

Interactive comment on “Enrichment of trace metals from acid sulphate soils in sediments of the Kvarken Archipelago, eastern Gulf of Bothnia, Baltic Sea” by Joonas J. Virtasalo et al.

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Response to Short Comment by Anders Widerlund

We thank Anders Widerlund for insightful and constructive comments that help improve the manuscript. His main concerns will be addressed as follows.

Analytical precision: We have done replicate analyses of several samples, and will add a statement about experimental precision in the revised manuscript.

We will elaborate the significance of leaching from acid sulphate soils since the 1960s as the primary source of the studied metals, instead of e.g. industrial sources. This is

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mentioned in the final sentence of Introduction, but it obviously needs to be elaborated more in the revised manuscript.

We will elaborate the inferred relationship between trace metals from acid sulphate soils, 2-6 μm grain size fraction, and C&N in the revised manuscript. The statistical relationship is shown by two independent methods. However, we agree with Widerlund that the statistical relationship rather “suggests” than “indicates” a causal correlation. At least until additional data is available.

We will correct the title of the Supplementary file as correctly pointed out by Widerlund.

We will change the colour of “contained dark red dots” in Figure 5 and in the Supplement, as Widerlund suggests.

We will add sedimentation rate for each core in Table 1, as Widerlund suggests.

The rest of Widerlund’s comments are justified but comparably minor, and can be fully addressed in the revised manuscript.

Kind regards on behalf of all co-authors,

Joonas Virtasalo, Geological Survey of Finland

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