

14 March 2023

File Ref: OIAPR-1274023063-771

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Tēnā koe ██████████

Request for information 2023-037

I refer to your request for information dated as of the CLG meeting on 13 February 2023 and email to ██████████ at Wellington Water Limited on 15 February 2023.

Your request was transferred to Greater Wellington Regional Council (Greater Wellington) on 27 February 2023.

You have requested the following:

“Question in CLG Meeting document “Condition 21 – We would like to see the response from Veolia to the “please explain” letter of 9 March 2022 and the data for the sludge event at the Porirua Wastewater Treatment Plant on 19 August 2021”

Question from email “We were also hoping to have a report data on the Inflow and Infiltration, a consent requirement - which is normally reported on. There was no such report attached to the WWL Annual Consent 2021-2022. Appendix iii is missing”

Questions from email “Why has the reporting changed so much?”, “Why is the compliance rating fair but Significantly not compliant?” and “Who holds the authors of these reports to account when the compliance authority is one of the authors?””

Greater Wellington’s response follows:

Question in CLG Meeting document “Condition 21 – We would like to see the response from Veolia to the “please explain” letter of 9 March 2022 and the data for the sludge even at the Porirua Wastewater Treatment Plant on 19 August 2021”

Please find in **Attachment 1** Wellington Water Limited’s response to “Request for an explanation in relation to non-compliances at the Porirua Wastewater Treatment Plant” to the request for an explanation in relation to non-compliances at the Porirua Wastewater Treatment Plant. This please

explain was addressed to Wellington Water and as such, was responded to by Wellington Water and not Veolia. We are therefore refusing this part of your request for information under section 17(g) of the Local Government Official Information and Meetings Act 1987 (the act) on the basis that the information requested is not held by the local authority and there are no grounds for believing that the information is either held by another local authority or a department or Minister of the Crown or organisation; or connected more closely with the functions of another local authority, or a department or Minister of the Crown or organisation.

Data for the sludge event on 19 August 2021 is contained within this please explain letter, and also in the annual report.

The link to the annual report, and all its attachments can be found here and is publicly available:

https://www.wellingtonwater.co.nz/assets/Resources/Wastewater/Wastewater-Treatment-Plants/Porirua/Final-FY21_22-Porirua-Wastewater-Treatment-Plant-Annual-Resource-Consents-Report-v2.pdf

Question from email "We were also hoping to have a report data on the Inflow and Infiltration, a consent requirement - which is normally reported on. There was no such report attached to the WWL Annual Consent 2021-2022. Appendix iii is missing"

The inflow and Infiltration report can be found as Appendix iii in the annual report which is linked above. This starts from page 26.

Why has the reporting changed so much?

Compliance reports can change depending on the compliance issues that occur during the reporting period.

Why is the compliance rating fair but Significantly not compliant?

This was answered in the CLG meeting on 13 February 2023 by Greater Wellington. The rating information is also on noted at the end of each compliance report. The fair rating takes into consideration operation on site and for all consents Fair is the second lowest rating. Compliance ratings are completed for each consent. Only one of the three consents within the report is significantly non-compliant.

Who holds the authors of these reports to account when the compliance authority is one of the authors?

Wellington Water Limited are responsible for writing or commissioning the quarterly reports and any information required by consent conditions. Greater Wellington write compliance reports, but there is no legal requirement for these compliance reports.

The intention of compliance monitoring is to undertake 'spot checks' to ascertain if there is compliance with conditions/requirements of the consent. If non-compliance is found or even suspected, then our role is to 'encourage' the consent holder (Porirua City Council) to ensure compliance going forward. This can be through the use of various tools from the more formal punitive measures (e.g. infringement fines) to engagement and education. We use a range of such tools from regular compliance inspections, engaging with Porirua City Council to ensure actions/measures on site in way of good practice and of course we have also issued infringement fines. In our experience when dealing with non-compliance, it is use of this range of tools which is most effective.

If you have any concerns with the decision(s) referred to in this letter, you have the right to request an investigation and review by the Ombudsman under section 27(3) of the Local Government Official Information and Meetings Act 1987.

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 on Greater Wellington's website with your personal information removed.

Nāku iti noa, nā



Al Cross

Kaiwhakahaere Matua, mo te Taiao | General Manager, Environment Management

26 April 2022

Your File No: WGN980083

Greater Wellington Regional Council
Wellington Office
100 Cuba Street
Te Aro, Wellington 6011
PO Box 11646
Manners Street, Wellington 6142

Attn: Alice Bird (Resource Advisor, Environmental Regulation)

Dear Alice,

Request for an explanation in relation to non-compliances at the Porirua Wastewater Treatment Plant

Thank you for your 9 March 2022 letter requesting an explanation regarding:

- exceedances in faecal coliform levels for the non-compliant effluent quality discharges from the PWWTP to the CMA in December 2021
- a sludge carryover on 6 December 2021
- a sludge carryover on 19 August 2021.

Thank you also for extending the deadline for this response until 27 April 2022. Please find our response to your questions on each of these incidents below:

A. Non-compliant Effluent Quality

1. What was the cause of the exceedances in faecal coliform levels for the non-compliant effluent quality discharges from the PWWTP to the CMA in December 2021?

The Porirua WWTP consent allows for up to two exceedances of 2,000 cfu / mL in the first 20 grab samples collected each month. In December 2021 more than two exceedances of 2,000 cfu / mL occurred due to a combination of wet weather and a failure of the automated communication between the flow meter and the UV.

Wet Weather

On the 6-7th of December a wet weather bypass event occurred at the WWTP. This event was the cause of the grab sample result for the 6th exceeding 2,000 cfu / 100 ml. On 7 December the grab sample result showed faecal coliform levels of 746 cfu/100 ml.



Reduce your water footprint by only using what you need.

Taps use around six litres of water per minute, so leaving the tap running for two minutes a day equates to 168 litres a fortnight!



/wellingtonwater



@wgtwaternz & @wgtwateroutage



@wellington_water

Over 14th to 16th December there was a second heavy rain event. This caused only one bypass on December 16. All faecal coliform samples during the heavy rain event were less than 2,000 cfu / 100 ml, except that taken on December 14.

Communication between the flow meter and the UV System

The UV system includes an automated control that increases UV intensity as wastewater flow through the UV system increases. The automated system is intended to ensure that as flow increases the same level of disinfection is provided.

The automated system had been offline for much of 2021, while the new UV system was installed. During this period, the UV dosage had been managed manually and operated at maximum dose. Unfortunately, when the automated system was brought back online in mid-December 2021 it did not operate effectively and appears at times to have turned off a bank of lamps due to 'low flow'. This resulted in effluent grab samples exceeding 2,000 cfu / 100 mls from 19 December to 22nd December as shown in the Table 1 below.

Table 1: Effluent Sampling results for December 2021

| Date | Effluent BOD | Effluent Suspended Solids | Effluent Faecal Coliform |
|------------|--------------|---------------------------|--------------------------|
| 1/12/2021 | 13 | 3 | 19 |
| 2/12/2021 | 12 | 2 | 12 |
| 3/12/2021 | 13 | 3 | 46 |
| 4/12/2021 | 12 | 2 | 56 |
| 5/12/2021 | 14 | 7 | 29 |
| 6/12/2021 | 14 | 7 | 16241 |
| 7/12/2021 | 3 | 5 | 746 |
| 8/12/2021 | 10 | 2 | 290 |
| 9/12/2021 | 9 | 2 | 298 |
| 10/12/2021 | 8 | 2 | 269 |
| 11/12/2021 | 4 | 2 | 27 |
| 12/12/2021 | 4 | 3 | 180 |
| 13/12/2021 | 3 | 4 | 877 |
| 14/12/2021 | 12 | 7 | 2541 |
| 15/12/2021 | 4 | 5 | 1361 |
| 16/12/2021 | 11 | 6 | 1328 |
| 17/12/2021 | 13 | 20 | 844 |
| 18/12/2021 | 8 | 3 | 539 |
| 19/12/2021 | 8 | 2 | 2919 |
| 20/12/2021 | 5 | 3 | 3840 |
| 21/12/2021 | 3 | 3 | 3509 |
| 22/12/2021 | 3 | 2 | 2618 |
| 23/12/2021 | 4 | 2 | 256 |
| 24/12/2021 | 4 | 2 | 89 |

| Date | Effluent BOD | Effluent Suspended Solids | Effluent Faecal Coliform |
|------------|--------------|---------------------------|--------------------------|
| 25/12/2021 | 4 | 2 | 25 |
| 26/12/2021 | 5 | 5 | 18 |
| 27/12/2021 | 4 | 2 | 23 |
| 28/12/2021 | 3 | 2 | 42 |
| 29/12/2021 | 4 | 2 | 21 |
| 30/12/2021 | 4 | 3 | 42 |
| 31/12/2021 | 3 | 2 | 6 |

2. What are the procedures and infrastructure that should have been used to prevent the non-compliant effluent quality discharge from the PWWTP to the CMA during December 2021?

The UV system is the key element of the WWTP infrastructure that should have prevented this non-compliance. As the automated system was indicating that the required UV was being applied, even though it was not, no alarm was generated.

At the time that these exceedances occurred there was not a procedure in place to escalate abnormal faecal coliform daily results. Notification procedures are currently being reviewed and a notification process will be put in place to ensure that when daily samples indicate plant failures appropriate personnel are notified.

3. What actions have been taken to date to ensure non-compliant effluent quality discharges from the PWWTP to the CMA cease?

The UV system was returned to manual operation (running with both banks for 100%) as soon as we noticed the effluent faecal coliform exceedances on 23 December 2021. This is evidenced by the grab sample results in Table 1.

4. What actions are planned to be undertaken, and by when, to ensure the non-compliant effluent quality discharges from the PWWTP to the CMA cease?

Faecal coliform levels in the effluent returned to compliant levels from December 23, 2021. This was achieved by running the UV system on manual mode. The communications issue in the UV system was resolved on 11 March 2022 and the unit is now being run automatically again.

The new UV system is expected to be fully operational by end of April 2022. In combination with the existing system this will substantially increase the capacity of the plant's disinfection system and will further reduce the risk of non-compliance with effluent faecal coliform limits.

Also as noted, notification procedures are currently being reviewed and a notification process will be put in place to ensure that when daily samples indicate plant failures appropriate personnel are notified. In the interim the laboratory is notifying Wellington Water directly if there are any high sample results.

5. What steps were taken to remedy any adverse environmental effects resulting from the non-compliant effluent quality?

Most direct adverse effects arising from elevated levels of microbiological contamination, such as public health risks and recreation impacts, are relatively short lived and reduce quickly once the source of the contamination is rectified. This is evident in the results of shoreline sampling included in Appendix A.

Shoreline monitoring was undertaken in response to the 6 of December bypass event in compliance with conditions 14 and 15 of WGN980083 [24384]. The results from sampling indicates that the WWTP discharge plume was driven south along the coast away from Titahi Bay. The results also indicate the bacteria levels in the receiving environment returned to normal levels the day after the discharge ceased on December 7. Given the very small scale of the 16 December bypass discharge shoreline sampling was not undertaken, in accordance with previous agreements with GWRC. Shoreline sampling was also undertaken on December 20, as a part of the monthly shoreline monitoring required by the consent. The sample indicates that even though faecal coliform levels in the treated wastewater were elevated, it did not seem to be impacting shoreline sites.

Mitigation of public health effects was undertaken on the 6th of December during the bypass event which caused elevated faecal coliform levels. Notifications to GWRC, RPH and other interested parties were sent as soon as the bypass discharges occurred. Signs were also in place during the bypass discharges and remained open (i.e. on display) for 48 hours after the discharge had ceased.

Given the small scale of the bypass event on December 16, notification was made to GWRC and RPH, but no shoreline sampling was undertaken in accordance with the protocol agreed with GWRC.

As the non-compliant discharges in late December were not identified until 23 December, i.e. after the event had occurred for 4 days, only limited mitigation was possible. In this respect notification was provided to GWRC and RPH.

B. Sludge carryover in December 2021

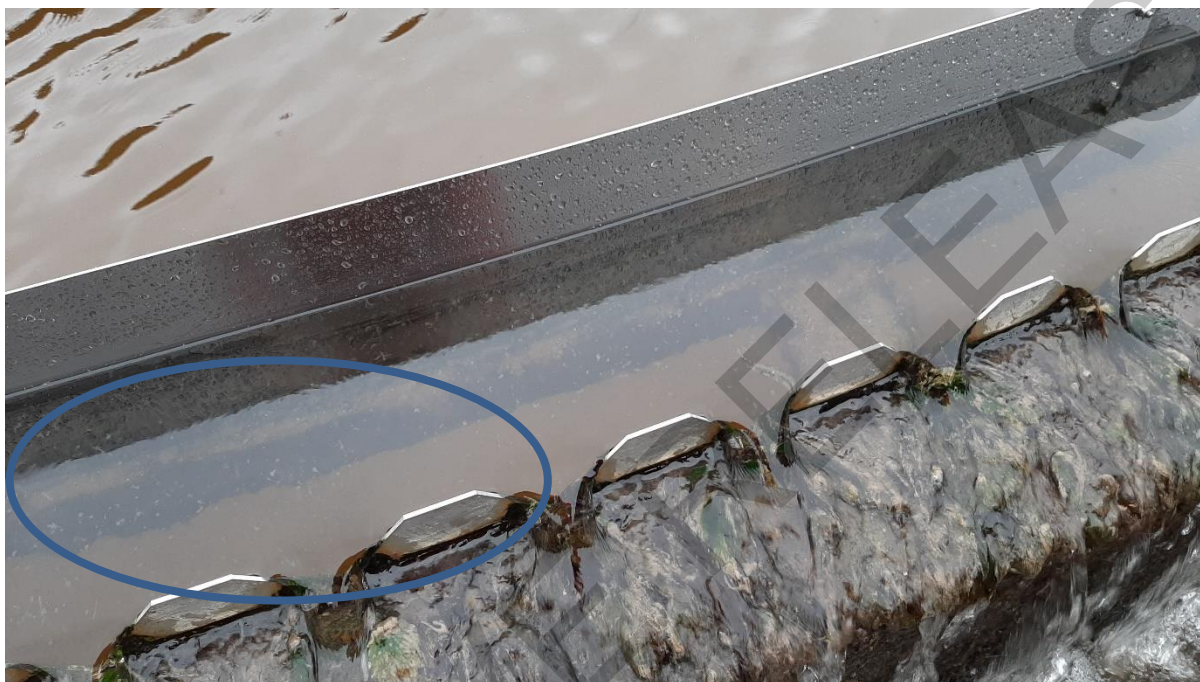
1. What was the cause of the minor sludge carryover which occurred on 6 December 2021?

Previously Veolia incorrectly described the discharge on December 6 as a sludge carry-over. Veolia and Wellington Water do not accept that a sludge carryover occurred on 6 December. It is acknowledged above that there was a bypass on December 6.

Sampling (see Table 1 above) indicates that BOD and suspended solids were not elevated in the effluent on December 6, as would be expected if a sludge carry-over event had occurred. Further no visible brown plume was reported at the outfall.

On December 6th, as occurs on occasions at this and other activated sludge plants, a small amount of solids was being released as part of the treated effluent. The photo below taken on December 7 shows similar effluent quality as measured on December 6.

We consider that a sludge carry-over should only be defined as the discharge of significant biomass from the clarifiers due to sludge blanket levels reaching the weir levels.



2. Why is the sludge not being managed on site to an acceptable level to prevent sludge carrying over into the final effluent?

Wellington Water does not accept that a sludge carry over occurred on December 6th.

3. What steps were taken to remedy any adverse environmental effects resulting from the sludge carryover?

Wellington Water does not accept that a sludge carry over occurred on December 6th, as such no remedial action was undertaken. There was however a bypass discharge on the 6th of December which required sampling, notification and sign erection to be undertaken (see answer to A.5 above). This is conceptually different from a sludge carryover (i.e. an overflow of sludge from the clarifiers).

4. What actions have been taken to date to ensure sludge carryovers from the PWWTP to the CMA cease?

Following sludge carryovers earlier in 2021, a detailed investigation was undertaken. This identified that the activated sludge at the treatment plant was settling more poorly than design assumptions, the aeration basin of the plant was being operated at a high mixed liquor suspended solids (MLSS) concentration, there was significant manual intervention from the operations team to manage the plant as best they could, and in significant wet weather events sludge was overflowing from the secondary clarifiers and being discharged from the outfall at Rukutane Point. The report concluded that the MLSS was not being adequately controlled at the time, but with suitable control the plant would have capacity for the peak wet weather flow.

The report made a number of recommendations, the most significant one being to reduce MLSS below 3,500 mg/L, which was completed by late 2021. Automated monitoring has now been installed in the three clarifiers to enable continuous monitoring of the sludge blanket level in each clarifier. A follow up investigation of sludge settling parameters completed in March 2022 has shown that through these efforts sludge is now settling significantly better in the clarifiers than it was in 2021.

5. What actions are planned to be undertaken, and by when, to ensure sludge carryovers from the PWWTP CMA cease?

A second stage of the detailed 2021 investigation into solids management at the plant has also been completed. The report identified that due to constraints in landfill operating hours and lack of dewatered sludge storage on site the existing sludge thickeners are effectively at capacity. Upgrades for the sludge thickening and dewatering equipment are currently being scoped and will be implemented in the next few years. In the meantime, the landfill has agreed to extend their acceptance of dewatered sludge to Saturdays, thereby resolving the immediate constraint.

6. We are aware of the upgrades proposed to sludge treatment on site. Please provide a description outlining these upgrades and the timing of the works. Will these address the sludge carryover issue?

Please see answers to questions B.4 and B.5 above.

C. Dry weather sludge carryover in August 2021

1. Please provide evidence that you notified GWRC of the dry weather sludge carryover incident which occurred on 19 August 2021;

It is acknowledged that there was an oversight and that no notice was given to GWRC.

2. If you did not notify GWRC of the above, why was no notification given to GWRC prior to the submission of the July – September quarterly report which included the incident details?

The notification process that was in place was not followed on this occasion. Wellington Water is currently working with Veolia on improving the communication process for the WWTP to ensure that this will not happen again.

3. Please provide the notification PWWTP received from the notifier;

At midday on August 19 an email from a member of the public was received by Wellington Water which stated:

“Just looked out my window and it looks like there’s a sludge carry over going on at Porirua WWTP at the moment. Quite a distinct plume around Rukutane Point, which seems to be increasing in size.”

4. What was the outcome of the investigation into this incident?

An investigation undertaken by Veolia over the performance of the clarifiers. This investigation indicated that the sludge carryover events in 2021 were likely caused by excessive solids in the wastewater treatment process and mechanical faults in the solids handling process.

In addition, Wellington Water commissioned external technical reviews and an independent review of how the WWTP operations to expedite improvements and restore confidence in the delivery of wastewater services.

The recommendations of the external technical reviews are set out in response to questions B.4 and B.5 above. The recommendations of the independent review have been accepted and all relevant parties are now working on implementing these.

5. Please provide evidence (including photos if possible) to show that the incident was compliant with resource consent WGN980083.

The effluent quality results for the 19th August 2021 are effluent BOD of 3 mg/mL, suspended solids of 3 mg/mL and faecal coliform of 10 cfu/100 mL which are below the consent stipulated limits.

Veolia forwarded photos (as shown below) of the Rukutane outfall taken on 19th August 2021 at around 14:30. The photos showed that there was no discoloration beyond the 200m mixing zone at the time the photo was taken.



6. Recommendation 5 of the Independent Review of the Wellington Water Regional Wastewater Treatment Plant Operating Model (Review Report v3.0), dated December 2021, is to develop processes for timely notifications to client Councils, GWRC, iwi and communities of service interruptions and overflows to the receiving environments. What are you going to do to improve communication with GWRC in the future in light of this recommendation?

Wellington Water and Veolia are in the process of bringing in a new online, semi-automated notification process. This is being tested at present by the operators. Along with this we are preparing new dashboard reports for each of the treatment plants which will contain detail on consents and current status of the plants.

D. UV treatment upgrade

1. What have Veolia's investigations shown in regard to controls of the existing UV system?

Veolia's investigation showed that there was a communications issue between the effluent flow meter which controls the UV dose being generated by the UV system in mid-December 2021. During the investigation phase the UV system was put into manual mode to ensure maximum disinfection. The system is now back operating in automatic mode.

2. If the UV upgrade works were to have been completed by the original date on Abatement Notices A960, A961 and A962 (issued to Veolia, Wellington Water and Porirua City Council, respectively) of 30 September 2021, would the non-compliance that occurred during December 2021 have been prevented?

Given the increase in disinfection capacity, the new UV system may have prevented the elevated faecal coliform levels that occurred in December due to wet weather.

The new UV system would not have prevented the elevated faecal levels which occurred after 19 December as a result of the communication issue between the flow meter and the UV system. However as identified earlier, notification procedures are currently being reviewed and a notification process will be put in place to ensure that when daily samples indicate plant failures appropriate personnel are notified. This should reduce the risk of similar elevated faecal levels going undetected for a period of days, as occurred over December 19-22.

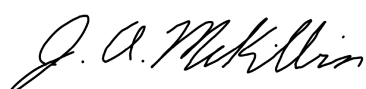
3. Will non-compliant effluent quality continue to occur after the UV system upgrade has been completed?

The effluent quality in Porirua WWTP has been compliant since January 2022 even without the completion of the new UV system. However, the completion of the new UV project will further reduce the risk of effluent faecal coliform non-compliance, as it will increase the capacity of the disinfection system.

The new UV system passed its commissioning stage on 18 March 2022 and is expected to be operational by the end of April.

We trust that the information provided for the above questions is sufficient. If you have any follow up questions, please do not hesitate to contact me.

Yours sincerely,



Jeremy McKibbin
Group Manager, Network Management

Appendix A: Shoreline Monitoring Data

| Date | Te Korohiwa Rocks | | 200m south west of the outfall | | 200m east of the outfall | | Titahi Bay Beach (south end) | | Titahi Bay Beach | | Mount Cooper | | Control site | |
|------------|-------------------------|-----------------------------|--------------------------------|-----------------------------|--------------------------|-----------------------------|------------------------------|-----------------------------|-------------------------|-----------------------------|-------------------------|-----------------------------|-------------------------|-----------------------------|
| | Enterococci (cfu/100mL) | Faecal coliform (cfu/100mL) | Enterococci (cfu/100mL) | Faecal coliform (cfu/100mL) | Enterococci (cfu/100mL) | Faecal coliform (cfu/100mL) | Enterococci (cfu/100mL) | Faecal coliform (cfu/100mL) | Enterococci (cfu/100mL) | Faecal coliform (cfu/100mL) | Enterococci (cfu/100mL) | Faecal coliform (cfu/100mL) | Enterococci (cfu/100mL) | Faecal coliform (cfu/100mL) |
| 6/12/2021 | 420 | 88 | 1900 | 1700 | 120 | 52 | 400 | 620 | 52 | 80 | 120 | 31 | 540 | 80 |
| 8/12/2021 | 2 | 2 | 4 | 11 | 2 | 4 | 2 | 2 | 27 | 22 | 2 | 2 | 2 | 4 |
| 11/12/2021 | 16 | 6 | 2 | 2 | 4 | 4 | 6 | 18 | 12 | 24 | 6 | 10 | 2 | 2 |
| 20/12/2021 | 2 | 2 | 6 | 6 | 2 | 2 | 4 | 2 | 2 | 2 | 4 | 2 | 2 | 4 |