

SOUTH WAIRARAPA DISTRICT COUNCIL

20 NOVEMBER 2019

AGENDA ITEM B7

COMPLIANCE WITH DRINKING WATER STANDARDS

Purpose of Report

To inform Councillors of the compliance status of SWDC water supplies for 2018/19, and seek approval for additional funding for urgent work needed to provide safe drinking water.

Recommendations

Officers recommend that the Council:

1. *Receive the 'Compliance with Drinking Water Standards' Report.*
2. *Note the compliance status of our water supplies for FY2018/19, and that urgent work is needed to achieve compliance and provide safe drinking water.*
3. *Approve additional funding of \$500,000 for the 2019/20 financial year for urgent work needed to improve treatment plant performance generally (including interim improvements at Memorial Park, Greytown and improvements to the Pirinoa water supply), to complete detailed design work for permanent improvements needed at Memorial Park, and to commence the permanent improvement work required.*
4. *Note that the cost of permanent improvement work needed at Memorial Park, Greytown, is to be confirmed following completion of design work, and the permanent improvement work will extend into FY 2020/21.*

1. Executive Summary

The safety of the district's drinking water is a top priority for our Council. We monitor its safety through assessment of compliance with the Drinking Water Standards of New Zealand (DWSNZ), as reported by the Ministry of Health's Central North Island Drinking Water Assessment Unit.

A summary of the compliance status of our water supplies for the 2018/19 financial year is provided in Figure 1:

Table 1: Compliance status 2018-19

Water Supply	Compliant?			Multi-barrier approach in place?
	Bacterial	Protozoa	Chemical	
Featherston/Greytown (Waiohine)	No	No	No	Yes – but improvements needed in alarms, controls and data capture
Greytown (Memorial Park)	No	No	Yes	No
Martinborough	No	No	Yes	No*
Pirinoa	No **			No**

*A multi-barrier approach is now in place following the decision to chlorinate the supply

**Pirinoa does not feature in the CNIDWA report, but we have been advised that the existing treatment in place does not achieve DWSNZ requirements

From the above, it is clear that there is work to be done in order for us to achieve compliance with the drinking water standards and ensure we provide safe and healthy drinking water to our communities.

Earlier this year, we made the decision to join Wellington Water with the objective of improving management and delivery of water services to our communities. We became a shareholder of Wellington Water on 1 October 2019.

Since then, Wellington Water has been making changes to improve the performance of our treatment plants within the current funding allowance. They have identified further urgent improvement work that needs to be implemented quickly to provide safe drinking water and achieve compliance with the standards.

To implement the urgent work identified, initial additional capital investment of \$500,000 is required this financial year. Once Wellington Water have completed options assessments and preliminary design to confirm the full scope of work required, they will advise Council of the full costs of providing safe and healthy drinking water that complies with the DWSNZ.

2. Background

A multi-barrier approach is essential for ensuring safe drinking water for our communities, and is one of the six principles of safe drinking water. As indicated in Table 1, some of our water supplies currently lack multi-barrier protection.

The importance of the six principles of safe drinking water were reinforced following the Havelock North contamination incident in 2016 and subsequent inquiry, and through our own experience with the two boil water notices in Martinborough earlier

this year. These principles will be a key focus of the drinking water regulator that is soon to be established.

On 7 October 2019 we received our annual report on drinking water compliance from the Ministry of Health's Central North Island Drinking Water Assessment Unit (*Report on Compliance with the Drinking-Water Standards for New Zealand 2005 (revised 2018) and duties under the Health Act 1956 for the period 01/07/2018 to 30/06/2019*).

This report shows that for the 2018/19 financial year the Waiohine (Featherston and Greytown), Memorial Park (Greytown), and Martinborough water treatment plants did not meet the requirements for bacteriological and protozoal compliance in the Drinking Water Standards for New Zealand 2005 (revised 2018, DWSNZ). The requirements for chemical compliance were also not met for the Featherston water distribution zone, and the requirements for bacteriological compliance were not met for the Martinborough, Featherston and Greytown distribution zones.

We also operate the Pirinoa supply, though this does not feature in the report, perhaps because the supply falls under the requirements of a 'Small Water Supply' of less than 500 people.

Following the boil water notice events in Martinborough earlier this year, we now have multi-barrier protection in place in Martinborough. Although by the end of the 2018/19 year we had multi-barrier protection in place, the fact that for part of the year we did not, means we do not comply for the year. In order to comply we need to meet all the drinking water standards throughout the whole year.

In April this year, Council made the decision to become a shareholder of Wellington Water, with the objective of improving management and delivery of water services to our communities.

Since we became a shareholder on 1 October 2019, Wellington Water has commenced operation of the treatment plants and supply networks on our behalf, and as part of this has completed the following work:

- visited each of the water treatment plants,
- arranged for process audits of our water treatment plants,
- sought feedback on drinking water matters from the Drinking Water Assessor at Regional Public Health, and
- collated feedback from the treatment plant operators.

Various improvement works required have been identified, with the key issues identified being:

Table 2 – Issues identified from treatment plant process audits

Water supply/treatment plant	Issues identified
Greytown/Memorial Park	<ol style="list-style-type: none"> 1) The Memorial Park treatment plant lacks a Protozoa barrier 2) Chlorine is the only barrier to contamination in place. If this system does not function correctly Wellington Water would have no choice but to issue a boil water notice. It's therefore important to put additional protection in place as soon as possible, or to stop using the supply. Not using the supply is not a viable option at present due to lack of sufficient supply capacity from the Waiohine Water Treatment Plant. Upgrading the Memorial Park supply to compliant status is considered preferable to abandoning it, as this will provide operational flexibility and increased resilience of the Featherston and Greytown water supply generally. 4) The alarms and controls have issues associated with the electronic equipment that need addressing through equipment upgrade and/or replacement. Temporary improvements have been made to the existing equipment to manage supply risk in the meantime. 5) The chemical storage and dosing arrangements do not currently comply with modern standards.
Featherston and Greytown/Waiohine	<ol style="list-style-type: none"> 1) The plant does not currently have sufficient capacity to supply both Greytown and Featherston and needs to be supplemented from the Memorial Park water supply. Installation of an additional supply bore together with lining of an existing storage pond to convert it to a treated water storage facility was initiated earlier this year in an effort to provide additional supply capacity. This work is yet to be completed, is unlikely to be ready for the upcoming peak summer demand period. The sustainable yield achievable is still to be confirmed and will not be known until the new bore is operational. This means there is an ongoing reliance on the Memorial Park bore to supply Greytown. 2) The proposed treated water storage facility will require additional Chlorine dosing equipment. 3) The alarms and controls have issues associated with the electronic equipment that need addressing through equipment upgrade and/or replacement. Temporary improvements have been made to the existing equipment to manage supply risk in the meantime. 4) The pH control system (soda ash) needs replacement. 5) Old equipment and chemicals associated with the mothballed ultrafiltration plant are still onsite, presenting a health and safety hazard and taking up space in the treatment plant building. These need to be removed and disposed off in a safe way.
Martinborough/Ruamahanga	<ol style="list-style-type: none"> 1) The Martinborough Water Treatment Plant telemetry system has reliability issues that have resulted in data loss which has impacted the compliance status for FY 2019/20. Though not impacting the provision of safe water, improvements are needed to avoid future loss of data that will continue to impact compliance status. 2) There are further improvements proposed in the Lutra report that need to be actioned, once the manganese removal plant is installed. 3) New chlorine dosing equipment is needed at the Martinborough reservoirs to reduce health and safety risks for operators.
Pirinoa	<ol style="list-style-type: none"> 1) There are improvements needed to the controls in place to determine or adjust treatment performance. 2) Chlorine is currently dosed manually three into the reservoir. New automated chlorine dosing equipment is needed at the Pirinoa treatment plant to reduce health and safety risks for operators. 3) The ozone treatment facility does not achieve DWSNZ requirements and therefore cannot be relied on to provide a multi-barrier approach. An additional barrier needs to be put in place.

On a general level, Wellington Water considers that the water supplies are vulnerable as they include shallow bores, with little or no storage or flow buffering prior to delivery to customers, and are at risk due to system changes and operational failures with limited operational flexibility at present, due to the way they have developed over time. This relates to the fourth principle of safe drinking water, 'change precedes contamination'.

Wellington Water has indicated that our key risks currently relate to the lack of an adequate multi-barrier approach at Memorial Park in Greytown and at Pirinoa. While we continue to monitor the water quality within Greytown and Pirinoa including testing for possible contamination and testing residual chlorine levels, if the chlorine systems were to fail or malfunction, we would have no effective barriers to contamination in place and would have no choice but to issue a boil water notice as part of our duty of care to mitigate public health risks.

Wellington Water has therefore recommended urgent improvement works are implemented to manage these risks.

There are also a number of lesser risks that need attention to improve system performance and ensure we provide safe drinking water that meets the DWSNZ.

3. Discussion

3.1 Options

Officers have considered the advice from Wellington Water and consider that it is not an option to either do nothing or wait until the next financial year to commence the work to improve our water supplies.

Officers are therefore asking Council to approve additional funding in FY 2019/20 to allow completion of initial urgent improvement works, and to confirm additional funding to address all key risks.

Approval of additional funding in FY 2019/20 will allow:

1. Completion of urgent and interim improvement work at Memorial Park to provide safe water,
2. Completion of urgent improvement work at Pirinoa to provide safe water,
3. Completion of important improvements to electrical, control, and alarm systems at the treatment plants, and
4. Completion of design for permanent improvements needed at Memorial Park treatment plant, providing greater confidence in cost estimates for the remainder of the work to be completed once Council approval has been obtained.

4.1 Consultation

The district water supply is a significant activity under the Council's Annual Plan and Long Term Plan. As such, decisions relating to the water supply are "significant" for the

purposes of decision-making and consultation requirements under the Local Government Act 2002. The Council's Significance and Engagement Policy states at paragraph 6.7 that consultation is not appropriate when there is a threat to public health or safety. Consultation on the decision to approve funding for urgent improvement work is therefore not required. Further consideration will be given to community engagement and consultation as the work develops.

4.2 Legal Implications

Legal implications relating to the Local Government Act are described above. That Act also places obligations on the Council to maintain water services and carry out assessments, from a public health perspective, on the adequacy of the water service.

There are other legal implications associated with the Health Act that required urgent actions to improve the safety of drinking water supplied to our communities.

4.3 Financial Considerations

An additional \$500,000 in capital expenditure is required for FY 2019/20. Wellington Water will confirm the additional funding required following completion of preliminary design, and a further paper will be presented to Council to approve the amount required to complete the remainder of the work. Depending on timing, approval for some of the additional Capital expenditure may be part of the Annual Plan process for FY 2020/21.

The additional \$500,000 capital expenditure is proposed to be funded from the infrastructure reserve and will not impact on rates.

The \$500,000 will cover the following:

- Completion of urgent and interim improvement work at Memorial Park to provide safe water,
- Completion of urgent improvement work at Pirinoa to provide safe water,
- Completion of important improvements to electrical, control, and alarm systems at the treatment plants, and
- Completion of design for permanent improvements needed at Memorial Park treatment plant

Agreeing to this expenditure will minimise risk to provision of safe drinking water pending completion of permanent improvement works, while also allowing design work to be completed to increase confidence in the cost associated with permanent upgrade work at Memorial Park, Greytown.

At present, high level estimates of the total capital expenditure to complete all of the proposed work range from \$2.8 million to \$5.6 million. This range is due to a 100% contingency until there is more certainty around the works to be done. Council will be advised once more accurate estimates are available. (See attached briefing paper Appendix 1 and slide 12 "Cost estimating in Appendix 2 for more information).

5. Conclusion

Work is needed for us to achieve compliance with the drinking water standards and ensure we provide safe and healthy drinking water to our communities.

Earlier this year we made the decision to join Wellington Water with the objective of improving management and delivery of water services to our communities. We became a shareholder of Wellington Water on 1 October 2019.

Wellington Water has identified urgent improvement work that needs to be implemented quickly to provide safe drinking water and achieve compliance with the standards.

To implement the urgent work identified, additional capital investment of \$500,000 is required this financial year, with further investment required for permanent improvements to the Memorial Park bore. The actual amount required will be confirmed following completion of further design work.

Officers are seeking approval from Council to spend for \$500,000 of unbudgeted Capital expenditure to enable this work to proceed.

6. Supporting Information

6.1 Long Term Plan - Community Outcomes

6.1.1. *Healthy & Economically Secure People*

The recommended approach will minimise public health risks and aligns with Wellington Water's service goal 'We provide safe and healthy drinking water'.

It will also better protect the local economy from negative impacts associated with boil water notices due to a lack of multi-barrier approach, and will increase the water supplies' ability to cope with change.

7. Appendices

Appendix 1: Wellington Water briefing to SWDC – 13 November 2019

Appendix 2: Wellington Water briefing to SWDC (powerpoint)

Contact Officer: Harry Wilson, CEO

Appendix 1

Wellington Water Briefing on South Wairarapa District Council Water Supply Matters (13 Nov. 2019)

Appendix 2

**Wellington Water Briefing Powerpoint
- Water Supply Matters (13 Nov. 2019)**