



Figure S1: Calculation of  $\delta^{15}\text{NO}_3^-$  source signatures based on equations of the linear regression gained by the direct comparison of  $\delta^{15}\text{N}_{\text{Bulk}}$  versus  $\delta^{30}\text{Si}_{\text{BSi}}$  for the CWP (a-c), the LIA (arid; d, e) and LIA (humid). Black lines indicate the estimated linear regression. Dashed lines indicate the resulting 1:1 utilization line.