**Supplementary Information**

**Table S1** **Method detection limits (MDLs) and estimated relative standard deviation (RSD).**

|  |  |  |
| --- | --- | --- |
| **Solute** | **\*MDL** | **\*\*RSD** |
| Ca, ppb | 21.21 | < 3% |
| Cl-, μmol/L | 0.07 | < 5% |
| Cu, ppb | 0.15 | < 3% |
| DIC, μmol/L | 73.3 | < 3% |
| Fe, ppb | 0.85 | < 3% |
| K, ppb | 4.82 | < 3% |
| Mg, ppb | 7.08 | < 3% |
| Mo, ppb | 0.13 | < 3% |
| Na, ppb | 2.48 | < 3% |
| NO3-, μmol/L | 0.11 | < 5% |
| DOC, μmol/L | 19.6 | < 3% |
| P, ppb | 25.96 | < 3% |
| Si, ppb | 14.43 | < 3% |
| SO42-, μmol/L | 0.16 | < 5% |

\* The MDLs for ICP-MS and DIC and DOC were determined using the US EPA recommended method: Definition and procedures for the determination of the method detection limit, revision 2 (2016). The MDLs for anions are cited from Thermo Fisher Scientific Application Note 154: Determination of inorganic anions in environmental waters using a hydroxide-selective column, Brian De Borba and Jeff Rohrer, Thermo Fisher Scientific, Sunnyvale, CA, USA.

\*\* Generally, the RSD or uncertainty for ICP-MS is < 3% based on 5 replicate measurements for concentrations higher than MDLs. The DIC and DOC have a RSD < 3% for concentrations higher than MDLs based on 3-5 measurements. For measurement of anions (Cl-, NO3- and SO42), it generally has a RSD < 5% for concentrations higher than MDLs.