

**Public Health South**

**Dunedin:** Private Bag 1921, Dunedin 9054  
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**Queenstown:** PO Box 2180, Wakatipu, Queenstown 9349  
Ph: 03 450 9156 Fax: 03 450 9169

Mr Stewart Burns  
Acting Chief Executive Officer  
Queenstown Lakes District Council  
Private Bag 50072  
Queenstown 9348

4 October 2012

Dear Stewart

Re: Outbreak of Gastroenteritis at Cardrona

QLDC  
05 OCT 2012  
QUEENSTOWN

This recent disease outbreak has raised some important issues about drinking water and sanitary services in the area. This serious situation has already attracted some media attention including an Australian newspaper and further interest will follow once our full outbreak report is released. I am sure that this is an issue of interest for the council's elected representatives and I would therefore welcome an opportunity to talk directly to councillors and senior council staff about the contamination in and around the Cardrona village.

Key points are that:

- There was an outbreak of acute gastroenteritis at Cardrona late in August and September 2012 involving 53 recognised cases, but likely to be many more.
- Two water supplies were found to contain the same *Norovirus* strain as that detected in faecal specimens from cases.
- Environmental sampling found evidence of *Norovirus* in the surface discharge from at least one wastewater system and also in the Cardrona River downstream of the village.
- There is evidence that the contamination from sewerage has been occurring for some time
- There was a large outbreak 6 years ago at the nearby ski resort, also caused by *Norovirus* contamination of the water supply.

I recommend that the Otago Regional Council (ORC) and Queenstown Lakes District Council (QLDC) conduct a full sanitary survey, and I understand that ORC have already started work on this. QLDC should be involved in the sanitary survey, given council responsibilities under Section 23 (b and c) of the Health Act 1956. Further information will allow greater understanding of how the contamination has been occurring and the extent of the contamination.

Meanwhile, moves have been taken to improve the safety of the water supplies and at QLDC's request, Veolia Water Services have provided assistance to the private Cardrona community water supply to address the immediate problem. No new cases of illness have been reported since the implementation of additional water treatment. However, whilst the outbreak has so far

only been linked to the consumption of water and person-to-person spread, the evidence suggests that even recreational contact with local water bodies could pose a risk to health.

Current QLDC work on future infrastructure for Cardrona appears to be geared for longer-term implementation. This now needs to be brought forward to reflect the urgency of the situation. I therefore recommend that QLDC arranges a meeting with ORC and Public Health South to address the future of infrastructure at Cardrona. Please let me know what you can arrange with respect to this.

Meanwhile, I'd like to meet with councillors to discuss the wider aspects and implications of this outbreak and I'd be grateful if you could arrange an opportunity for this as soon as possible.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Derek Bell', with a large, stylized flourish above the name.

Dr Derek Bell  
Medical Officer of Health (Otago and Southland)

Cc:

Eric Barnes, General Manager, Infrastructure Services Department, QLDC

Hamish Dobbie, CEO, Lakes Environmental

Graeme Martin, CEO, ORC

Selva Selvarajah, Director of Resource Management, ORC

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Mr Graeme Martin  
Chief Executive Officer  
Otago Regional Council  
70 Stafford St.,  
Private Bag 1954  
Dunedin 9054

4 October 2012

Dear Graeme

Re: Outbreak of Gastroenteritis at Cardrona

You may already be aware of this recent outbreak. Key points for your information are that:

- There was an outbreak of acute gastroenteritis at Cardrona late in August and September 2012 involving 53 recognised cases, but likely to be many more.
- Two water supplies were found to contain the same *Norovirus* strain as that detected in faecal specimens from cases.
- Environmental sampling found evidence of *Norovirus* in the surface discharge from at least one wastewater system and also in the Cardrona River downstream of the village.
- There is evidence that the contamination from sewerage has been occurring for some time
- There was a large outbreak 6 years ago at the nearby ski resort, also caused by *Norovirus* contamination of the water supply.

Moves have been taken to improve the treatment of the water supplies and there have been no new cases of disease reported. However, we are concerned at the evidence of contamination of the environment arising from at least one of the waste-water systems in Cardrona. Whilst this has affected human health through drinking water, the wider contamination could also affect health through recreational contact with water. The contamination reaches the river and therefore there are potential risks downstream.

I recommend that Otago Regional Council and Queenstown Lakes District Council conduct a detailed investigation to further determine the source(s) and extent of the contamination. This would need to include sampling of the all wastewater systems in the village, consideration of blocked or leaking pipes, investigation of the water table, details of water-take consents, soil drainage characteristics, river water quality upstream and downstream of the village and compliance with consent conditions. Indeed, this would need to be a comprehensive sanitary survey.

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To this end, it may be useful for you to liaise with the Christchurch ESR Water and Wastewater team led by John Wright with respect to their research on the movement of bacteria and viruses through soil. In addition, Wendy Williamson, the senior environmental health scientist at ESR (Christchurch) is happy to discuss aspects of the viral contamination and laboratory testing with you or your team.

I am also asking QLDC to arrange a meeting with ORC and Public Health South to discuss the best course of action to address the future of infrastructure and services at Cardrona. I hope that that will occur soon.

Please find attached copies of monitoring results and a map produced by Nichola Evans of QLDC. The map describes the water and waste water systems and the samplings points.

I look forward to receiving a copy of the Benbrae discharge consent and conditions and any audit reports from Selva Selvarajah.

Yours sincerely

A handwritten signature in black ink, appearing to read 'D Bell', with a large, stylized flourish above the letters.

Dr Derek Bell  
Medical Officer of Health (Otago and Southland)

Cc:

Selva Selvarajah, Director of Resource Management, ORC  
Stewart Burns, Acting CEO, Queenstown Lakes District Council.  
Eric Barnes, General Manager, Infrastructure Services Department, QLDC  
Hamish Dobbie, CEO, Lakes Environmental