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MEMORANDUM

June 29, 1999

55-2912-01 (64)

To: Elizabeth Leavitt

From: Ken Ludwa

Re: Review of Draft De-Icing Dissolved Oxygen Report

Parametrix has reviewed the Draft De-Icing Dissolved Oxygen Report, and submits the following comments:

- The report should be simplified to clearly state that there is no evidence that state water quality standards for DO are violated in Miller Creek and Des Moines Creek. There is much focus on relatively minor details. The report's emphasis should be on the overall non-effect in Miller Creek and Des Moines Creek.
- As a point of reference, both the executive summary and the introduction should quote the June 9, 1998 letter from Lisa Austin of Ecology, stating "Unless the Port can show that the dissolved oxygen (DO) *in Miller and Des Moines Creeks* is not lowered below the water quality standard (9.5 mg/L) by the washoff of acetate from the runways and taxiways, the first flush from the runways and taxiways will have to be collected and treated." Start with the hypothesis that DO in the streams is affected by de-icing chemicals. The report should subsequently show that there is no significant evidence that this hypothesis is correct; that is, the state water quality standard for DO was not violated in the creeks following the de-icing events (although the letter states the 9.5-mg/L standard for Class AA streams, the report should use the 8-mg/L standard for Class A).
- Contrary to the current position stated in the report, it does not appear that the data conclusively demonstrates that de-icing chemicals do *not* affect DO in the NW Ponds and Lake Reba. However, the report should use the data, coupled with a brief (possibly bulleted) discussion of factors that can affect DO in standing water, to demonstrate that there is no conclusive evidence that there *is* an effect due to de-icing chemicals.
- Most of the interpretation and analysis should be moved to the appendix, and described only briefly in the main body of the report.
- Where possible, statistical analyses should be used to support the conclusions or to reject hypotheses. For example, the relationship between precipitation and DO should be explicitly examined, and the *additional* effects of de-icing chemicals needs to be examined as well. The extensive monitoring data suggest that time series analysis methods may be an appropriate means of investigating these relationships simultaneously. Otherwise, the effects of precipitation and de-icing chemical are unlikely to be distinguishable.

cc: Paul Fendt BF
Linda Logan
Tom Hubbard
Scott Tobiason
Barbara Hinkle

Bmps

Next [illegible] [illegible]

BMPs change

D.C. [illegible] comments

Bmps for new [illegible]