Little is known currently regarding the sourcing of clay for Long Island Native American ceramic works of the Woodland period. During this period, Native Americans across Long Island produced ceramic pots, bowls, and pipes with decorative distinctions roughly divided into Windsor and East River traditions. This study compares the mineralogical and elemental profiles of ceramic sherds associated with archaeological sites ranging from present-day Brooklyn to Orient. We hope to use the data obtained in this and future studies at additional NSLS II beamlines to differentiate the possible sources of clay for the ceramics, as well as possible trade interactions involved in ceramics production.