

Description of Additional Supplementary Files

File Name: Supplementary Data 1

Description: Biomarker concentrations from Site 1258, Demerara Rise. Free base- (FB) chlorins, FB-porphyrins, metalloporphyrins, obGDGTs, DAGEs, and ext. Archaeols are summed concentrations of multiple compounds shown in Fig. S2. Horizontal black lines bracket the OAE 2 interval.

File Name: Supplementary Data 2

Description: Metalloporphyrin concentrations and selected metal abundances from Site 1258, Demerara Rise. Metalloporphyrins, and metal-specific porphyrins (e.g. VO-porphyrins), are summed concentrations of multiple compounds shown in Fig. S2. Metal abundances are from previous work referenced in the main text and supplementary information. Horizontal black lines bracket the OAE 2 interval.

File Name: Supplementary Data 3

Description: Miscellaneous geochemical parameters calculated from quantified biomarker concentrations. Calculated SSTs, BIT indices, and brGDGT methylation indices were generated using published methods referenced in the main text and supplementary information. Horizontal black lines bracket the OAE 2 interval.