

**From:** [Stephen West](#)  
**To:** ["cromel@netspeed.net.nz"](mailto:cromel@netspeed.net.nz)  
**Subject:** Water take application APP-20181648  
**Date:** Friday, 12 July 2019 11:35:00 AM

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Hi Mr Kirker.

Sorry for the delay. I had to wait for the scientists to confirm some matters.

I've had a look through the documentation and I think that, while some matters have been agreed, parts of the September 2018 information request still require response. The following lists the various questions (in black) from the information request, and I've identified matters that are agreed in green, matters that have been responded to, but which we don't necessarily agree, in light blue, and the matters that haven't been provided in red. I've also suggested an additional matter (in orange) that I think should be covered because I think that PDP misunderstood how interference effects should be considered.

1. Clarify why you have indicated that the Cromel Stream is an ephemeral river rather than an intermittent or permanent river.  
[You have responded to this question. We do not agree that it is ephemeral, but you have provided a response.](#)
2. Provide an estimation of the natural pre-allocation Q95 flow in the Cromel Stream in the vicinity of the wells; where 'Q95' represents the naturalised flow that is exceeded 95% of the time during the year.
3. Identify the 30% Q95 flow in the Cromel Stream.
4. Provide an estimate of the existing allocation from the Cromel Stream and how this relates to 30% of Q95. Provide information on how this estimate was derived.
5. Identify a monitoring site and the flow/level equivalent to the 30% Q95 flow in the Cromel Stream; this is so minimum flow limits can be applied.

Questions 2, 3, 4 and 5, are resolved. Our Environment Scientist – Water Resources, Lawrence Kees, has agreed with the Water Services Leader at PDP Ltd, Bas Veendrick, that:

- MALF of the Cromel Stream at Selbie Road is 338 l/s
- 30% of MALF is 101.4 l/s at Selbie Road
- 80 l/s is allocated from the Cromel Stream (so the remainder is 21.4 l/s at Selbie Road)
- The minimum flow that will be applied is 387 l/s at the Cromel Stream at Selbie Road. That is the Q95 flow.
- Q95 of the Cromel Stream at the Irthing confluence is 81 l/s
- **24.3 l/s** is available for allocation from the Cromel Stream at the Irthing confluence (based on 30% of the Q95).

- The Cromel Stream at Selbie Road is the appropriate flow monitoring site for managing the stream depletion effects.

6. Provide estimates of stream depletion effects (litres per second) on the Cromel Stream for each well based on testing carried out in accordance with Appendix L.1 of the proposed Water & Land Plan. This is so we can understand the actual stream depletion occurring from the proposed take from each bore.

This information has not been provided. Please provide data from any new tests and analyses.

7. An estimate of the effect of the abstraction (particularly from the moderately-connected wells) on the frequency and duration of periods of intermittent flow in the Cromel Stream.

This information has not been provided.

8. If the abstraction will increase either the frequency or duration of intermittent flow in the Cromel Stream, please assess the effect on:

- the habitat of trout and indigenous fish species
- the cultural & spiritual values of tangata whenua
- the reliability of supply for lawful existing users of water from the stream

This information has not been provided.

I would suggest that another matter needs to be confirmed, based on the updated pump test data: the percentage drawdown effect on nearby neighbours bores.

Section 6.2 of the application discusses the drawdown effect. Maybe I'm misreading that section, but I think that it makes the assessment more complicated than it should be. The effect should be assessed on the drawdown effect as if each of those neighbouring bores fully penetrates the aquifer. So if the bore is only 1.5 metres deep, but the saturated thickness of the aquifer is 4.5 metres, a drawdown effect of 1 metre is 22%, not 67%. In any case, I think that it needs reassessed in light of the new pump test information.

An important matter to note is that Lawrence agrees that there is 24.3 l/s available for allocation from the stream. If the stream depletion effects of the whole take, calculated from the new pump test information, fit with that then I would not expect the other matters to be a significant hurdle for the consent application.

Regards,

Stephen