

Figure 2: Distribution of median historic potassium concentrations in wells included in GAMA data set (CSWRCB), scaled by concentration quantiles. Map generated with Quantum GIS (<http://www.qgis.org/en/docs/index.html>).

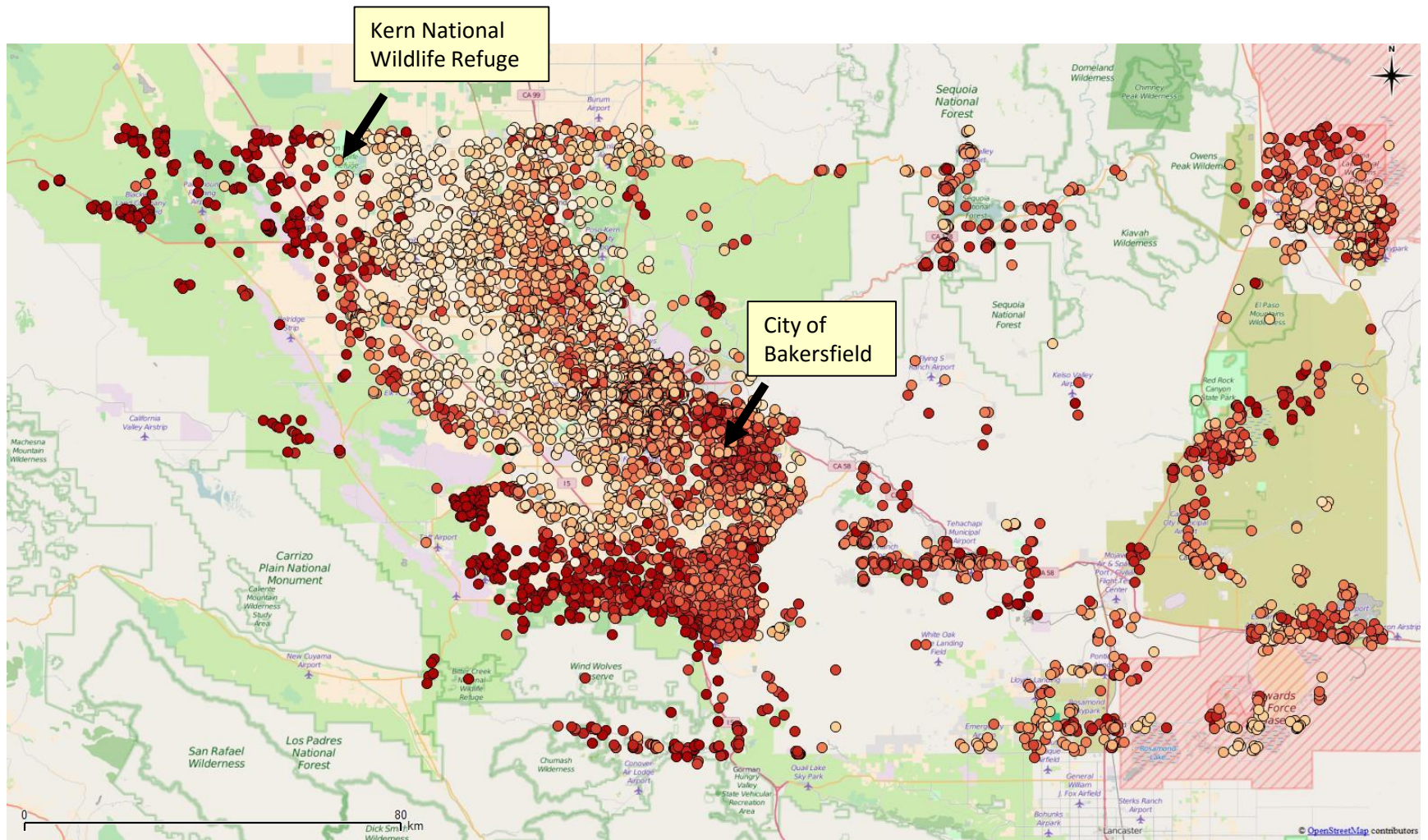


Figure 3: Distribution of median historic magnesium concentrations in wells included in GAMA data set (CSWRCB), scaled by concentration quantiles. Map generated with Quantum GIS (<http://www.qgis.org/en/docs/index.html>).

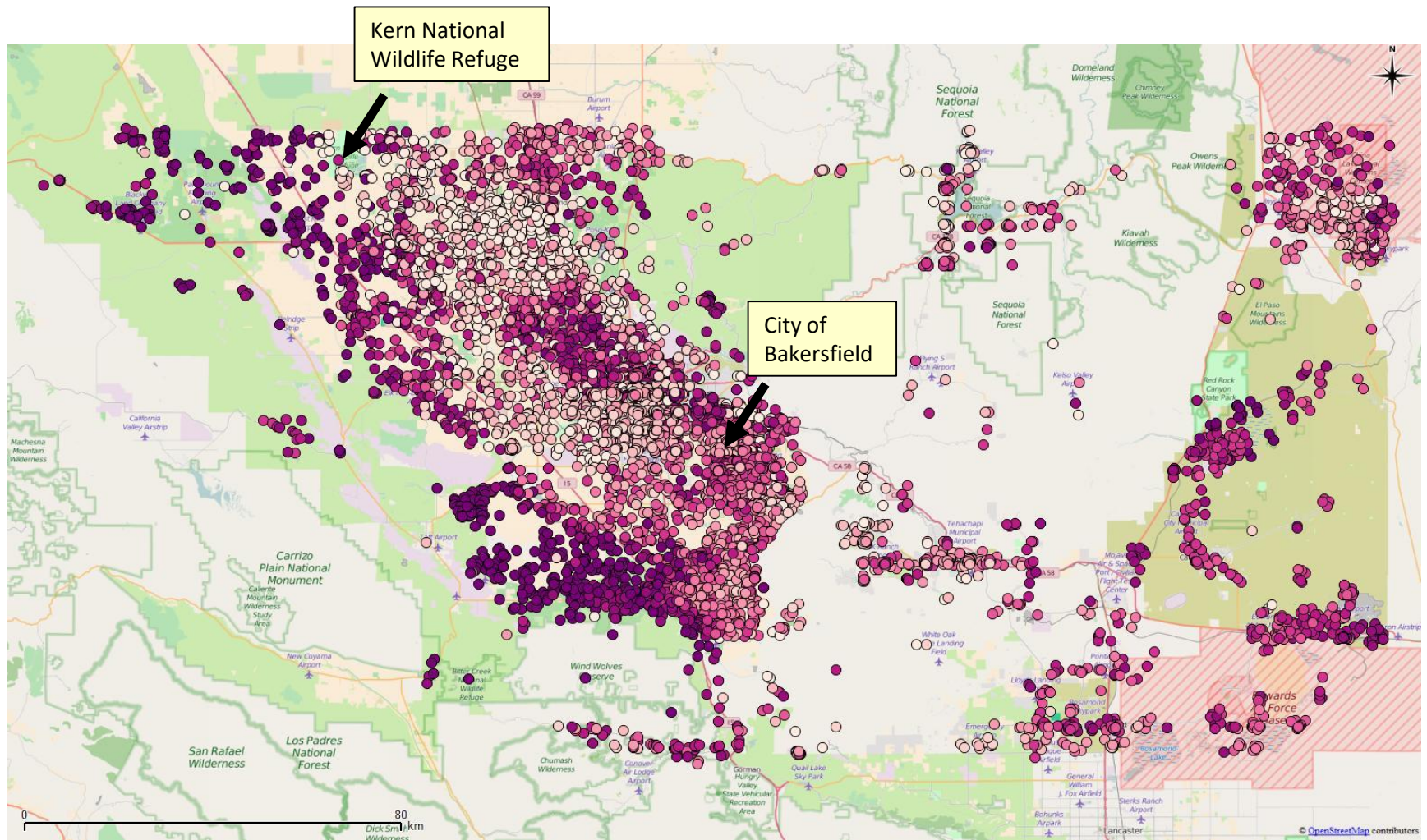


Figure 5: Distribution of median historic sulfate concentrations in wells included in GAMA data set (CSWRCB), scaled by concentration quantiles. Map generated with Quantum GIS (<http://www.qgis.org/en/docs/index.html>).

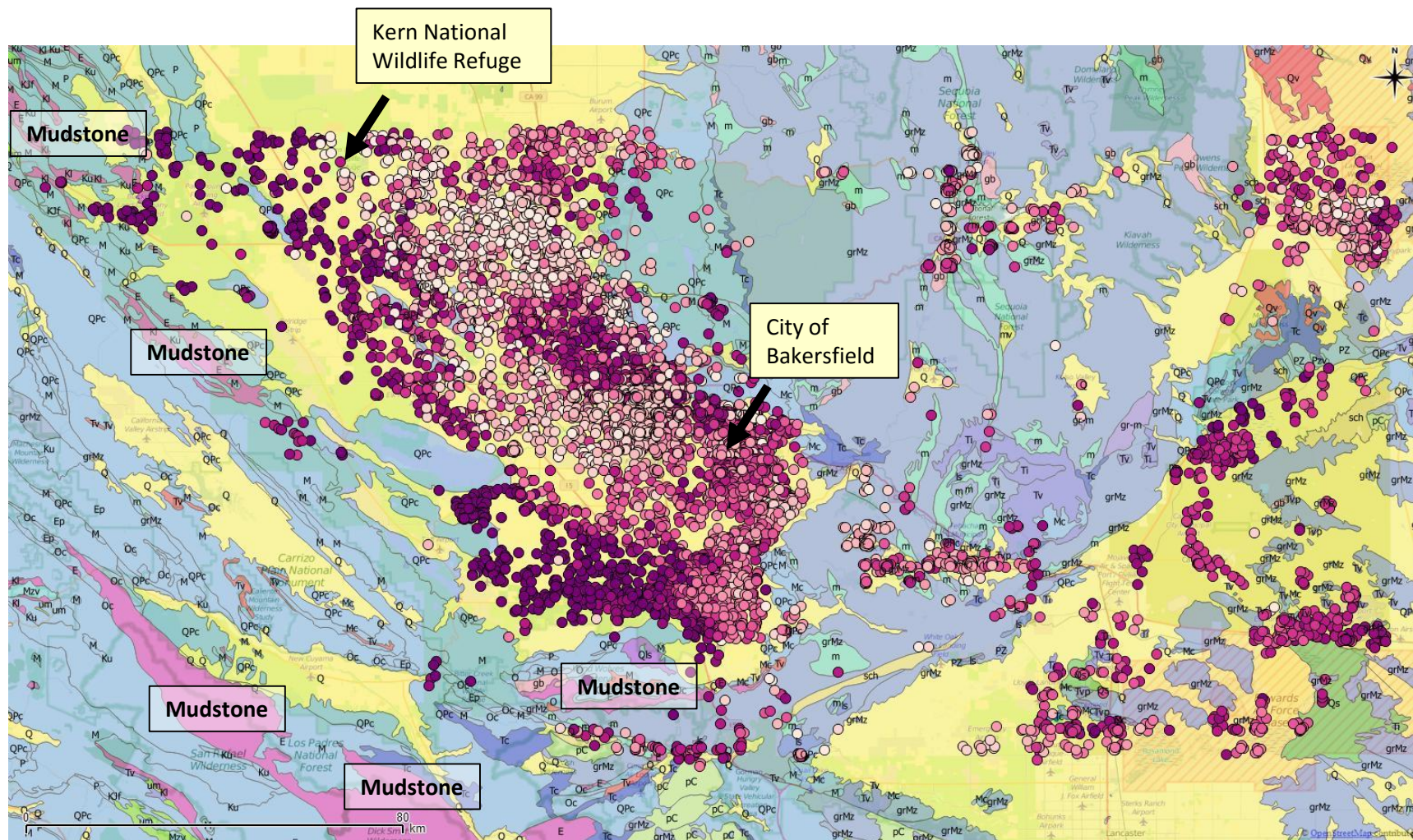


Figure 6: Distribution of median historic sulfate concentrations, overlain on a geologic map (U.S. Geological Survey). Map generated with Quantum GIS (<http://www.qgis.org/en/docs/index.html>). High concentrations of some constituents may be related to the provenance of drainages in the Coast Ranges to the west that contain readily-dissolved mudstones (Wood and Dale 1964).

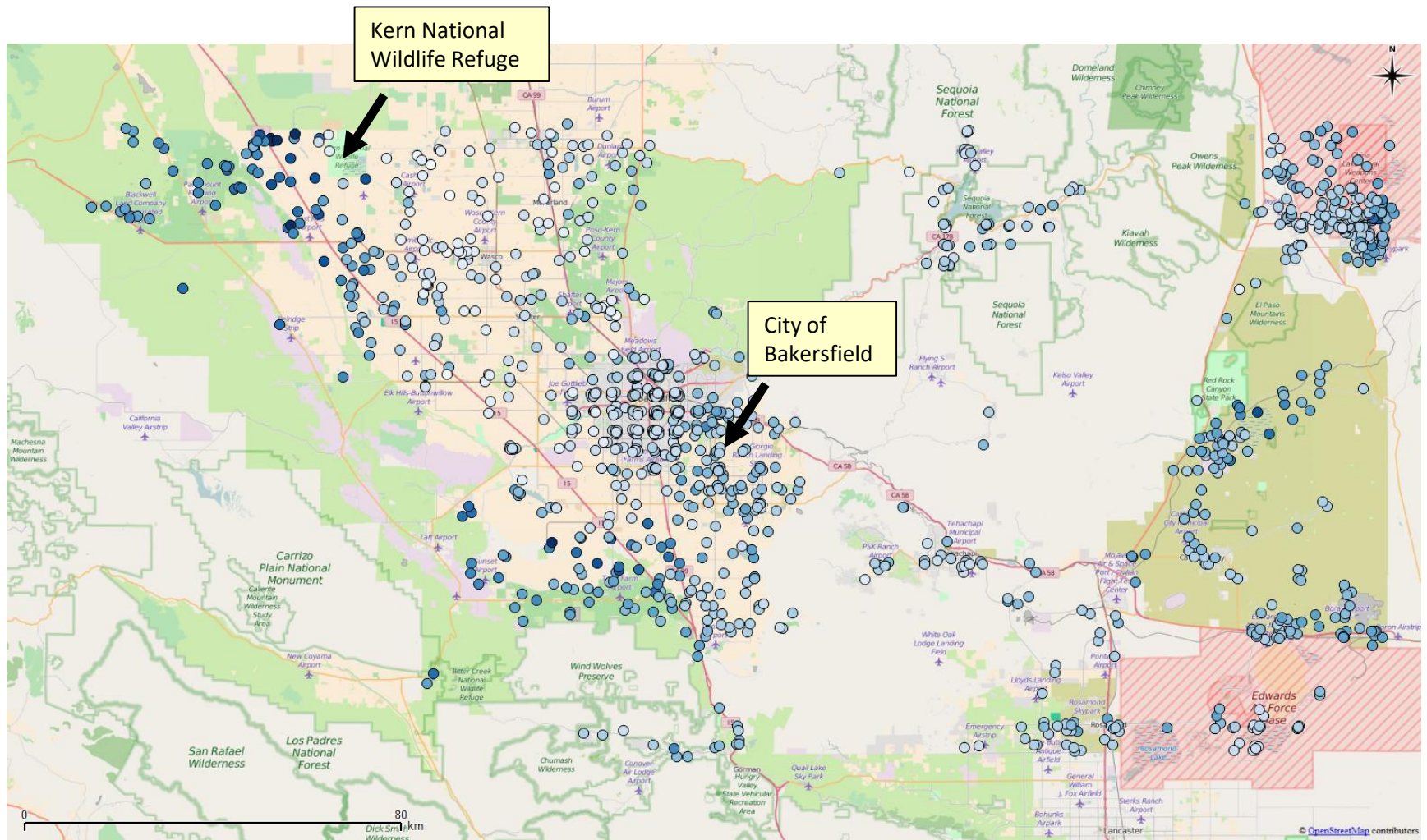


Figure 7: Distribution of first principal component contributing to variance in multi-parameter concentration data,, scaled by quantiles. Map generated with Quantum GIS (<http://www.qgis.org/en/docs/index.html>).

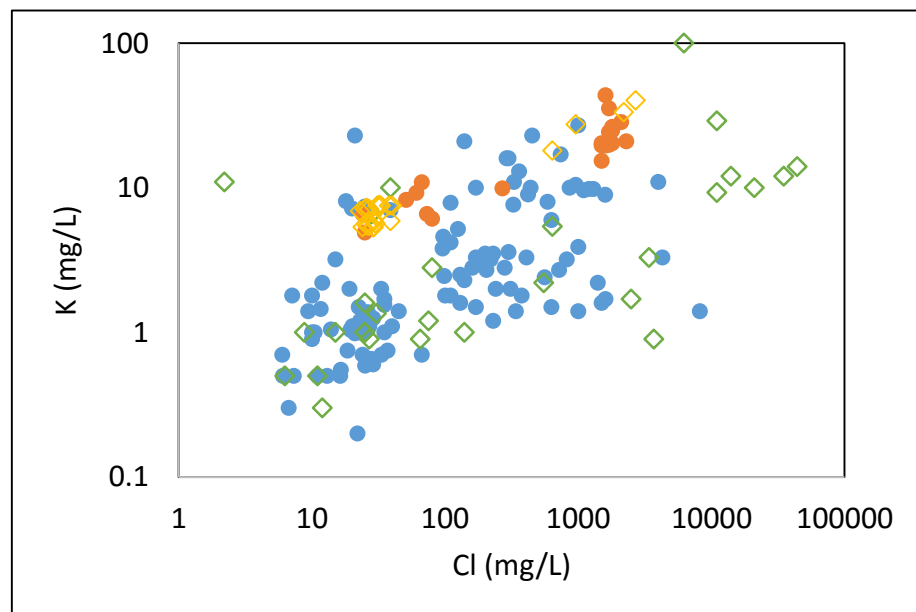
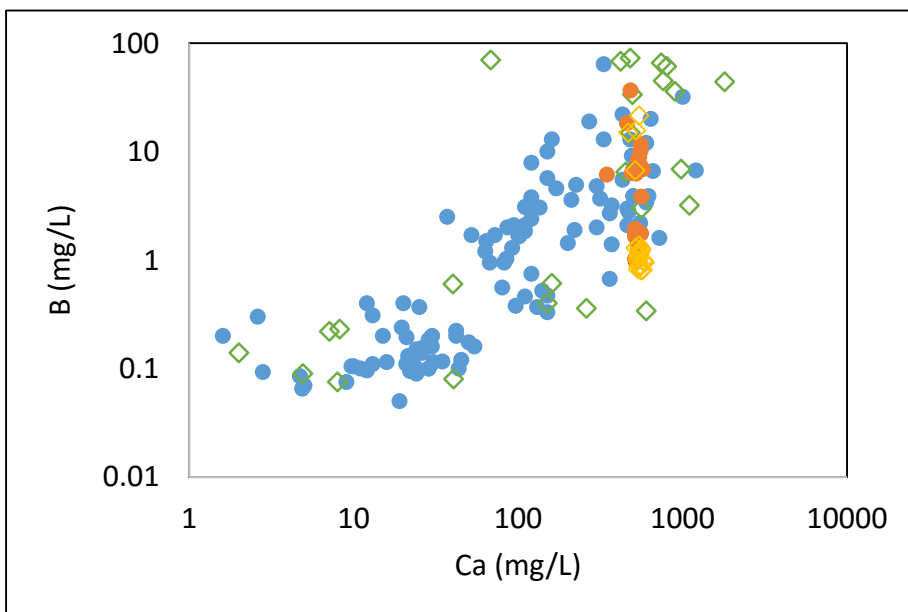
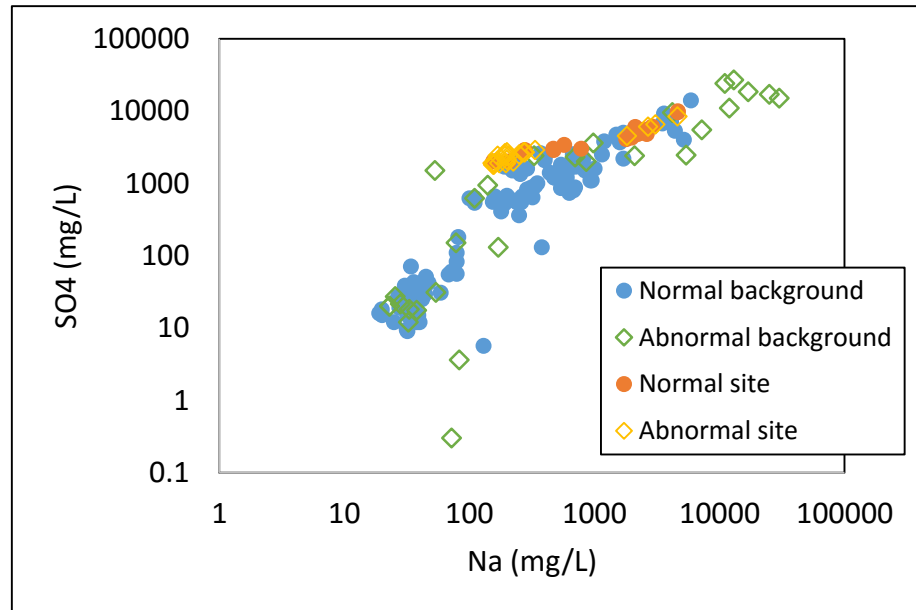
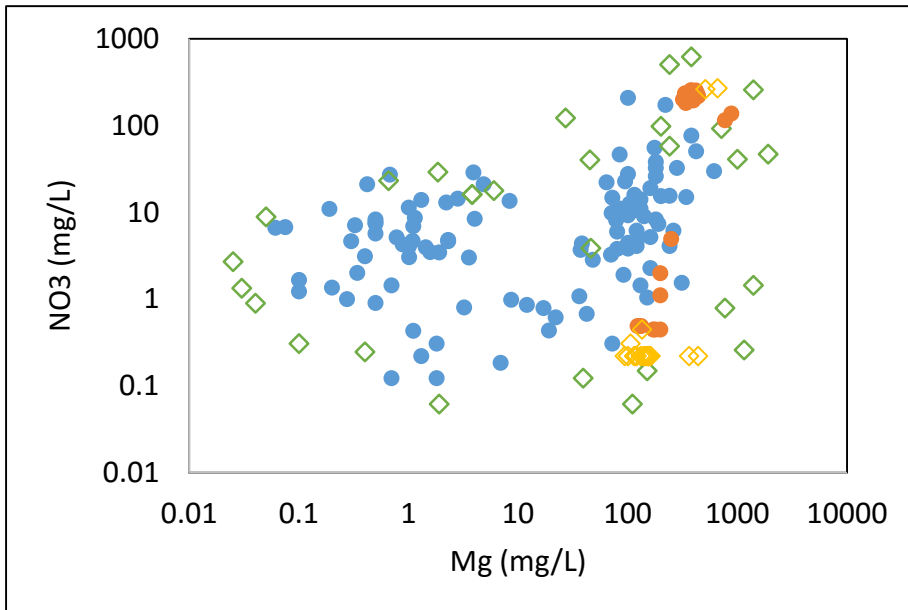


Figure 8: Selected scatter plot slices through multi-dimensional parameter spaces entailing groundwater data from a subset of wells along the Coast Ranges (training data) as well as site data (test data); delineated into normal and abnormal (e.g., novelty) sets using a support vector machine novelty detection algorithm.

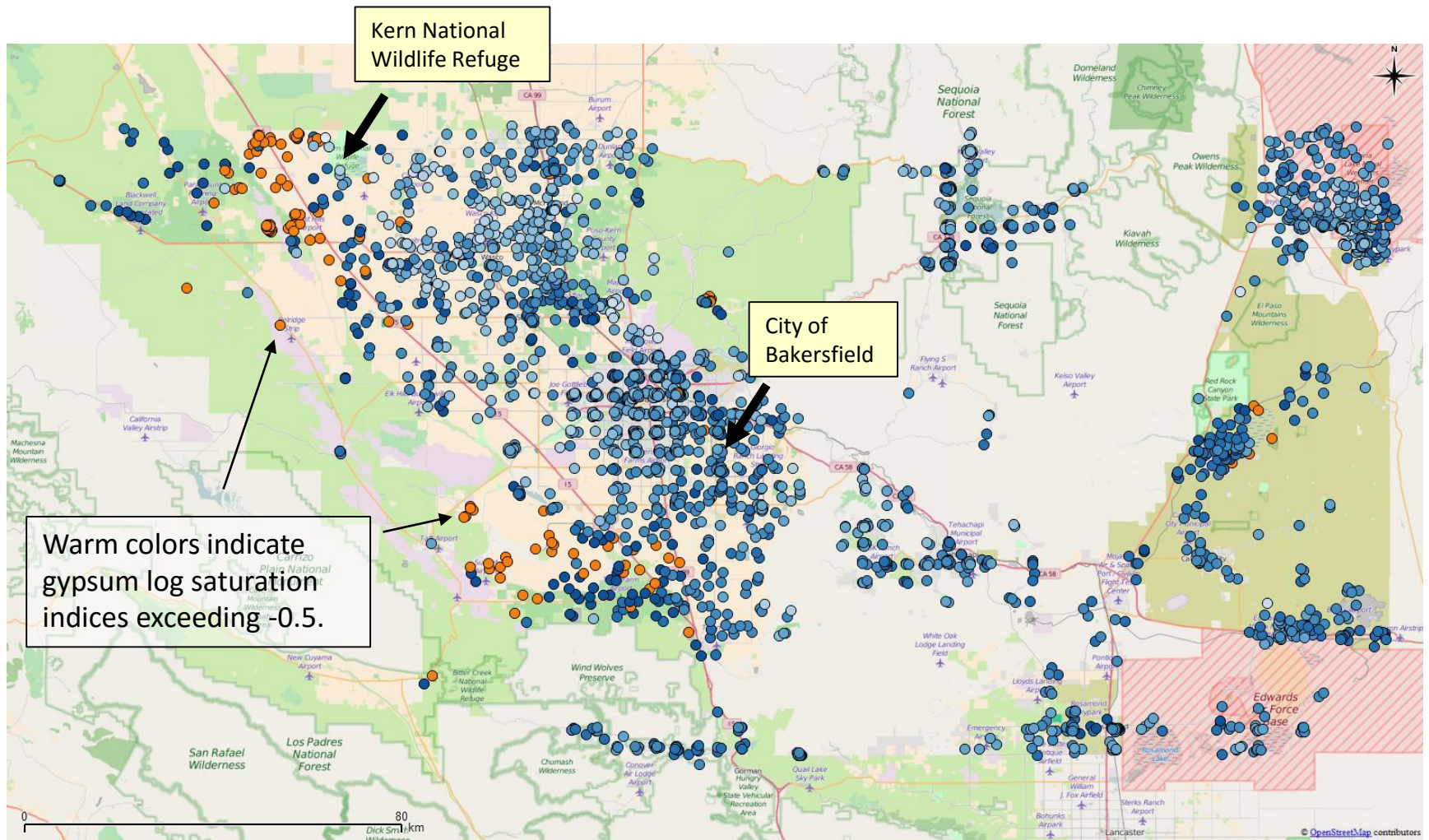


Figure 9: Distribution of gypsum saturation indices in wells included in GAMA data set (CSWRCB), scaled by concentration quantiles. Map generated with Quantum GIS (<http://www.qgis.org/en/docs/index.html>).

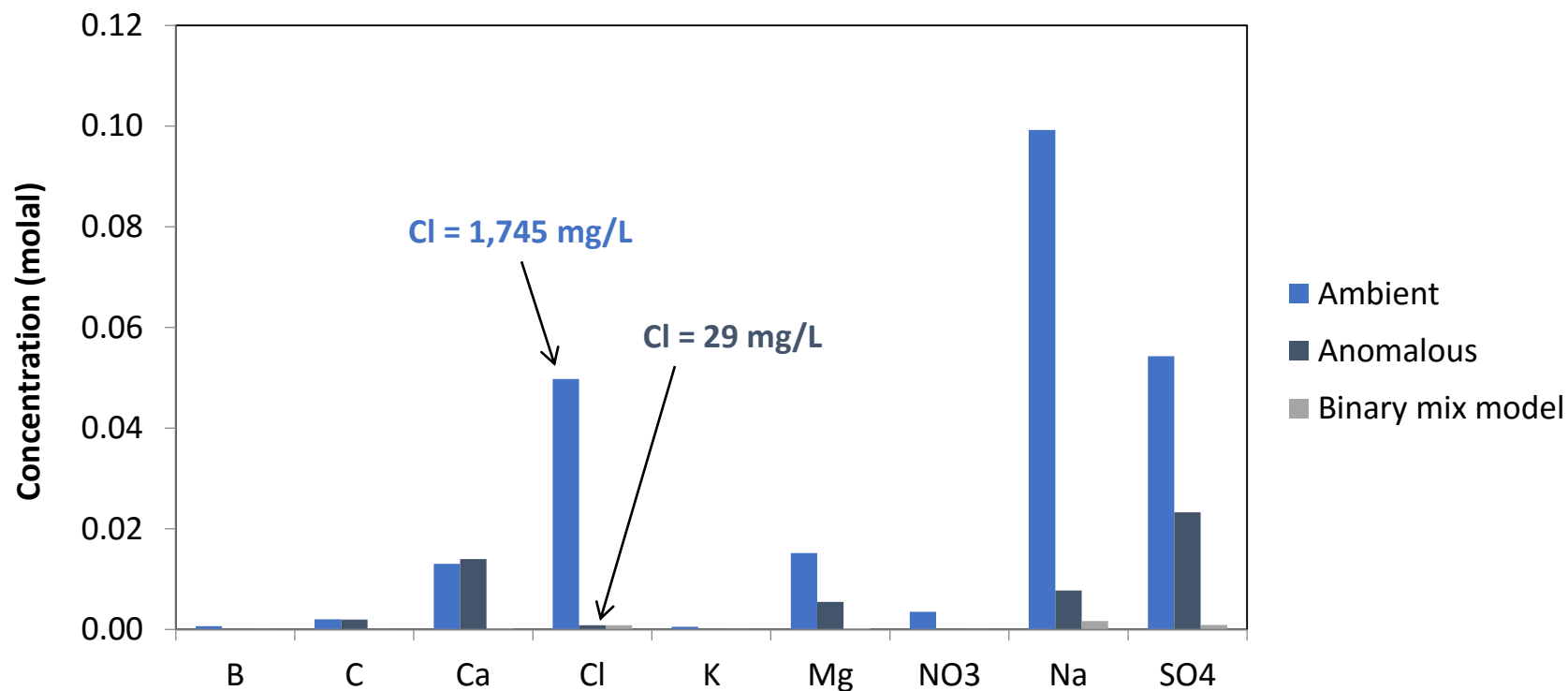


Figure 10: Binary mixing model attempt to explain anomalous water composition, based on dilution to match chloride concentrations.

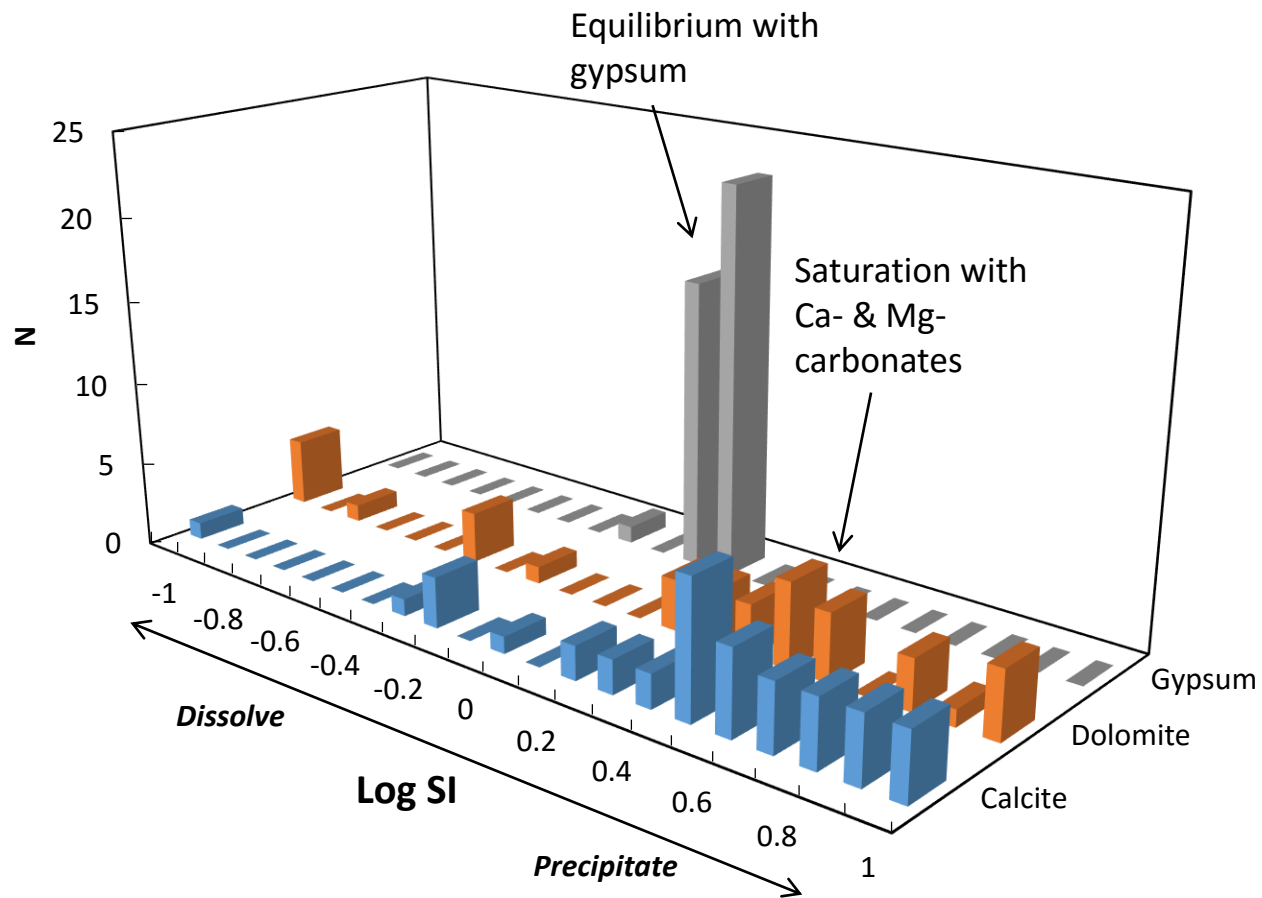


Figure 11: Speciation of all site shallow groundwater samples with PHREEQC: distribution of (log) saturation indices.

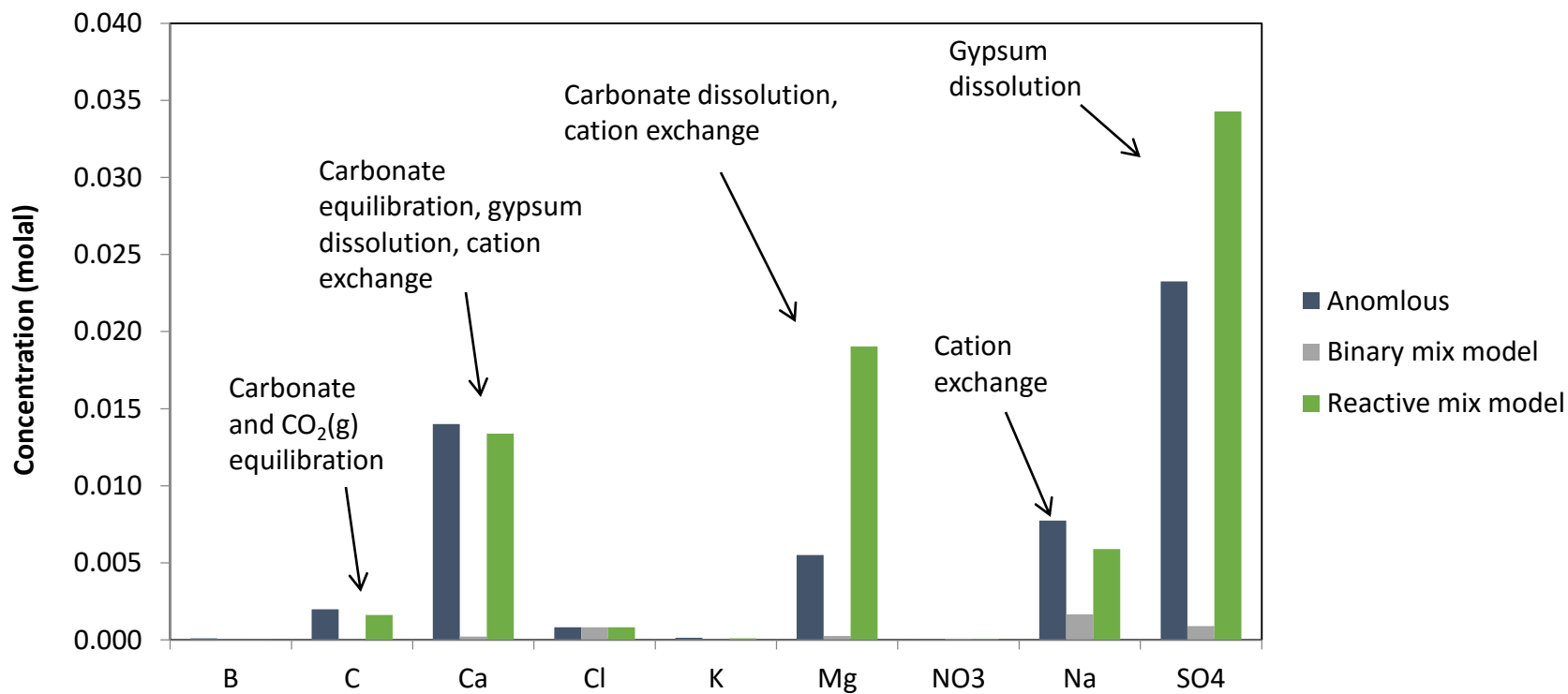


Figure 12: Reactive mixing model attempt to explain anomalous water composition, based on dilution to match chloride concentrations plus equilibration with carbonate minerals, gypsum, soil CO₂, and an ion exchanger.

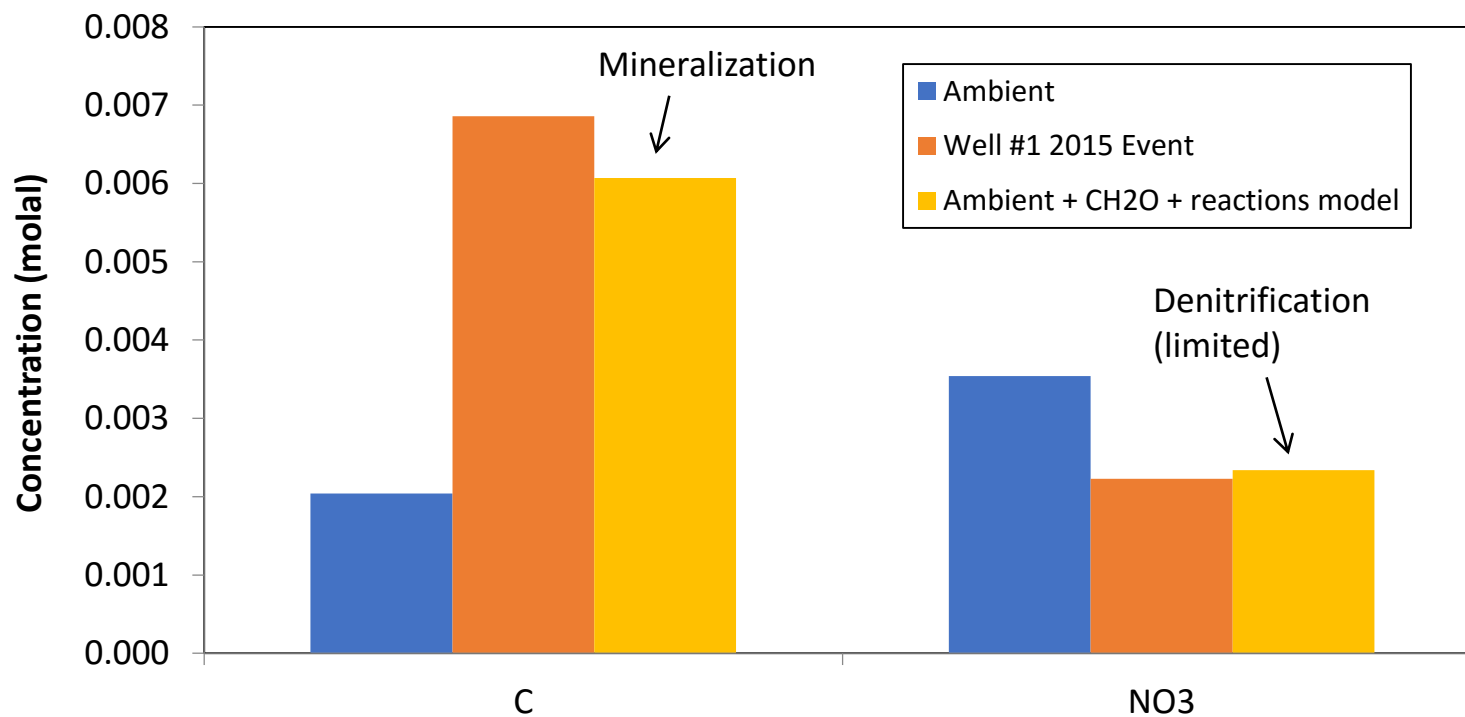


Figure 13: Simulated mineralization of organic matter in ambient water composition with limited oxygen access, plus assumed equilibration with carbonate minerals, gypsum, soil CO₂, and an ion exchanger.