

# Ceramic and Glass Artifact Analysis



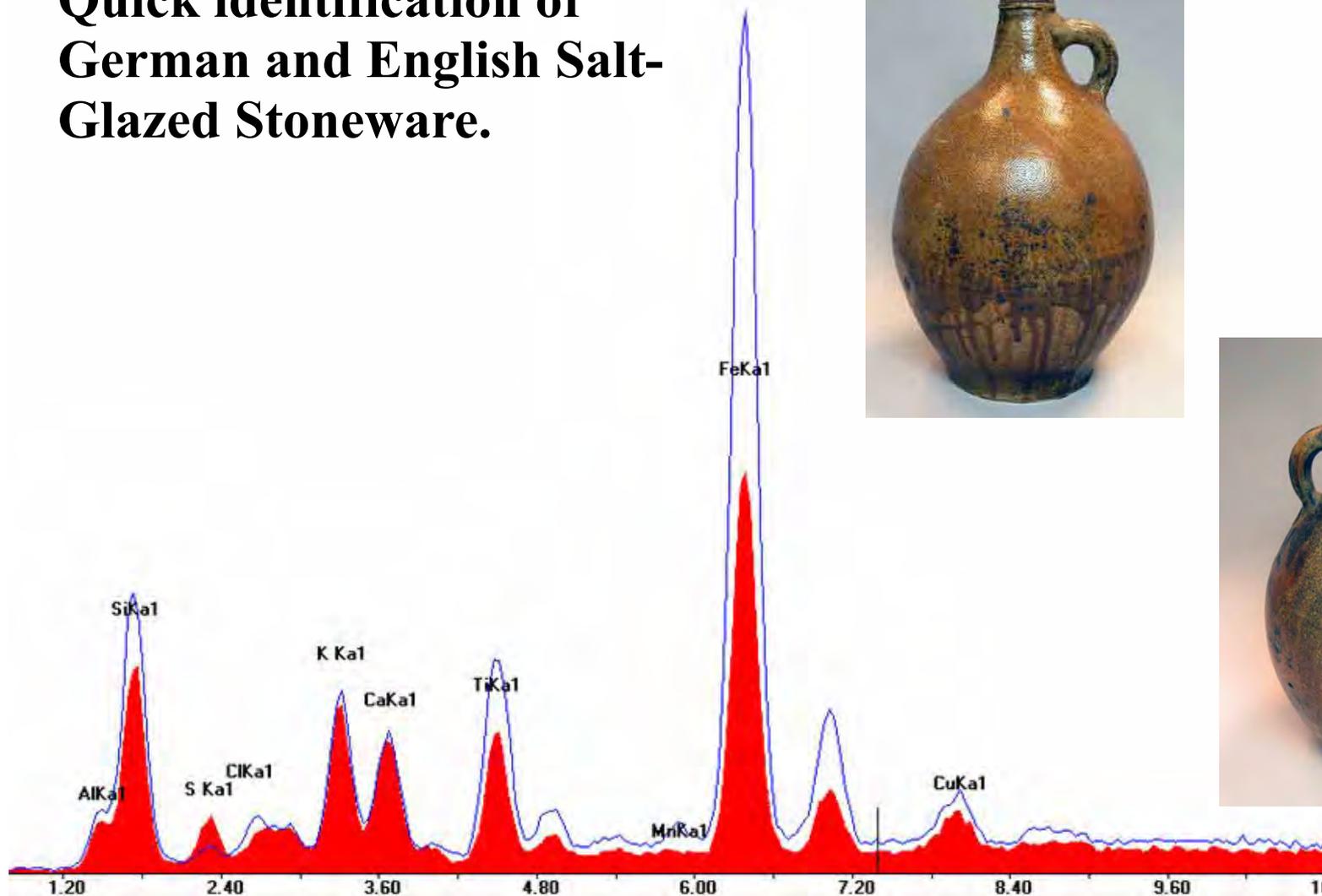
By  
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## **Colonial Williamsburg Analysis.**

The following 5 slides are the result of analysis of various artifacts at Colonial Williamsburg by Helen Stockman. They show 5 typical applications of interest to museums

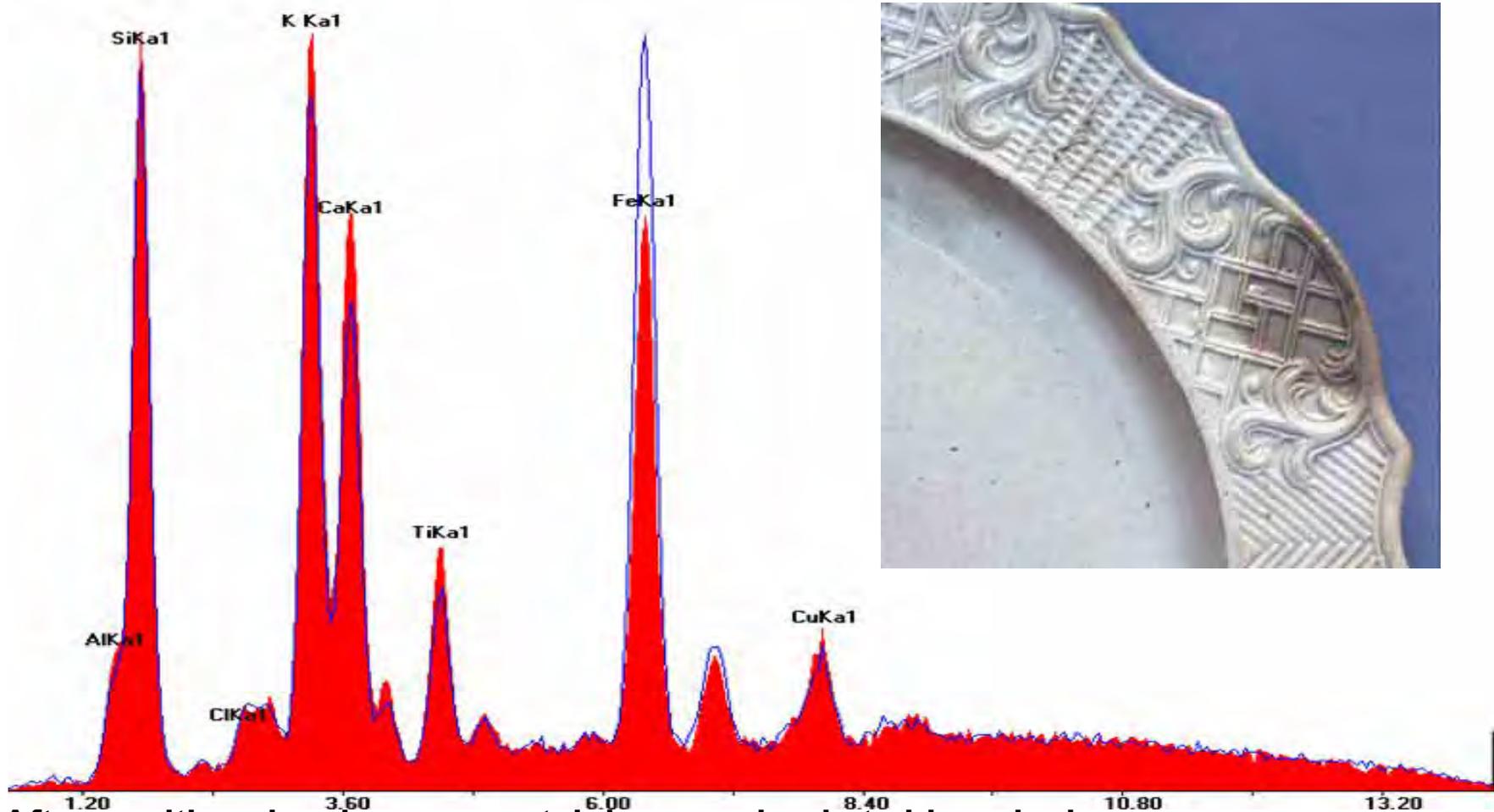
- **Quick identification of German and English Salt-glazed Stoneware.**
- **Identification of iron staining in a Staffordshire Salt-Glazed Stoneware Plate.**
- **An elemental comparison of a pair of English 17thC. Glass Decanters.**
- **Determining salts in an American Archaeological 18thC. Red Earthenware Bank.**
- **Identifying 'invisible' restoration on a Chelsea Bullfinch that is unaffected by UV light for purposes of cleaning and documentation.**

# Quick identification of German and English Salt-Glazed Stoneware.



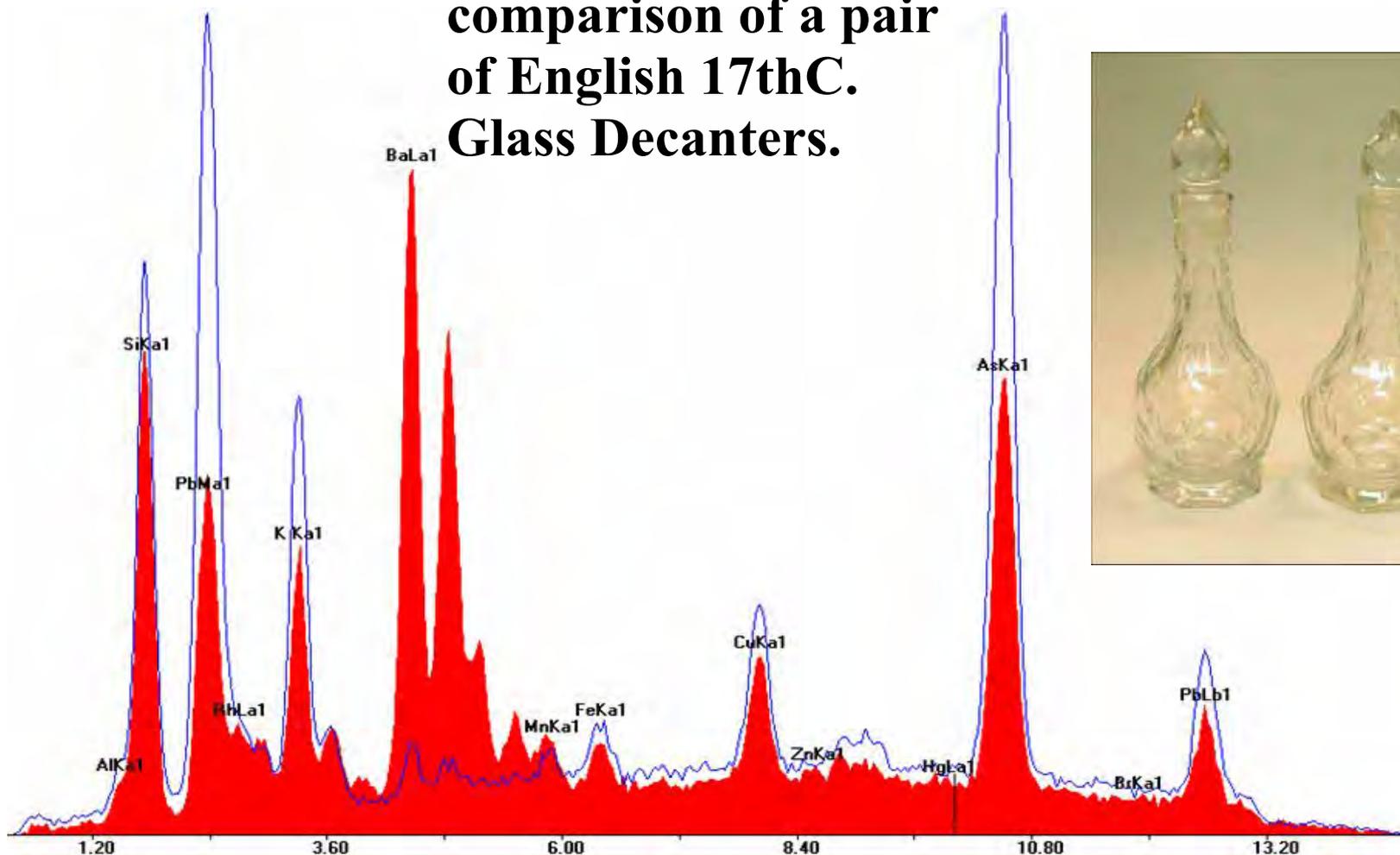
The English Stoneware (blue) contains significantly more iron than the German Stoneware (red). (English– top image)

# Identification of iron staining in a Staffordshire Salt-Glaze Stoneware Plate.



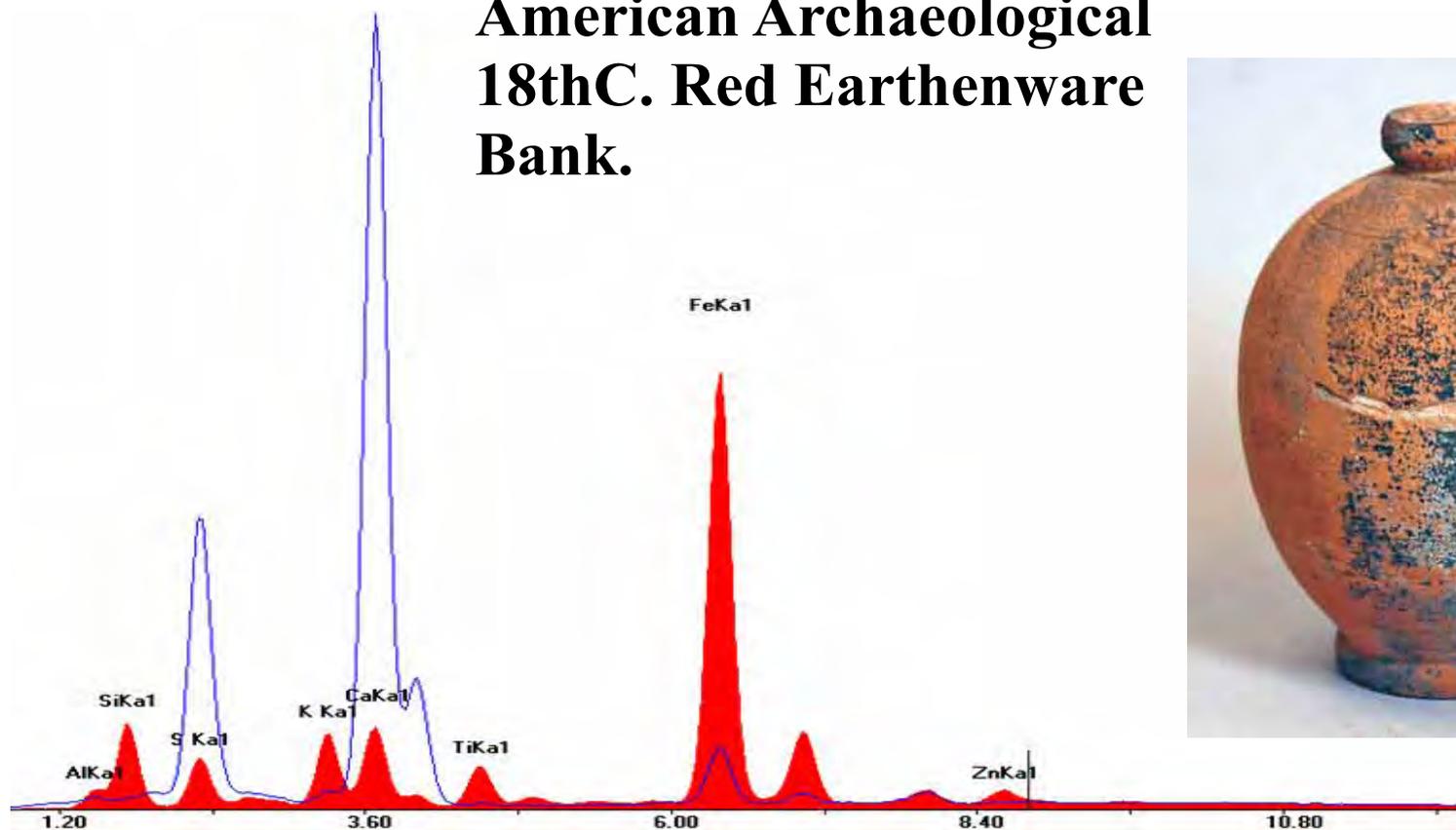
After poultice cleaning, some staining remained at chipped edges on the plate. The red spectra shows the main elements in the plate in an unstained area, whilst the blue spectra shows the elements of a stained area indicating a higher iron presence.

# An elemental comparison of a pair of English 17thC. Glass Decanters.



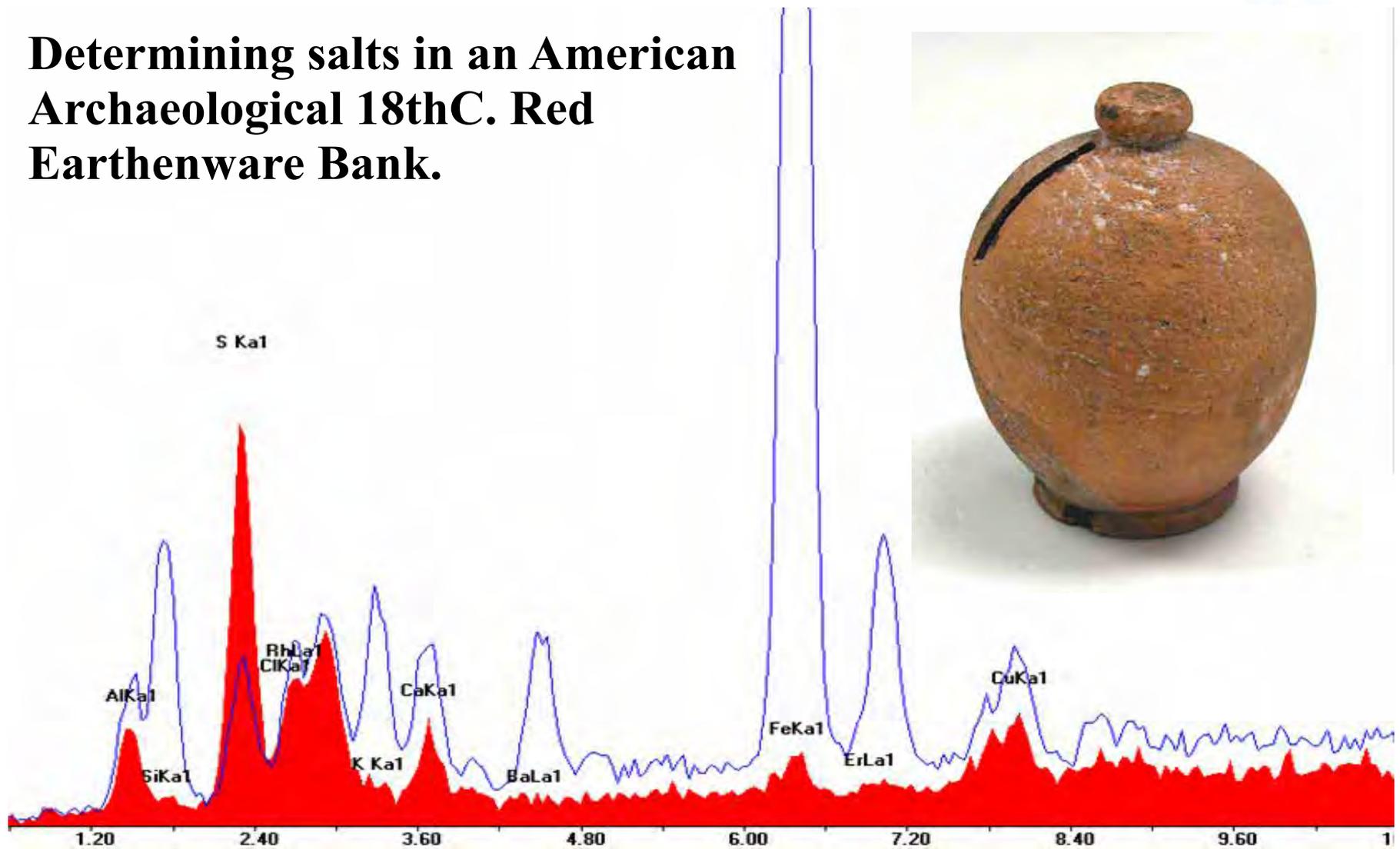
The decanter on the right has a significant amount of barium in it, whilst the other does not. Barium was not documented to be used in glass manufacture until the early 1800's.

# Determining salts in an American Archaeological 18thC. Red Earthenware Bank.



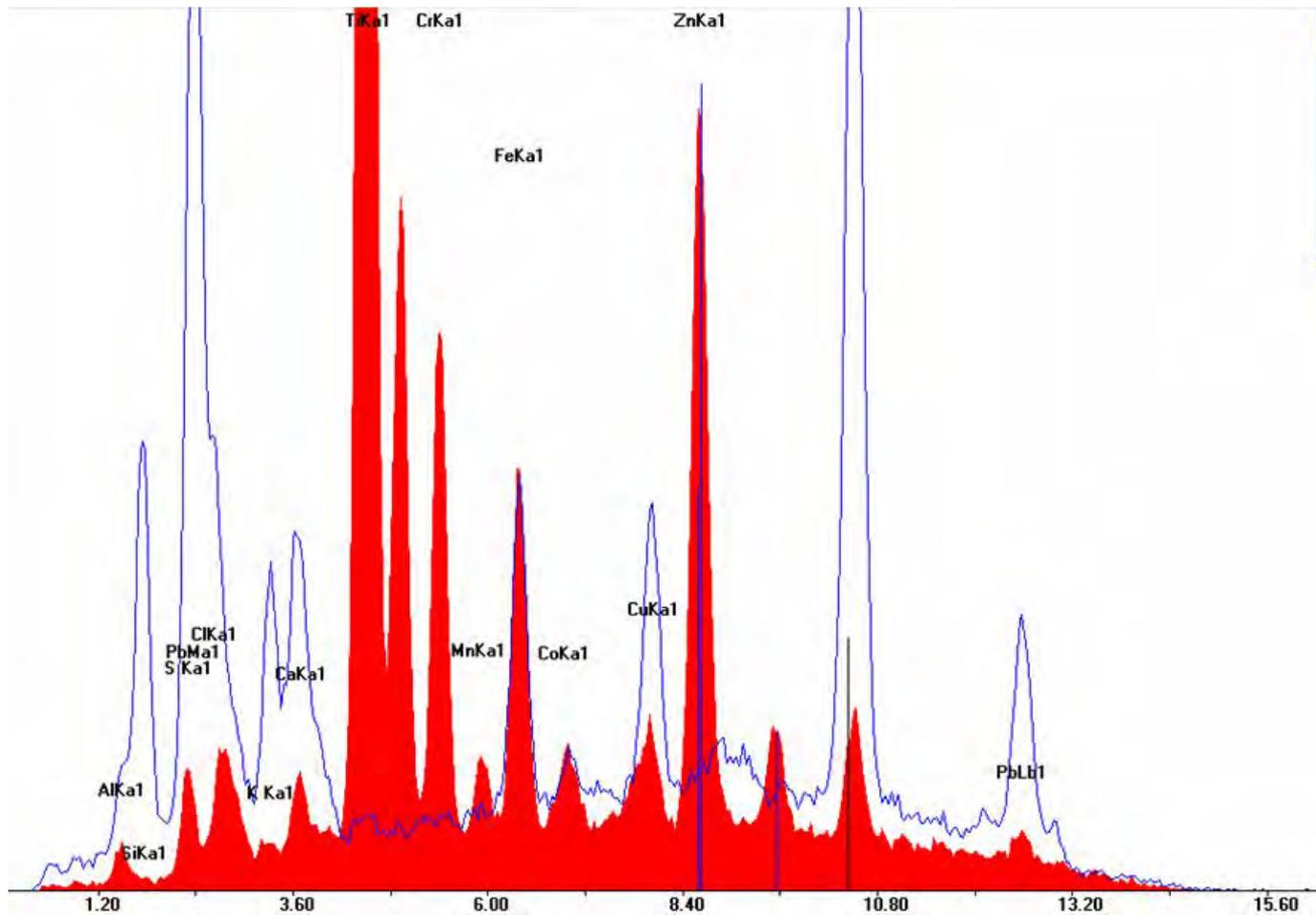
This bank was found in a burial excavation at a marine site near Williamsburg. The blue spectra indicates that the blue-grey accretions on the ceramic consists mainly of Ca sulfate. The red spectra shows the lighter (red) areas of the earthenware primarily consists of Fe with Al, Si, S, K, Ca, Ti and Zn. White calcium carbonate crystals are also found scattered about the surface.

# Determining salts in an American Archaeological 18thC. Red Earthenware Bank.



The blue spectra shows that this earthenware primarily consists of Si, Fe, K and Ca; the labels stating the general elements found in the ceramic. The red spectra shows the salt content consists mainly of S and lower mass elements such as Na.

# Identifying restoration on a Chelsea Bullfinch.



The two images are of the same bird. The yellow areas on the lower bird indicate the areas of 'invisible' restoration. The blue spectra is of an original glazed ceramic leaf, whilst the red spectra represents an over-painted / restored leaf.