**SUPPLEMENTARY INFORMATION**

**Archaea dominate the microbial community in an ecosystem with low-to-moderate temperature and extreme acidity**

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**Figure S1 (A-C).** The pit pond (A) and mine water flow (B) sites are separated by approximately 7-8 m of copper-containing sulfidic deposits (C). The acidic water from the pond (pH 1.74, Eh +581 mV) flows through these deposits and emerges as surface water flow. Samples were taken from the water (SW) and sediment (SS) of the stream.

Pit pond

Mine water flow

= Copper containing sulfidic deposits

C.

A.

B.

LW

SW

SS



**Figure S2.** **Shannon index for the sediment and water microbial communities**,

calculated with Phyloseq package (McMurdie & Holmes, 2013).



**Figure S3. Rarefaction plot and species richness calculated in GraftM from the taxonomic annotation of the Parys Mountain metagenome sequencing data.** Alpha-diversity Shannon and Simpson’s indices are shown in the figure. Both, rarefaction and diversity indexes were calculated under R environment using *vegan* package.

**Table S1. Soil pore water chemistry for the sediment and for the overlying surface water for the acidic stream of Parys Mt.** All values are expressed in mg l-1 and represent means ± SEM (*n* = 3).

|  |  |  |  |
| --- | --- | --- | --- |
|   |  Surface water |  | Sediment pore water |
| Ca  | 100.9 | ± 1.2 |  | 105.4 | ± 3.7 |
| Na | 37.0 | ± 0.2 |  | 99.8 | ± 14.0 |
| K | 4.9 | ± 0.3 |  | 44.0 | ± 41.2 |
| Mg | 93.0 | ± 18.6 |  | 121.1 | ± 6.3 |
| Fe | 1328 | ± 1 |  | 1863 | ± 36 |
| Cu | 90.4 | ± 0.2 |  | 49.7 | ± 2.4 |
| Zn | 94.7 | ± 0.1 |  | 105.7 | ± 6.7 |
| Pb | 5.7 | ± 0.1 |  | 12.1 | ± 0.5 |
| Ni | 0.24 | ± 0.00 |  | 0.43 | ± 0.05 |

**References**

McMurdie PJ, Holmes S. phyloseq: an R package for reproducible interactive analysis and graphics of microbiome census data. PLoS One*.*2013*;*8(4):e61217.