

### Cumulative Weathering Rates

The above calculations were performed for each week, for each column and for each laboratory. The only reasonable way to do the multiple calculations was to use a spreadsheet. The types of calculations presented in spreadsheet format are displayed in Table 7.6. The percentage weathered each week can be added cumulatively to determine the amount of carbonate (or sulfur) weathered through the duration of the test. This also allows for the evaluation of whether or not the rate of weathering changes throughout the course of the test. Figures 7.27 through 7.32 show cumulative weathering plots for calcium carbonate weathering rates calculated using the cation and anion approaches. The carbonate weathering results for the Brush Creek Shale and the Lower Kittanning FC shale are illustrated below.

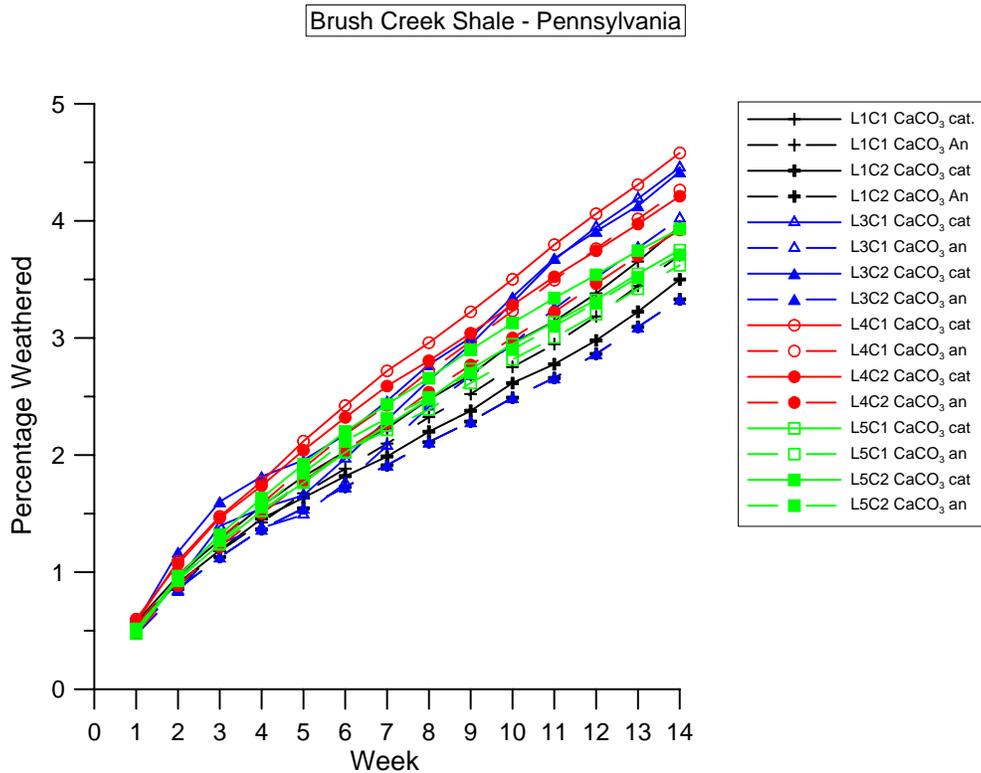


Figure 7.27. Cumulative carbonate dissolution rate determined using cations and anions for the Brush Creek Shale. Data are for laboratories 1, 3, 4 and 5.