## **Description of Additional Supplementary Files**

File Name: Supplementary Data 1

Description: Summary of biochemical transformation analyses inferred from FTICR-MS data using

peaks unique to the river or hyporheic zone datasets.

File Name: Supplementary Data 2

Description: Summary of biochemical transformation analyses inferred from FTICR-MS data using

all peaks in the river or hyporheic zone datasets.

File Name: Supplementary Data 3

Description: Aqueous data used in mixing model analyses, and Gibbs free energy analyses.