Enclosed in this file is the python code and associated Excel spreadsheets for the submission to *GRL* by Katchinoff et al., 2021 entitled "Seawater chemistry and hydrothermal controls on the Cenozoic osmium cycle."

The Excel spreadsheet titled “Ca\_SO4\_data\_compilation\_Submission” contains seawater chemistry data from: Lowenstein TK, Hardie LA, Timofeef MN, & Demicco RV (2003) Secular variation in seawater chemistry and the origin of calcium chloride basinal brines. Geology 31:857-860.

The Excel spreadsheet titled “Fe\_Os\_GWB\_Compilation\_Submission” contains the Geochemists Workbench modeling output from this study.

The python code supplied will run successfully to present the model results shown in Fig. 3 of the main text of the paper submitted. To run the code, download the provided file in its entirety, and run the python code using the python interpreter of your choice. The output should be an image similar to Fig. 3 of the main text of the paper submitted. Note, any text within the python code that follows a hash symbol (#) is an annotation and is included in the code to clarify the code.

Python code was written by J. A. R. Katchinoff, and can be contacted at [Joachim.katchinoff@yale.edu](mailto:Joachim.katchinoff@yale.edu)