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Dear Malcolm and Sven,

QMRA for Pōrangahau and Te Paerahi (P:D.67)

Attached is the QMRA report that CHBDC have commissioned from QMRA Data Experts (QDE). Based on managing public health risks a UV disinfection system will be installed, albeit only operational for a short period of time until flows are conveyed to the proposed common land site for treatment and discharge.

QDE have considered the microbial risk to river users as a result of the current Pōrangahau wastewater treatment system river discharge. Specifically, they have considered the risk to contact recreation and eating of shellfish. Risk has been considered for a number of pathogens including adenovirus, norovirus and enterovirus.

The locations assessed are:

- at the edge of the mixing zone and approximately 200 m downstream of the Pōrangahau WWTP discharge;
- a fishing area, approximately 3 km downstream of the current discharge site;
- at the bridge with access site to river, approximately 4 km downstream of the current discharge site; and
- a shellfish gathering site, approximately 7 km downstream of the current discharge site.

The conclusions reached include:

- Risk associated with primary contact recreation (e.g. swimming) - *These results indicate a low human health risk associated with swimming due to the discharge from the pond-treated Pōrangahau WWTP.*
- Risk associated with secondary contact recreation (e.g. kayaking) - *Predicted that acute respiratory health risk would fall below the no observable adverse effects level (NOAEL) at all sites following.*
- Risk associated with consumption of raw shellfish - *Results therefore predict moderate health risks as a result of consuming raw shellfish harvested at Site 4.*

The key risk is for shellfish gathering, however as noted in the report there are a number of assumptions and a very "precautionary" approach has been taken. As we have discussed previously and highlighted in the consent application, this risk can be mitigated by the adoption of UV disinfection. However, in doing so it would be prudent to consider the wider community benefit and if needed.

The current discharge has been occurring since the community transferred to a reticulated system in the 1980s. In this time there has been no recorded or reported incident of ill health associated with the discharge.

The proposed discharge, being a continuation of the existing discharge, is only for a short time; meaning that the ongoing nature of the current discharge will soon change and ultimately cease. Based on current planning as signalled within our application and Long Term Plan 2021 consultation with the community, this is expected to be the milestone achieved in 2027.

In preparing initial budgets for changes at Pōrangahau, the District Council had allowed for minor treatment plant modifications. This included a UV disinfection. However, as the designed has evolved it is apparent that the modifications will only be for a short period of time and consequently CHBDC have been mindful of redundancy of infrastructure, and in particular spending large sums of 'upgrade' money with pending change.

The QMRA has been very helpful in acknowledging the risk, albeit potentially limited. Regardless, there would remain a risk to the community and District Council believes providing greater certainty for public health necessitates the expenditure, even for the short term.

A UV system will be installed, with the intention that it is operational within 18 months of the consent being granted. Updated consent conditions will be provided to reflect this revised treatment process.

Yours sincerely,



Darren de Klerk

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Encl.

Quantitative Microbial Risk Assessment (QMRA) of the Pōrangahau Wastewater Treatment Plant discharge - January 2022