Supporting information

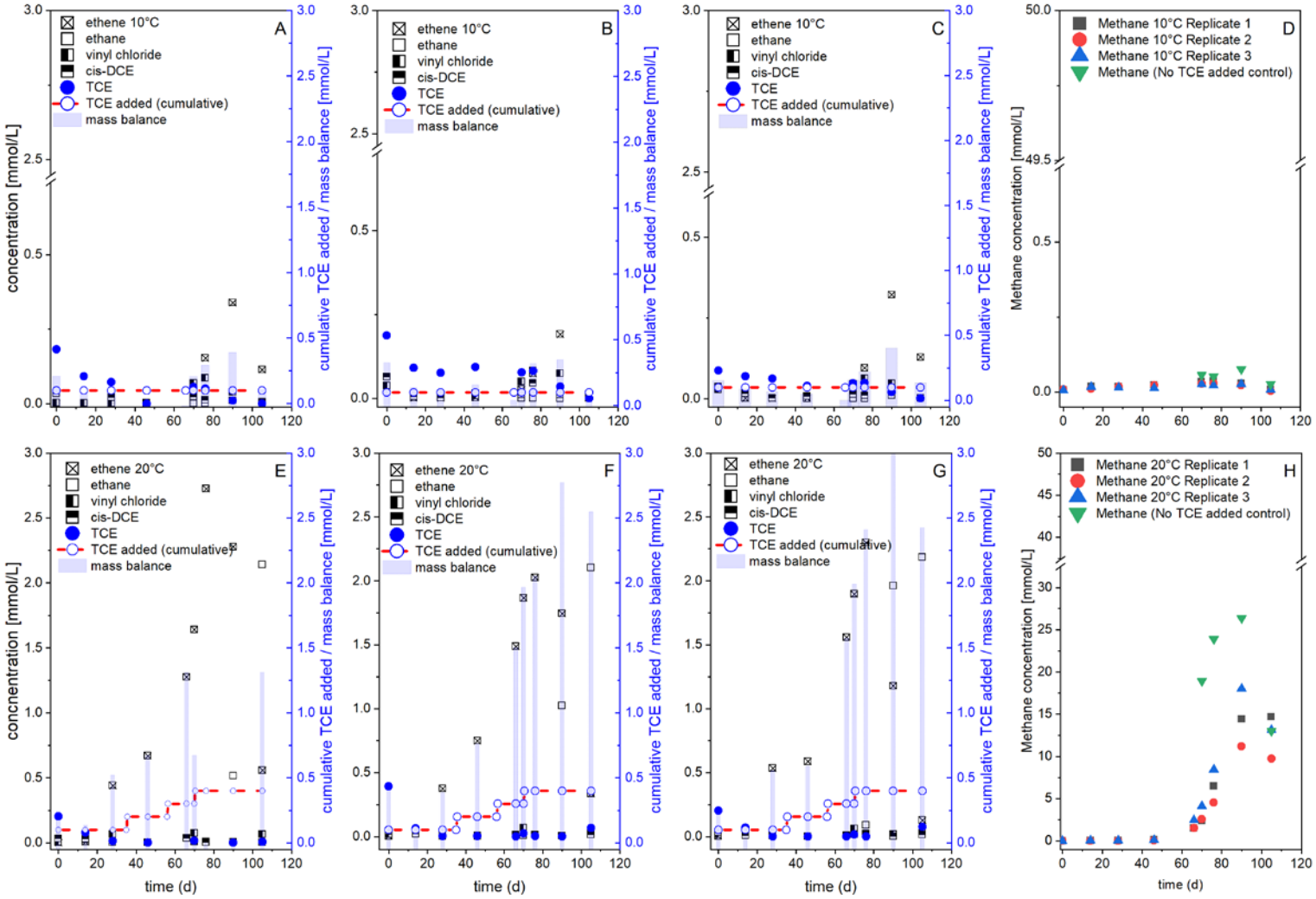

Figure S1 Representative profiles for TCE dechlorination to ethene of 10°C triplicates (A, B & C) and methanogenesis (D); and corresponding 20°C triplicates (E, F, G) and methanogenesis (H). Data for 20°C replicate 1 (E & H) are shown in the main text. For illustration, only three of five replicates are presented per temperature.

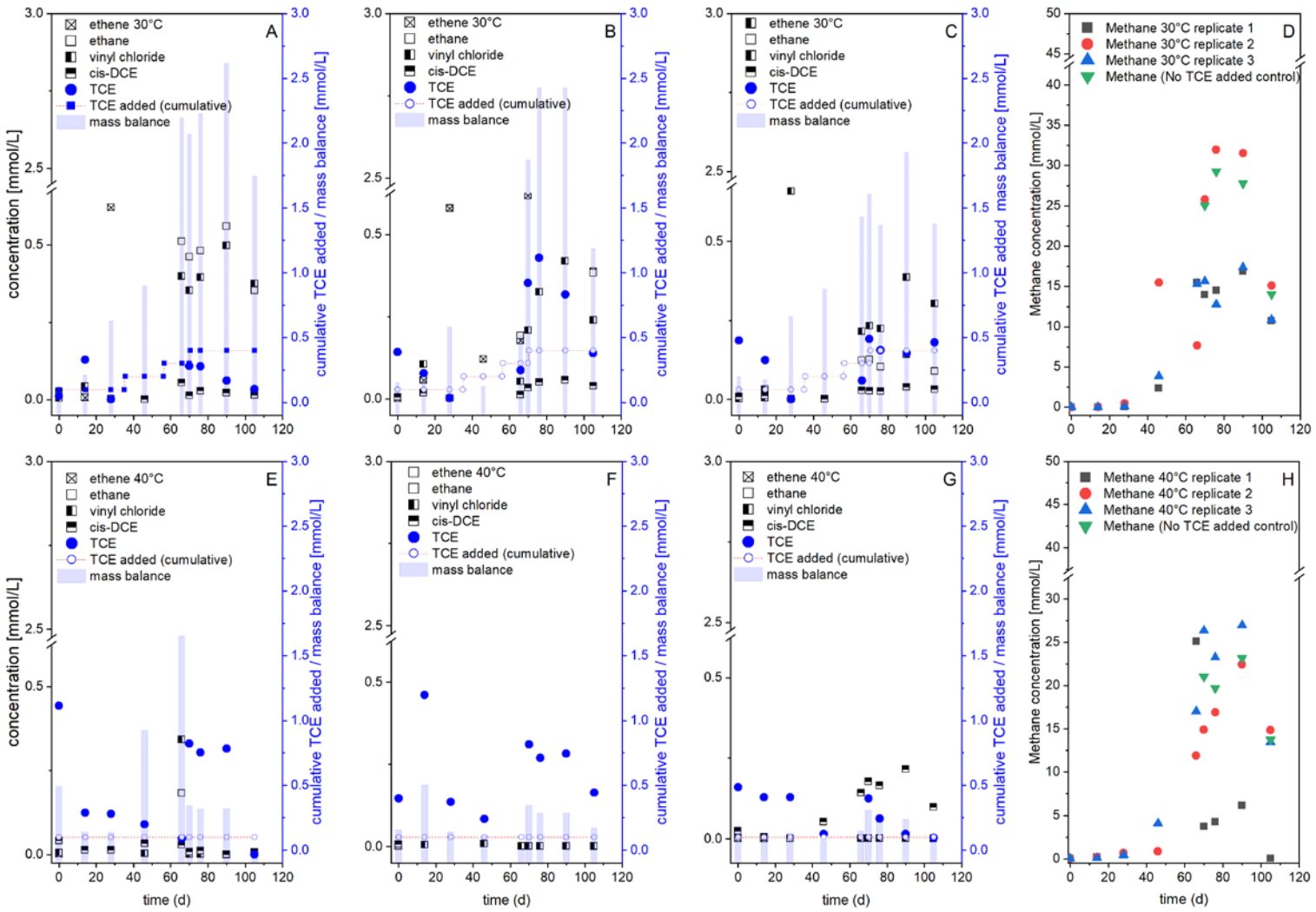

Figure S2 Representative profiles for TCE dechlorination to ethene of 30°C triplicates (A, B & C) and methanogenesis (D); and corresponding 40°C triplicates (E, F, G) and methanogenesis (H). Data for a representative replicate of 30°C (B & D) and 40°C (G & H) are shown in the main text. For illustration, only three of five replicates are presented per temperature.

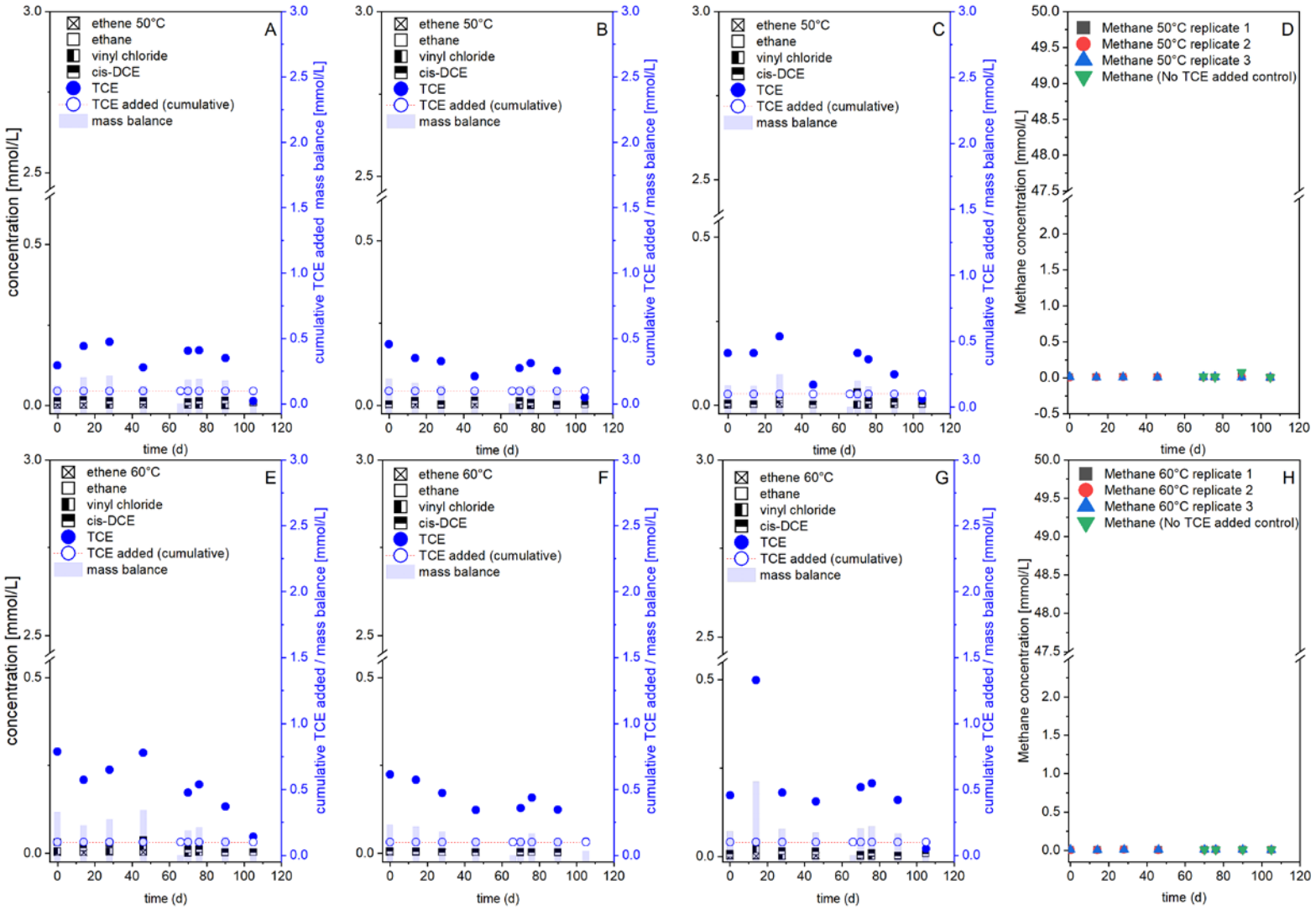

Figure S3 Representative profiles for TCE dechlorination to ethene of 50°C triplicates (A, B & C) and methanogenesis (D); and corresponding 50°C triplicates (E, F, G) and methanogenesis (H). For illustration, only three of five replicates are presented per temperature.

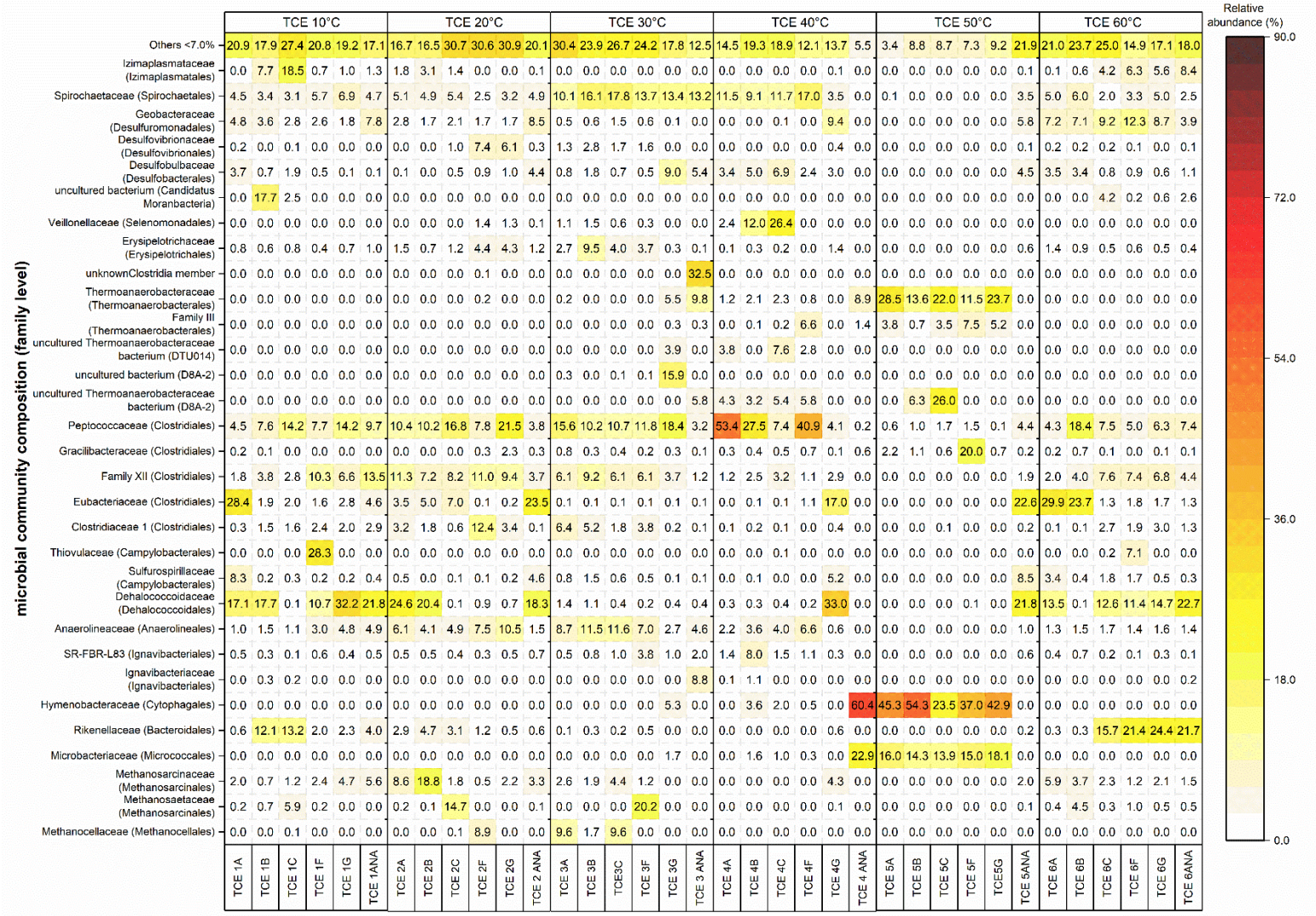

Figure S4. Microbial community compositions in the replicates of each setup incubated at 10-60°C at the family level. All sequences reads were analysed simultaneously and filtered minimally to retain readability. Phylotypes with abundance <7.0 % and present only in certain replicates were filtered out and summed up as 'others' and phylotypes observed in a majority of the setups were shown. Replicates in 50°C and 60°C were sequenced although no activity was observed in these setups.

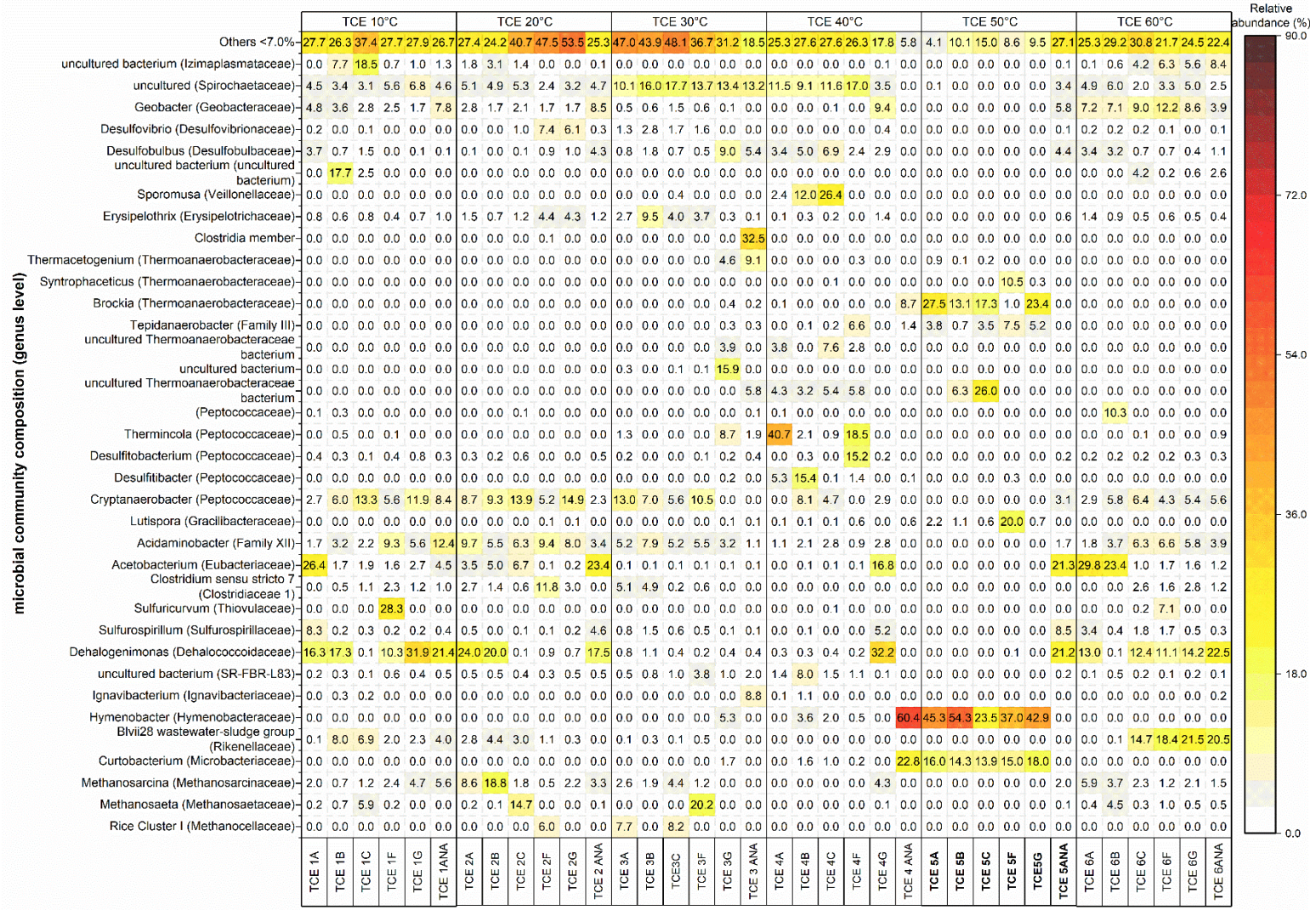

Figure S5. Microbial community compositions in setups incubated at 10-60°C at the genus level. Replicates in 50°C and 60°C were sequenced although no activity was observed in these setups. All sequences reads were analysed simultaneously and filtered minimally to retain readability. Phylotypes with abundance <7.0 % and present only in certain replicates were filtered out and summed up as 'others' and phylotypes observed in a majority of the setups were shown.

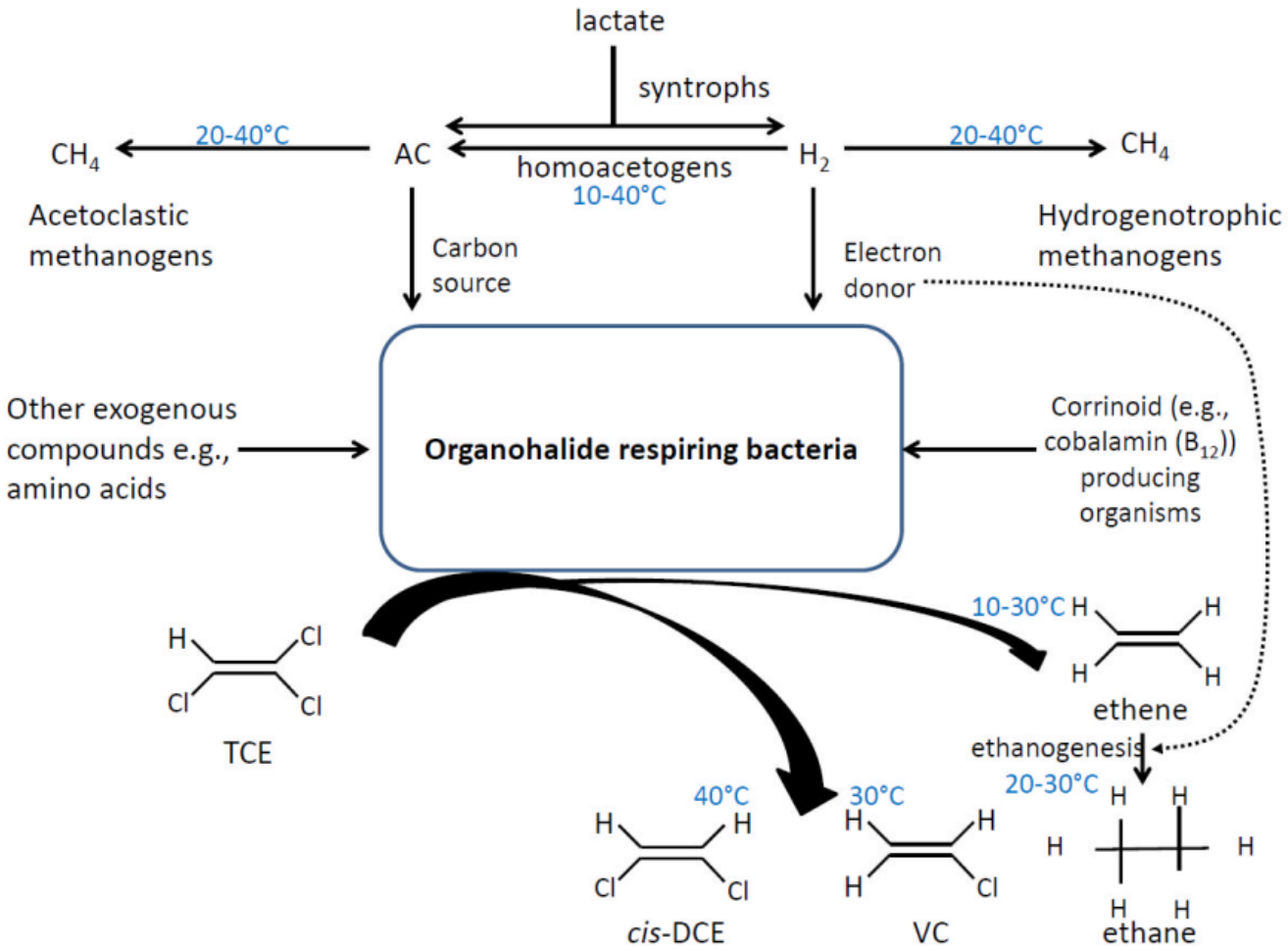

Figure S6: Scheme illustrating the putative reactions triggered by the addition of lactate and TCE and the potential exogenous compounds contributed to by other microorganisms in the sediments, adapted from (Stenuit and Agathos, 2015). Temperatures (in blue) added were inferred based on our experimental observations Legend: AC (acetate); CH_4 (methane); H_2 (hydrogen).

Reference

STENUIT, B. & AGATHOS, S. N. 2015. Deciphering microbial community robustness through synthetic ecology and molecular systems synecology. *Curr Opin Biotechnol,* 33**,** 305-17.