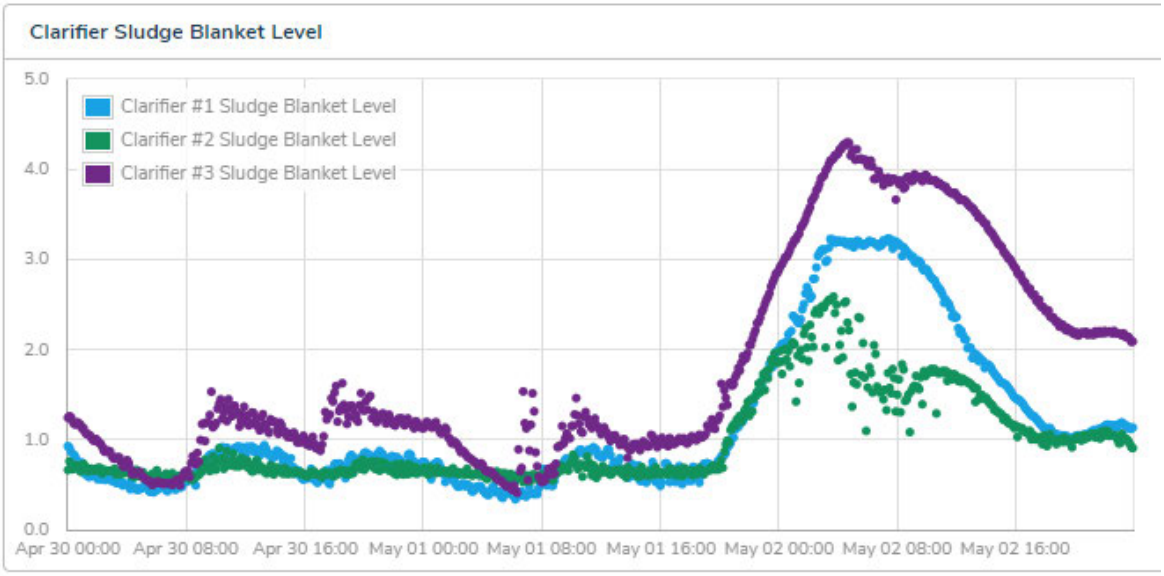


Figure 2: Clarifier Sludge Blanket Levels

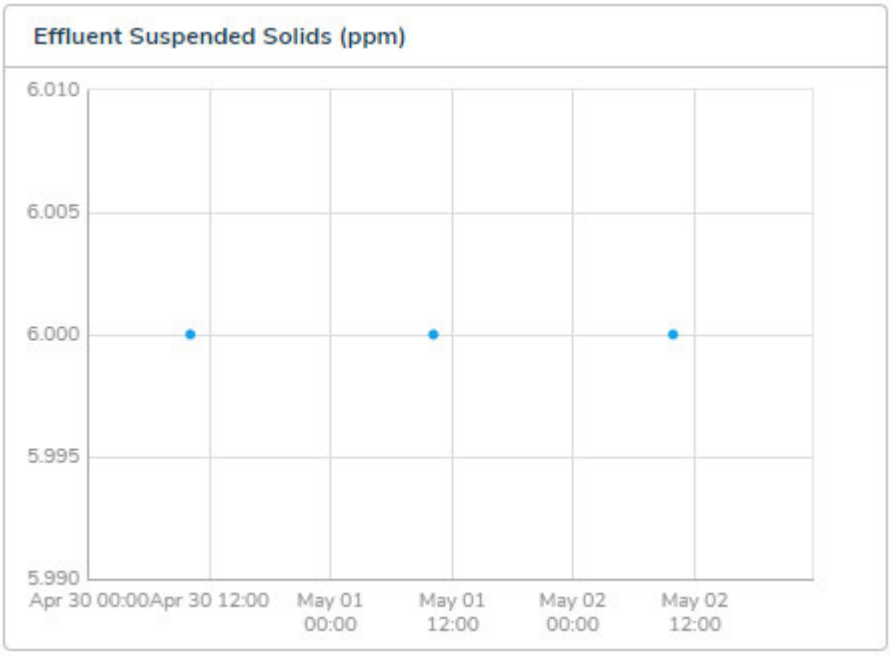


Figure 3: Effluent TSS 30 April – 2 May 2024

3. What treatment processes did occur / were bypassed?

No treatment process was bypassed in this incident. The effluent was treated normally through screening, then biologically treated through aeration and clarification, then passed through the final stage of UV treatment before reaching the outfall at Rukutane Point. The clarification process did not occur at optimum conditions for a period of time during this incident. Therefore, there was high suspended solids in the effluent for a short period resulting in discoloration in the coastal marine

environment. WWL is of the view that this constitutes a partially treated discharge rather than a solids carryover.

4. What was the total volume of the discharge, the start time and end time of the discharge, rate of discharge and the calculated activated sludge volume to the outfall?

It is difficult to accurately calculate the quantity of solids (activated sludge) discharged for each incident as this would require a TSS result for the specific duration of the discharge, and this is not available. We can estimate the total quantity of solids present in the effluent using the daily composite Effluent TSS results and the daily discharge volume. This calculation uses the composite TSS results for the day (the average of 24hr samples) multiplied by the total daily flow to provide an estimated Total Solids Discharged (TSS x Total Daily Flow = Estimated Solids discharged). The consent has limits in condition 12 for 90-day average TSS of 30 g/m^3 and no more than 10% of 90 days at 75 g/m^3, so the likely excess has been calculated from that upper figure.

Date	Daily Volume (m^3)	Total Suspended Solids (Effluent) (g/m^3)	Total Solids discharged to outfall (kg)	Permitted at 75 g/m3 90% limit (kg)	Excess above 90 percentile limit (kg)
1/5/24	50,961	6	306	3,822	-
2/5/24	31,179	6	187	2,338	-

5. What sampling was carried out during and after the discharge within the receiving environment and what did these results show?

Shoreline monitoring was performed as per Condition 16 of Resource consent WGN200229 [36816]. The sampling results can be found in Appendix I.

6. What steps were taken to remedy adverse environmental effects arising from the discharge?

WWL and Veolia undertook shoreline sampling and communications as required by the consent. This included erecting no-swimming signage and notifying stakeholders directly via email under the Porirua Management Plan.

The shoreline results shown in Appendix I suggest that the environmental effect from this discharge event was minor. The shoreline sampling results were all below the LAWA Beach guideline for enterococci surveillance trigger level of 140 cfu/100 mL.

7. What on-site and off-site actions could have been taken to reduce the timeframes of the discharge occurring?

Prior to the rain event the weather forecast was monitored closely. At the same time, the sludge management procedure was followed before and during the investigated period to compensate for the increased biomass accumulation in the system. No omissions were identified in the steps undertaken.

Veolia's duty operator was onsite around 12:40am on 2nd May to monitor the flow and to make process changes such as controlling the flow split between the clarifiers to prevent a solids carry over event.

We trust that this explanation satisfactorily answers the questions raised in the Please Explain letter of 17th June. Should further detail or clarification be required, please contact the writer directly.

Yours sincerely

[redacted]

Head of Wastewater Contracts
Wellington Water Limited

Appendix I : Shoreline sampling results

140m generally eastwards of the outfall

Date	Enterococci	pH	Salinity	Dissolved Oxygen	Temp.	Wind Direction	Wind Strength	Tide	Sea Conditions
dd/mm/yyyy	cfu/100mL	-	g/m3	g/m3	C	--	--	--	--
02/05/2024	40	8.19	37	10.89	15	NW	Light	Low	Flow
03/05/2024	10	8.22	38	10.73	15	N	Light	Mid	Ebb
04/05/2024	10	8.31	38	11.21	15.4	NW	Moderate	Low	Ebb

Date	Total Ammonia Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Reactive Phosphorus	Total Nitrogen	Total Phosphorus
dd/mm/yyyy	g/m3	g/m3	g/m3	g/m3	g/m3	g/m3
02/05/2024	0.01	0.1	0.1	0.009	0.186	0.074
03/05/2024	0.02	0.1	0.1	0.009	0.267	0.05
04/05/2024	0.29	0.1	0.1	0.002	0.107	0.084

200m generally southwestwards of the outfall

Date	Enterococci	pH	Salinity	Dissolved Oxygen	Temp.	Wind Direction	Wind Strength	Tide	Sea Conditions
dd/mm/yyyy	cfu/100mL	-	g/m3	g/m3	C	--	--	--	--
02/05/2024	30	8.26	37	10.58	16.5	NW	Light	Low	Flow
03/05/2024	10	8.16	38	10.88	15.1	N	Light	Mid	Ebb
04/05/2024	10	8.25	38	11.28	15.8	NW	Moderate	Low	Ebb

Date	Total Ammonia Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Reactive Phosphorus	Total Nitrogen	Total Phosphorus
dd/mm/yyyy	g/m3	g/m3	g/m3	g/m3	g/m3	g/m3
02/05/2024	0.03	0.1	0.1	0.045	0.663	0.589
03/05/2024	0.01	0.1	0.1	0.013	0.196	0.095
04/05/2024	0.03	0.1	0.1	0.025	0.185	0.145

Titahi Bay Beach At Toms Road - Surf Club

Date	Enterococci	pH	Salinity	Dissolved Oxygen	Temp.	Wind Direction	Wind Strength	Tide	Sea Conditions
dd/mm/yyyy	cfu/100mL	-	g/m3	g/m3	C	--	--	--	--
02/05/2024	10	8.24	38	10.83	15.3	W	Light	Low	Flow
03/05/2024	10	8.26	38	10.88	15.2	NW	Moderate	Low	Ebb
04/05/2024	10	8.26	38	10.88	15.2	NW	Moderate	Low	Ebb

Control

Date	Enterococci	pH	Salinity	Dissolved Oxygen	Temp.	Wind Direction	Wind Strength	Tide	Sea Conditions
dd/mm/yyyy	cfu/100mL	-	g/m3	g/m3	C	--	--	--	--
02/05/2024	10	8.3	37	13.25	15.7	S	Light	Low	Flow
03/05/2024	10	8.25	38	11.78	15.2	N	Light	Mid	Ebb
04/05/2024	10	8.26	38	12.82	15.6	NW	Moderate	Low	Ebb

Date	Total Ammonia Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Reactive Phosphorus	Total Nitrogen	Total Phosphorus
dd/mm/yyyy	g/m3	g/m3	g/m3	g/m3	g/m3	g/m3
02/05/2024	0.01	0.1	0.1	0.009	0.154	0.045
03/05/2024	0.01	0.1	0.1	0.009	0.261	0.064
04/05/2024	0.01	0.1	0.1	0.002	0.265	0.032

Wellington Water

19 July 2024
File No: WGN200229 (36816)

Greater Wellington Regional Council
100 Cuba Street
Te Aro,
Wellington

Attn: [redacted] - Compliance Monitoring and Enforcement Officer

Dear [redacted]

Re: Request for an explanation for the discharge of undisinfected wastewater to coastal outfall at Rukutane Point.

Thank you for the opportunity to explain the undisinfected discharge from the Porirua WWTP into the coastal marine area on 5 June 2024.

The following is our response to the questions in the Please Explain letter submitted to Wellington Water on the 26 June 2024.

1. **What specifically caused the undisinfected discharge to occur?**

The Duron UV system penstock faulted at 3.34am on 5 June. This fault triggered the entire UV system to shut down as a safety feature, thus turning the lamps off and resulting in the effluent passing through without disinfection. The fault cleared in full at 5:39am returning the effluent to full disinfection.

The Duron penstock issues have been investigated by Xylem over a period of time but there has been difficulty in finding the root cause of the fault.

Wellington Water and Veolia are currently liaising with Xylem on how to resolve the issue such as trending the penstock performance to determine the cause of the fault and/or replacing the electromechanical parts of the penstock.

2. **What were the environmental effects of the discharge? Please refer to your shoreline sampling results and supply photos.**

Veolia undertook shoreline sampling, and communications protocols followed as required by the consent. This included opening no-swimming signage and notifying stakeholders directly via email under the Porirua Management Plan.

The shoreline results shown in Appendix I suggest that the environmental effect from this discharge event was minor. The shoreline sampling results were all below the LAWA Beach guideline for enterococci surveillance trigger level of 140 cfu/100 mL. Please note that results for Ammonia Nitrogen and Total Reactive Phosphorus for 5 June have not been received from the external laboratory at the time of submitting this report. The laboratory has advised the samples were analysed but due to recent data changes in their system they were not included in the results supplied, however they will be provided when these are available.

The photos are supplied in Appendix I however it is important to note that no visual change is visible with this type of discharge as disinfection does not have an effect on the coloration of the effluent.

3. **What on-site and off-site actions were taken or could have been taken to mitigate the discharge from occurring or reduce the timeframes?**

The faults were intermittent in nature, meaning the discharges were relatively short in duration, taking place in the early hours of the morning when site staff were not present. The faults resolved themselves with the last discharge stopping at 5:39am. At the time of the incident, there were technical issues with the new pager system that was preventing some alarms being generated to notify on-call staff of faults. On this occasion the system failed to send out an alarm. The pager alarm system issues have been resolved and the system is fully operational.

The focus was therefore on the mitigation of the potential adverse effects during the period of elevated microbiological levels. This involved:

- Opening the beach signs and having signs remaining open for at least 48 hours after the discharge had ceased.
- Notification of the discharge to RPH, GWRC and persons listed in the interested parties list.

4. **What measures will be put in place (and by what date) to ensure that such incidents do not occur again?**

To reduce the risk of this issue occurring again, Veolia decided to utilize the backup TAK UV system between the hours of around 4pm to 7am and during weekends, when the site is unmanned. The Duron unit has remained on duty during daytime hours, when staff can attend to any repeat faults immediately. This arrangement would allow Veolia to respond quickly if in case the Duron UV penstock faults again.

The following actions are planned to be undertaken:

- Penstock performance data will be trended to try to identify the fault and this is expected to be completed by end of August 2024.
- A spare Rotork actuator for the Duron UV penstock has arrived on site and is available for installation, dependent on the outcome of the performance data monitoring. This component controls the penstock gate and may be part of the problem. The current Auma

actuator has been previously tested and cleared of any fault, however testing continues and the Rotork is now available if needed.

The ongoing intermittent faults occurring within the Duron UV unit have been very frustrating to the operators and to Wellington Water. The fault has not been fully determined even though a range of investigative and remediation actions have been undertaken. The original equipment supplier has been deeply engaged in the investigation process. Their current advice is to monitor the performance data (actuator torque data), now that the system has been set up to capture this data, so that we may gain deeper insight into the possible cause of the fault(s). The alternative is to replace the actuator without having full confidence that this will resolve the problem.

We trust that this explanation satisfactorily answers the questions raised in the Please Explain letter on 26 June. Should further detail or clarification be required, please contact the writer directly.

Yours sincerely

Head of Wastewater Contracts
Wellington Water Limited

Appendix I

The following is a summary of the shoreline monitoring performed as part of resource consent WGN200229 [36816], Condition 16.

200m generally southwestwards of the outfall

Date	Time	Enterococci	pH	Salinity	Dissolved Oxygen	Temp.	Wind Direction	Wind Strength	Tide	Sea Conditions
dd/mm/yyyy	hh:mm	cfu/100mL	-	g/m3	g/m3	C	--	--	--	--
05/06/2024	9:06	10	8.17	37	10.73	13	SW	Light	High	Ebb
06/06/2024	9:38	10	8.17	37	11.44	14.1	N	Moderate	High	Flow
07/06/2024	9:21	10	8.38	38	11.3	14.2	N	Moderate	High	Flow

Table 5: Shoreline Monitoring

Date	Time	Total Ammonia Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Reactive Phosphorus	Total Nitrogen	Total Phosphorus
dd/mm/yyyy	hh:mm	g/m3	g/m3	g/m3	g/m3	g/m3	g/m3
05/06/2024	9:06		0.01	0.01		0.131	0.05
06/06/2024	9:38	1.14	0.01	0.01	0.071	0.853	0.05
07/06/2024	9:21	0.17	0.01	0.01	0.015	0.278	0.05

140m generally eastwards of the outfall

Date	Time	Enterococci	pH	Salinity	Dissolved Oxygen	Temp.	Wind Direction	Wind Strength	Tide	Sea Conditions
dd/mm/yyyy	hh:mm	cfu/100mL	-	g/m3	g/m3	C	--	--	--	--
05/06/2024	9:33	10	8.04	38	11.78	11.8	SW	Light	High	Ebb
06/06/2024	9:15	10	8.21	38	11.64	13.3	N	Moderate	High	Ebb
07/06/2024	9:43	10	8.21	38	11.54	13.7	N	Moderate	High	Flow

Table 4: Shoreline Monitoring

Date	Time	Total Ammonia Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Reactive Phosphorus	Total Nitrogen	Total Phosphorus
dd/mm/yyyy	hh:mm	g/m3	g/m3	g/m3	g/m3	g/m3	g/m3
05/06/2024	9:33		0.01	0.01		0.142	0.033
06/06/2024	9:15	0.01	0.01	0.01	0.027	0.129	0.05
07/06/2024	9:43	0.01	0.01	0.01	0.008	0.155	0.05

Titahi Bay Beach At Toms Road - Surf Club

Date	Time	Enterococci	pH	Salinity	Dissolved Oxygen	Temp.	Wind Direction	Wind Strength	Tide	Sea Conditions
dd/mm/yyyy	hh:mm	cfu/100mL	-	g/m3	g/m3	C	--	--	--	--
05/06/2024	9:48	10	8.12	38	11.85	11.3	SW	Light	High	Ebb
06/06/2024	9:50	140	8.24	38	11.71	13.3	N	Moderate	High	Ebb
07/06/2024	9:52	10	8.17	38	11.5	13.6	N	Moderate	High	Ebb

Table 6: Shoreline Monitoring

Control

Date	Time	Enterococci	pH	Salinity	Dissolved Oxygen	Temp.	Wind Direction	Wind Strength	Tide	Sea Conditions
dd/mm/yyyy	hh:mm	cfu/100mL	-	g/m3	g/m3	C	--	--	--	--

05/06/2024	10:02	10	8.14	38	11.87	12.6	SW	Light	High	Ebb
06/06/2024	10:07	10	8.08	38	11.75	13.8	N	Moderate	High	Ebb
07/06/2024	10:20	10	8.11	38	11.81	13.7	N	Moderate	High	Ebb

Table 7: Shoreline Monitoring

Date	Time	Total Ammonia Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Dissolved Reactive Phosphorus	Total Nitrogen	Total Phosphorus
dd/mm/yyyy	hh:mm	g/m3	g/m3	g/m3	g/m3	g/m3	g/m3
05/06/2024	10:02		0.01	0.01		0.143	0.05
06/06/2024	10:07	0.01	0.01	0.01	0.013	0.175	0.05
07/06/2024	10:20	0.01	0.01	0.01	0.005	0.137	0.05

Date	Biochemical Oxygen Demand 5-days (g/m3)	Total Suspended Solids (g/m3)	Faecal coliforms (cfu/100 ml)
5/06/2024	21	6	35
6/06/2024	16	6	10

Date	200m South West	140m Easterly	Titahi bay surf club	Control	Outfall
05/06/2024					
06/06/2024					
07/06/2024					

[redacted]

From: [redacted]
Sent: Tuesday, July 23, 2024 8:50 AM
To: [redacted]
Cc: [redacted]
Subject: RE: Please Explain Porirua WWTP - undisinfected discharges on 16 & 17 June 2024

Hi [redacted]

We have reviewed our response in relation to the 9th November 2023 undisinfected discharge and it's similarity to the two undisinfected discharges of 16 and 17 June 2024. We can confirm the following :

- Both June power outages were unplanned and caused by mains power outages (network), similar to the 9 November 2023 outage
- Both June discharges were relatively short in duration, 45 minutes and 65 minutes respectively – the November discharge was 30 minutes duration
- Samples have been taken, as per the discharge protocol, for both June events

Conclusion
The circumstances around the power outages occurring on 16/17 June 2024 and 9 November 2023 are similar in nature, therefore the reasons for the undisinfected discharge remain the same :

1. It is impossible for us to predict unplanned outages.
2. There is no backup power supply to the UV system at Porirua WWTP and therefore mains power outages will result in undisinfected discharges.
3. The main measure to prevent recurrence of this type of discharge in future remains providing dedicated backup power source to the UV system. The project for the installation of this power supply is underway.

I trust this provides the detail you need. Please contact me directly should you require further detail.

Kind regards
[redacted]

[redacted] Head of Wastewater Contracts
Wellington Water
Mob [redacted]
Private Bag 39804, Wellington Mail Centre 5045
Level 4, 25 Victoria Street, Petone, Lower Hutt

From: [redacted]@gw.govt.nz>
Sent: Tuesday, July 2, 2024 12:01 PM
To: [redacted]@wellingtonwater.co.nz>
Cc: [redacted]@gw.govt.nz>
Subject: Please Explain Porirua WWTP - undisinfected discharges on 16 & 17 June 2024

Hi [redacted]

Greater Wellington Regional Council are investigating the discharge of undisinfected wastewater from Porirua WWTP on 16 and 17 June 2024. I have also contacted Veolia Water Services (ANZ) Pty Limited and Porirua City Council.

Thank you for sending through your discharge parameters for the events on 16 and 17 June 2024, please can you **confirm that these events were due to the same fault as identified in your please explain response dated 5 January 2024** for the discharge event on 9 November 2023 (UV system power outage). I invite you to respond and provide any comments into this matter by **24 July 2024.** You are receiving this email because you manage wastewater services (including Porirua Wastewater Treatment Plant) on behalf of Porirua City Council, and you are responsible for ensuring compliance with all conditions of the consent WGN200229 [36816] held by Porirua City Council.

Greater Wellington Regional Council has a responsibility to enforce the RMA and failure to comply with the RMA may result in enforcement action including formal warnings, infringement notices or prosecution. You should also be aware that the information that you provide may be used in evidence against you.

If you have any questions, please give me a call.

Regards,

[redacted]
Compliance Monitoring & Enforcement Officer, Environmental Regulation | Kaiāpiha Taiao
Greater Wellington | Te Pane Matua Taiao
100 Cuba St, Te Aro, Wellington | Te Whanganui-a-Tara