



MEMORANDUM

FILE: OMS 10 17

DATE: 19th January 2010

TO: One Plan Hearing Chairperson

FROM: Kate McArthur

SUBJECT: **WRITTEN STATEMENT OF POINTS PRESENTED ON JAN 18TH TO THE WATER HEARING PANEL REGARDING DISSOLVED OXYGEN DATA AND THE REVISED EVIDENCE OF DR ROGER YOUNG**

Dear Ms Allin,

Please find below a written statement of the points presented by myself to the Water Hearing Panel on Monday 18th January 2010, regarding errors in the dissolved oxygen data record and the subsequent revised evidence of Dr Roger Young on ecosystem metabolism.

- Horizons provided continuous dissolved oxygen (DO) concentration (mg/L) and DO saturation (%) data to Cawthron for the Ecosystem Metabolism project.
- Through a fault in the software (which has since been resolved) the DO saturation data, from which Dr Young calculated the Ecosystem Metabolism indicators, was incorrect.
- A review of the data also showed there had been some flood-associated deterioration of the DO record for the Manawatu at Hopelands site during the winter of 2007.
- Dr Young then recalculated DO saturation using the correct DO concentration and temperature data; excluding the Hopelands August 2007 record.
- Dr Young used this corrected dataset to re-analyse one year of data to determine the Ecosystem Metabolism indicators as reported in his revised section 42A evidence.
- Time constraints prevented Dr Young re-analysing the entire record originally presented in his evidence.
- The conclusions of Dr Young's evidence remain largely unchanged and are supported by the other aquatic ecosystem health and water quality evidence provided by Horizons staff and external experts on behalf of Horizons.
- Development of the use of continuous DO data to determine Ecosystem Metabolism continues to improve and evolve in the way that any new science development should.
- Horizons is collaborating with a number of experts (from Cawthron and NIWA) to achieve this.

Should you require any further information regarding this matter please don't hesitate to contact me.

Regards

Kate McArthur
Senior Scientist – Water Quality