

# Supplementary information for Removal of organotin compounds and metals from Swedish marine sediment using Fenton's reagent and electrochemical treatment

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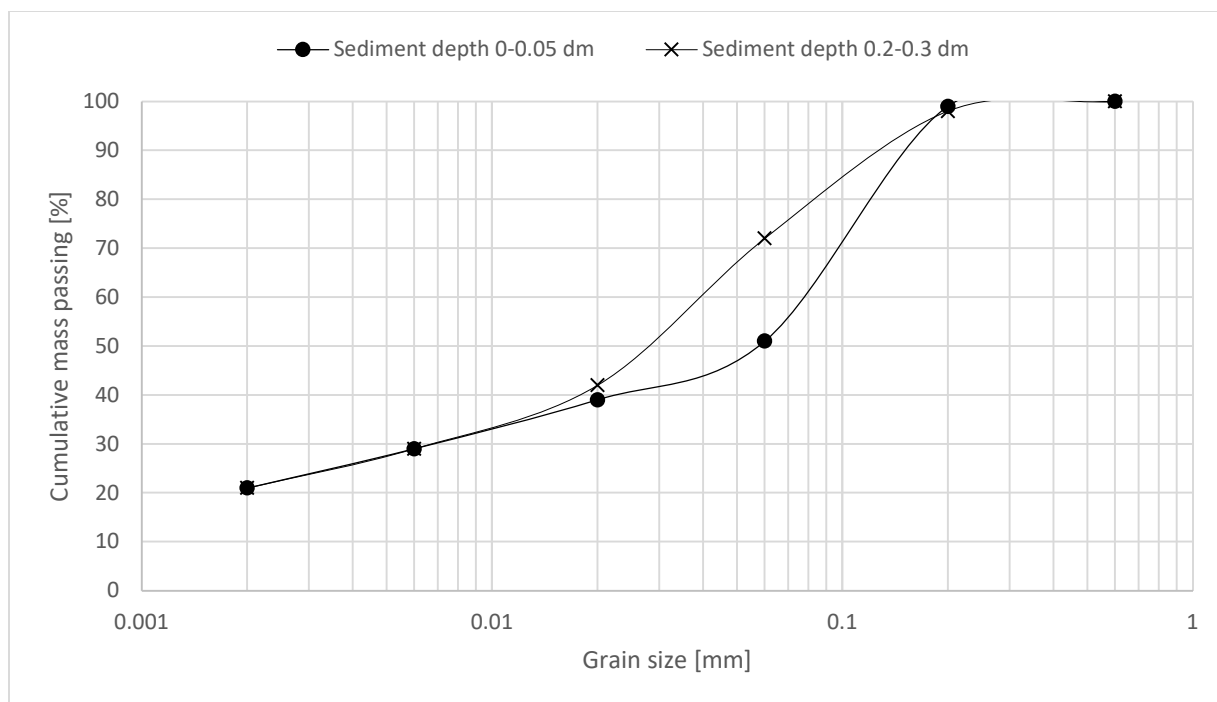


Figure A1 Sem-log cumulative grain size distribution curve for two sediment samples sampled at different depth before the dredging.

Table A1 Metal content [mg/kg DW] and standard deviation (STD) in original, electrochemically treated (Electro) and Fenton's reagent treated (Fenton) sediment. \*Fe was only analyzed in spiked samples.

| Metals<br>[mg/kg DW] | Original samples |       | Electro |      | Fenton  |      |
|----------------------|------------------|-------|---------|------|---------|------|
|                      | Average          | STD   | Average | STD  | Average | STD  |
| As                   | 4.6              | 0.1   | 4.9     | 0.9  | 3.9     | 1.1  |
| Ba                   | 61.0             | 8.1   | 54.0    | 7.8  | 47.0    | 9.9  |
| Cd                   | 0.3              | 0.0   | 0.2     | 0.1  | 0.1     | 0.0  |
| Co                   | 7.3              | 0.4   | 7.6     | 2.3  | 5.7     | 1.5  |
| Cr                   | 28.0             | 4.0   | 25.0    | 4.4  | 20.0    | 3.5  |
| Cu                   | 31.0             | 4.9   | 27.0    | 6.1  | 17.0    | 4.8  |
| Fe*                  | 17,500           | 2,800 | -       | -    | -       | -    |
| Hg                   | 0.3              | 0.0   | 0.3     | 0.0  | 0.3     | 0.0  |
| Ni                   | 14.0             | 0.9   | 13.0    | 2.9  | 10.0    | 1.7  |
| Pb                   | 23.0             | 2.1   | 20.0    | 4.1  | 19.0    | 4.5  |
| V                    | 38.0             | 2.5   | 37.0    | 5.8  | 28.0    | 6.5  |
| Zn                   | 120.0            | 9.3   | 110.0   | 26.0 | 74.0    | 21.0 |
| Ag                   | 0.2              | 0.1   | 0.2     | 0.0  | 0.2     | 0.0  |
| Mo                   | 1.8              | 0.1   | 1.3     | 0.4  | 1.4     | 0.2  |
| Sb                   | 0.6              | 0.1   | 0.4     | 0.1  | 0.4     | 0.1  |

Table A2 TBT, DBT and MBT concentrations [ng/L] in leachates after treatment with Fenton's reagent.

| Experiment | TBT<br>ng/L | DBT<br>ng/L | MBT<br>ng/L |
|------------|-------------|-------------|-------------|
| FS(0.01;4) | 880         | 3,000       | 1,400       |
| FS(0.2;7)  | 28,000      | 5,700       | 1,700       |
| FS(1;2)    | 320         | 360         | 220         |
| FS(5;5)    | 5,100       | 12,000      | 810         |
| FS(7;5)    | 920         | 4,300       | 1,500       |

Table A3 TBT, DBT and MBT concentrations [ng/L] in leachates after electrochemical treatment.

| Experiment | TBT<br>ng/L | DBT<br>ng/L | MBT<br>ng/L |
|------------|-------------|-------------|-------------|
| ES(5V)     | 2,500       | 690         | 3,300       |
| ES(21V)    | 24,000      | 25,000      | 23,000      |
| ES(23V)    | 36,000      | 52,000      | 42,000      |
| EO(0V)     | 8.6         | 2           | 3.9         |
| EO(15V)    | 11          | 16          | 8.6         |
| EO(19V)    | 11          | 4.1         | 2.2         |
| EO(24V)    | 1.7         | 26          | 43          |

Table A4 TBT, DBT and MBT concentrations [ng/L] in spiked water after electrochemical treatment and in blanks (not electrolyzed reference samples).

| Experiment                  | TBT<br>ng/L | DBT<br>ng/L | MBT<br>ng/L |
|-----------------------------|-------------|-------------|-------------|
| Saline water                | <20         | <100        | <100        |
| Saline water blank          | 650         | <100        | <100        |
| Slightly saline water       | <20         | <100        | <100        |
| Slightly saline water blank | 619         | <100        | <100        |