

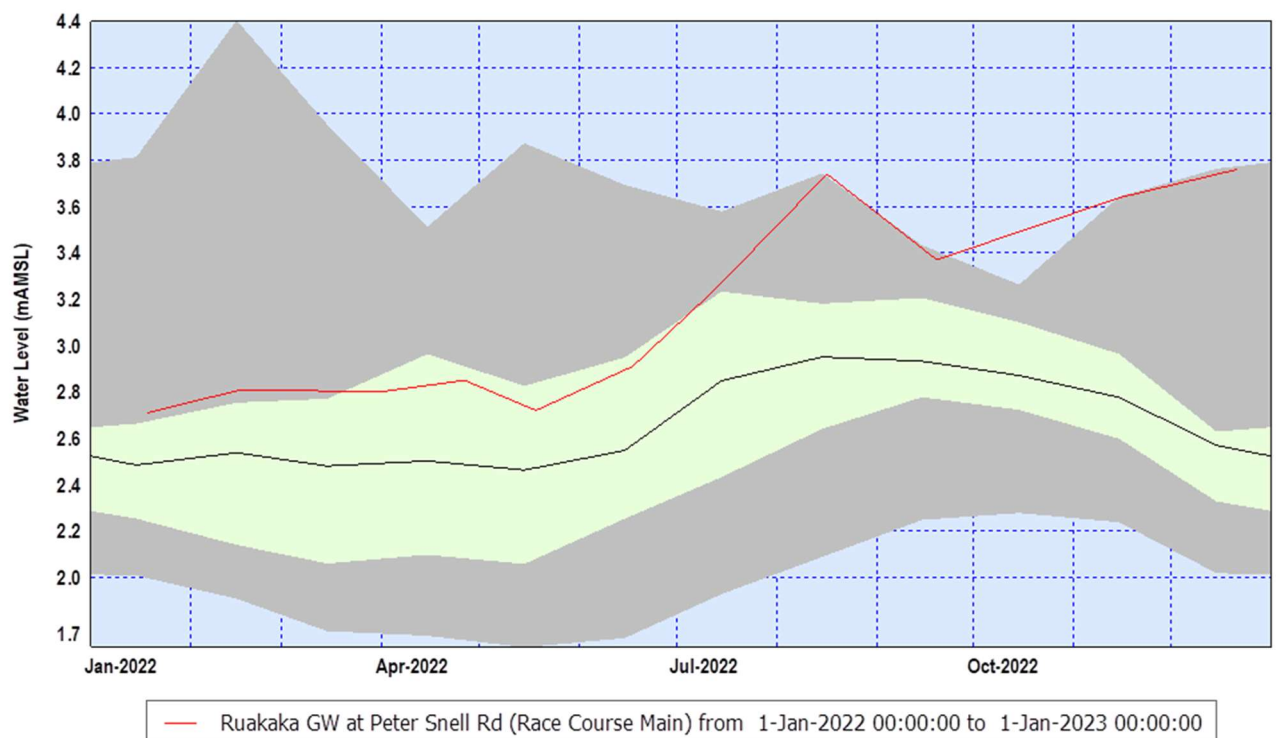
From: Hagen Robertson <hagenr@nrc.govt.nz>
Sent: Tuesday, August 6, 2024 12:02 PM
To: Stuart Savill <StuartS@nrc.govt.nz>
Subject: RE: Meridian - Question from Commissioners

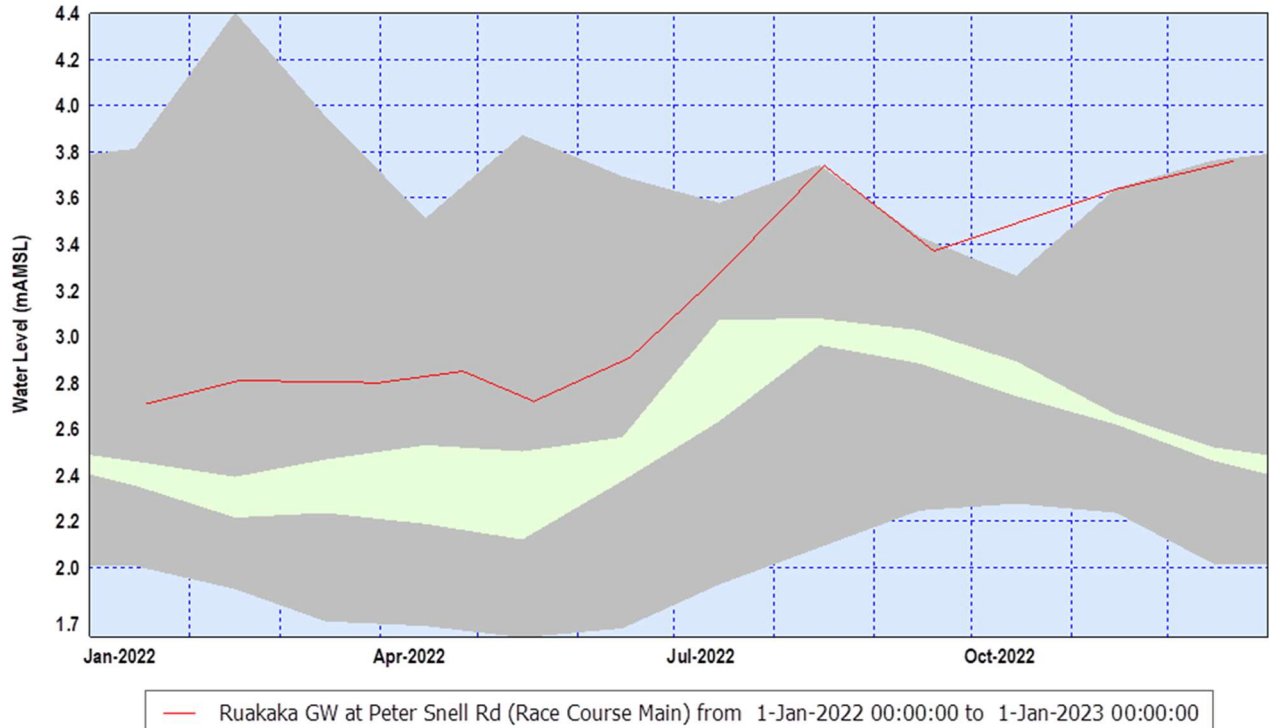
Kia ora Stuart

The average used in my memo simply refers to the 50th percentile for the period. References to “above and below average” simply mean above or below this value and have been represented as a percentage of the average in the table.

The NRC Climate Hydrology Report refers to “normal” as being the 40th to 60th percentile. This is meant to be a broad indication of the situation, not a detailed statistical analysis. Terming this small section of the data "normal" can be misleading as it only represents 20% of the data. The plots in the memo have an envelope (pale green) that represents the middle 50% of values (i.e. 25th to 75th percentile), half of the data falls within this range.

I have provided two plots below to demonstrate the limitations of the 40th to 60th percentile range used as “normal” in the Beca report (7 March, 2024). The first plot is a duplicate of the 2022-year plot from my memo (with a 25th to 75th percentile envelope, pale green), the second plot has an envelope (pale green) covering the 40th to 60th percentile or “normal” range in the NRC Climate Hydrology Report.





I hope this answers the question.

Ngā mihi

Hagen Robertson

Resource Scientist - Groundwater

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-----Original Message-----

From: Stuart Savill <StuartS@nrc.govt.nz>
Sent: Monday, August 5, 2024 2:30 PM
To: Hagen Robertson <hagenr@nrc.govt.nz>
Subject: Meridian - Question from Commissioners

Hi Hagen

Are you able to answer the question below from Commissioners please?

Call me to discuss if need to.

Ngā mihi

Stuart Savill
Consents Manager
Northland Regional Council » Te Kaunihera ā rohe o Te Taitokerau

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-----Original Message-----

From: Alister Hartstone <alister@setconsulting.co.nz>
Sent: Monday, August 5, 2024 2:26 PM
To: Stuart Savill <StuartS@nrc.govt.nz>
Subject: Meridian - Question from Commissioners

Hi Stu

Are you able to provide a response to a question asked by Cmr Hill regarding hydrology. Evidence refers to the NRC Climate Hydrology Report referencing ground water levels as 'normal' and 'non-normal'. Do the Climate Hydrology reports use the same percentiles for considering above and below ('normal'

and 'non-normal') average ground water levels as used in the Hydrology memo attached to the Section 42A report?

Thanks

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