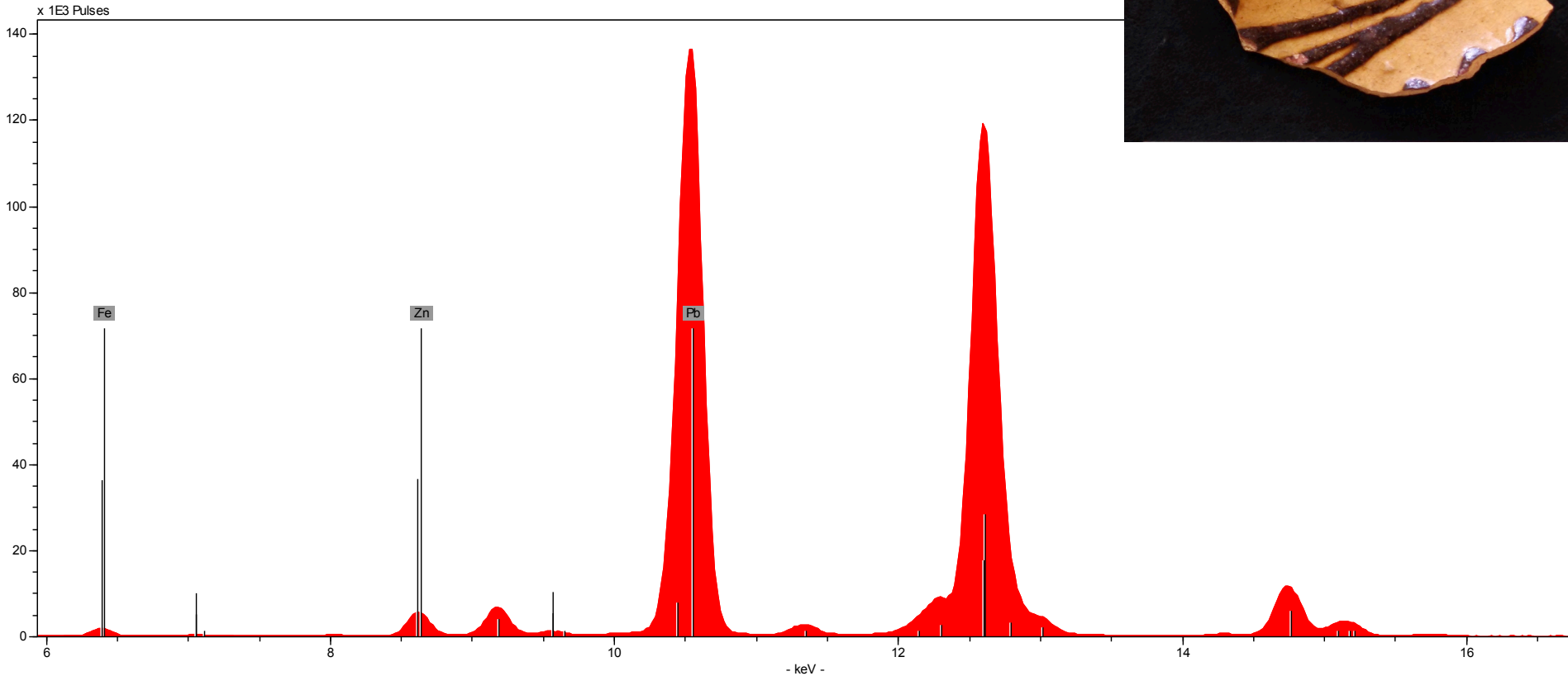# Lead glaze
Staffordshire, England, 18th C.

x 1E3 Pulses

- keV -

Instrument Settings: 40 kV, 11 micro amps, no vacuum, yellow filter.
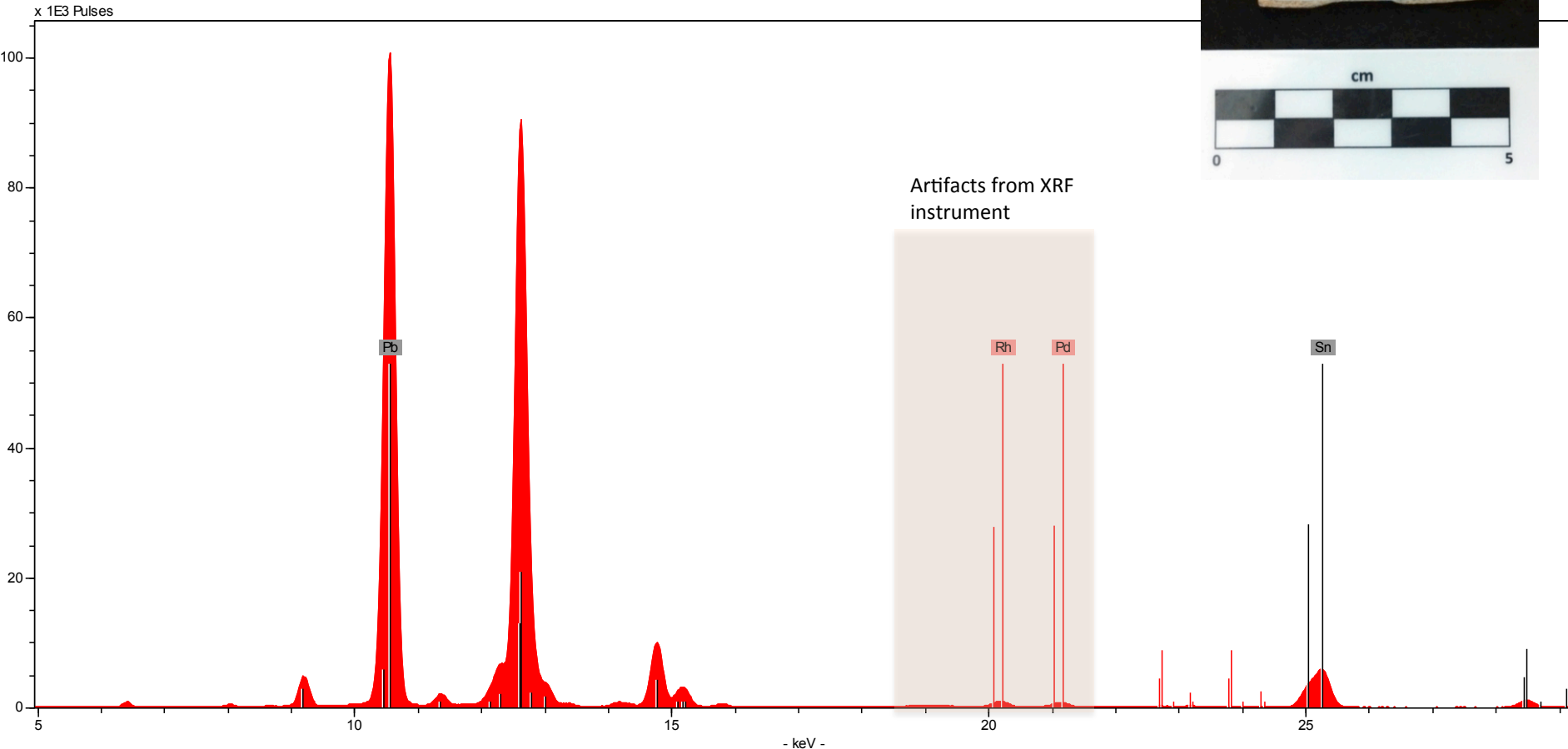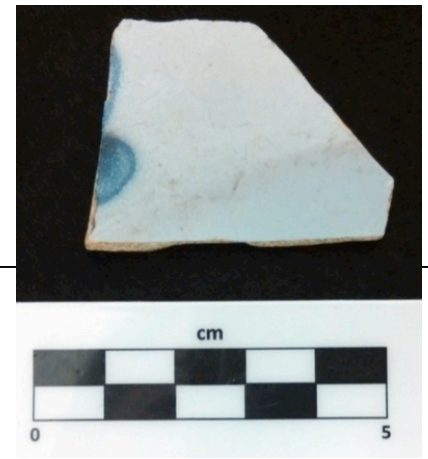Runtime: 60 seconds
These settings focus on the energy range for metals, the principal colorants for paints and glazes.

Results:
Glaze is predominantly lead (Pb), with some iron (Fe) and zinc (Zn).

Tin glaze
Delft

x 1E3 Pulses

Artifacts from XRF instrument

Pb

Rh   Pd   Sn

- keV -

Instrument Settings: 40 kV, 11 micro amps, no vacuum, yellow filter.
Runtime: 60 seconds
These settings focus on the energy range for metals, the principal colorants for paints and glazes.

Results:
Glaze is compose of lead (Pb) and tin (Sn). Additional ingredients may be masked by the lead.

Alkaline glaze
Hewitt Pottery

x 1E3 Pulses

K Ca Ti Mn Fe Cu Rb Sr Zr Nb Rh Pd

Artifacts from XRF instrument

- keV -

Instrument Settings: 40 kV, 11 micro amps, no vacuum, yellow filter.

Runtime: 60 seconds

These settings focus on the energy range for metals, the principal colorants for paints and glazes.
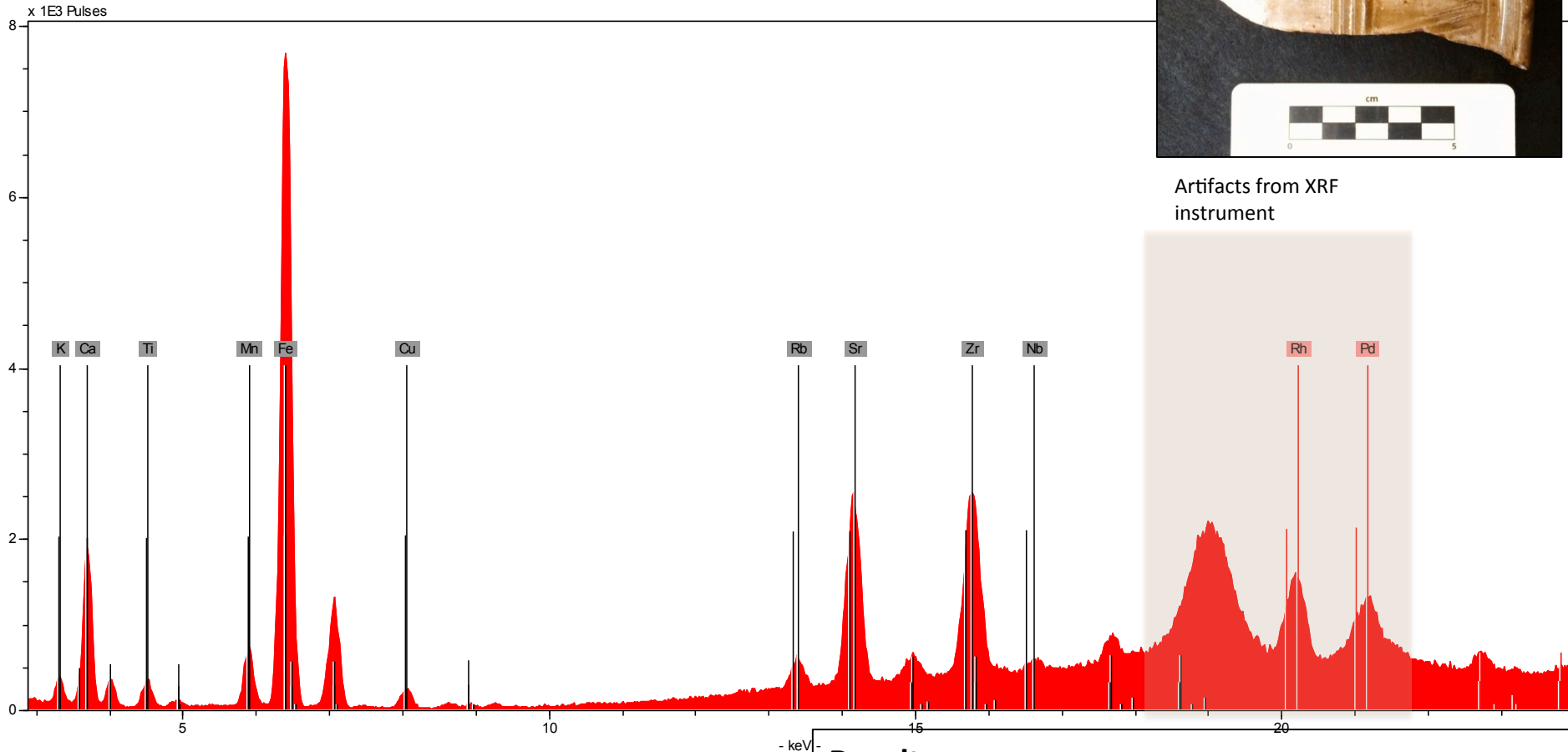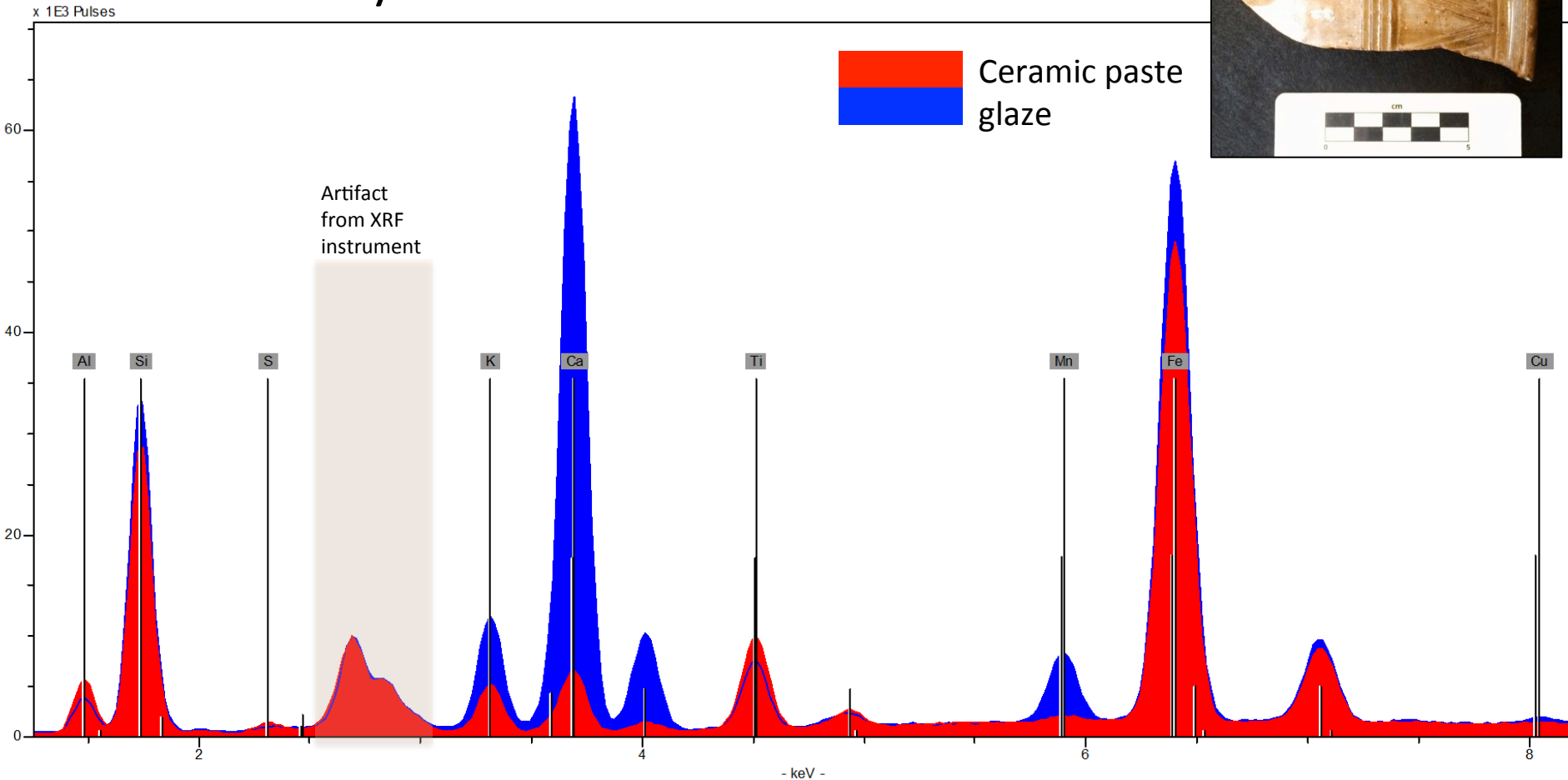
Results:

Presence of potassium (K) and calcium (Ca) as evidence for alkaline glaze. High manganese (Mn), iron (Fe) and copper (Cu) contribute to the celadon color. Glaze is likely feldspathic.

Alkaline glaze
Hewitt Pottery

x 1E3 Pulses

Artifact from XRF instrument

Ceramic paste
glaze

Al Si S K Ca Ti Mn Fe Cu

- keV -

Instrument Settings: 15 kV, 45 micro amps, vacuum, no filter.
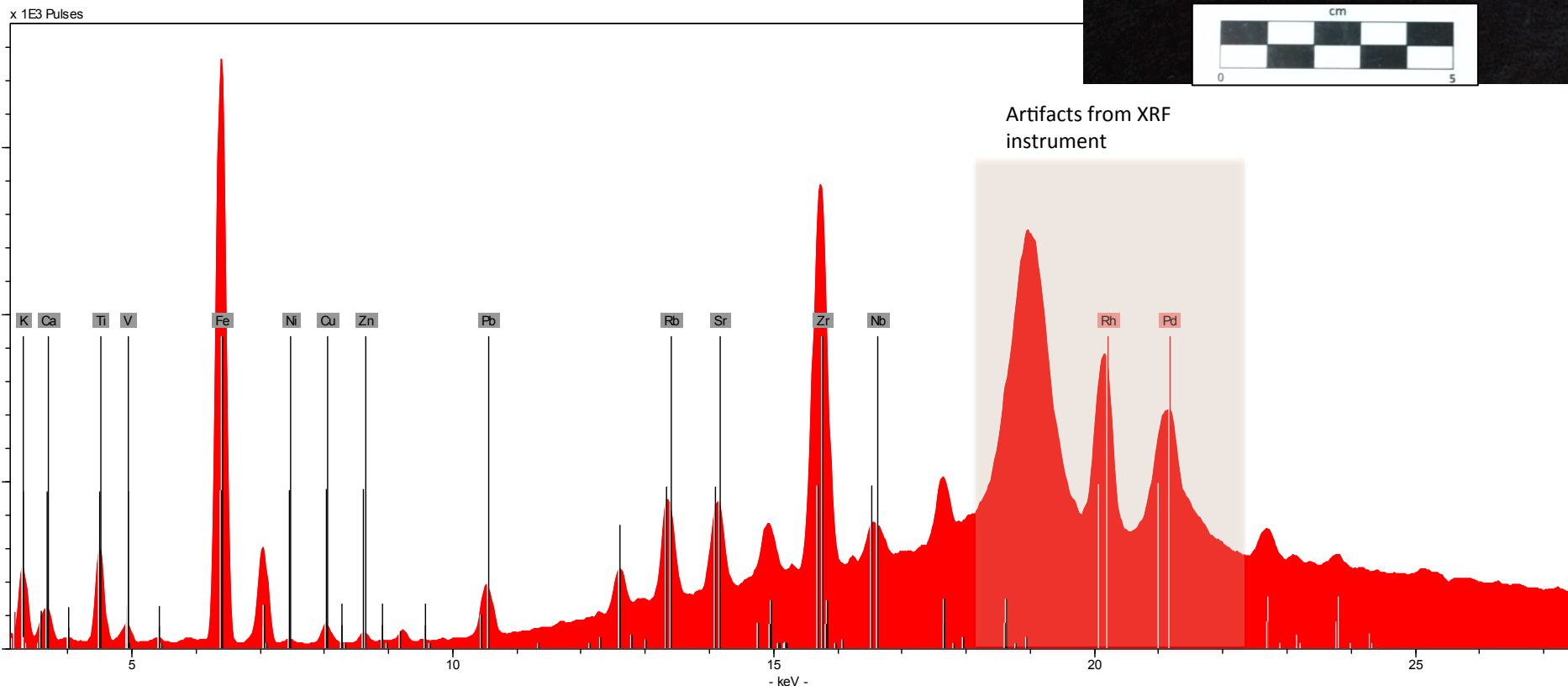Runtime: 60 seconds
These settings focus on the energy range for light elements.

Results:
Alkaline glaze is much higher than the underlying clay body in potassium (K) and calcium (Ca), as well as colorants manganese (Mn), iron (Fe) and copper (Cu).

Salt-glaze
18th C. Germany (Westerwald)

x 1E3 Pulses

Artifacts from XRF instrument

| K | Ca | | Ti | V | | Fe | | Ni | Cu | Zn | | Pb | | Rb | Sr | | Zr | Nb | | Rh | Pd |

- keV -

Instrument Settings: 40 kV, 11 micro amps, no vacuum, yellow filter.
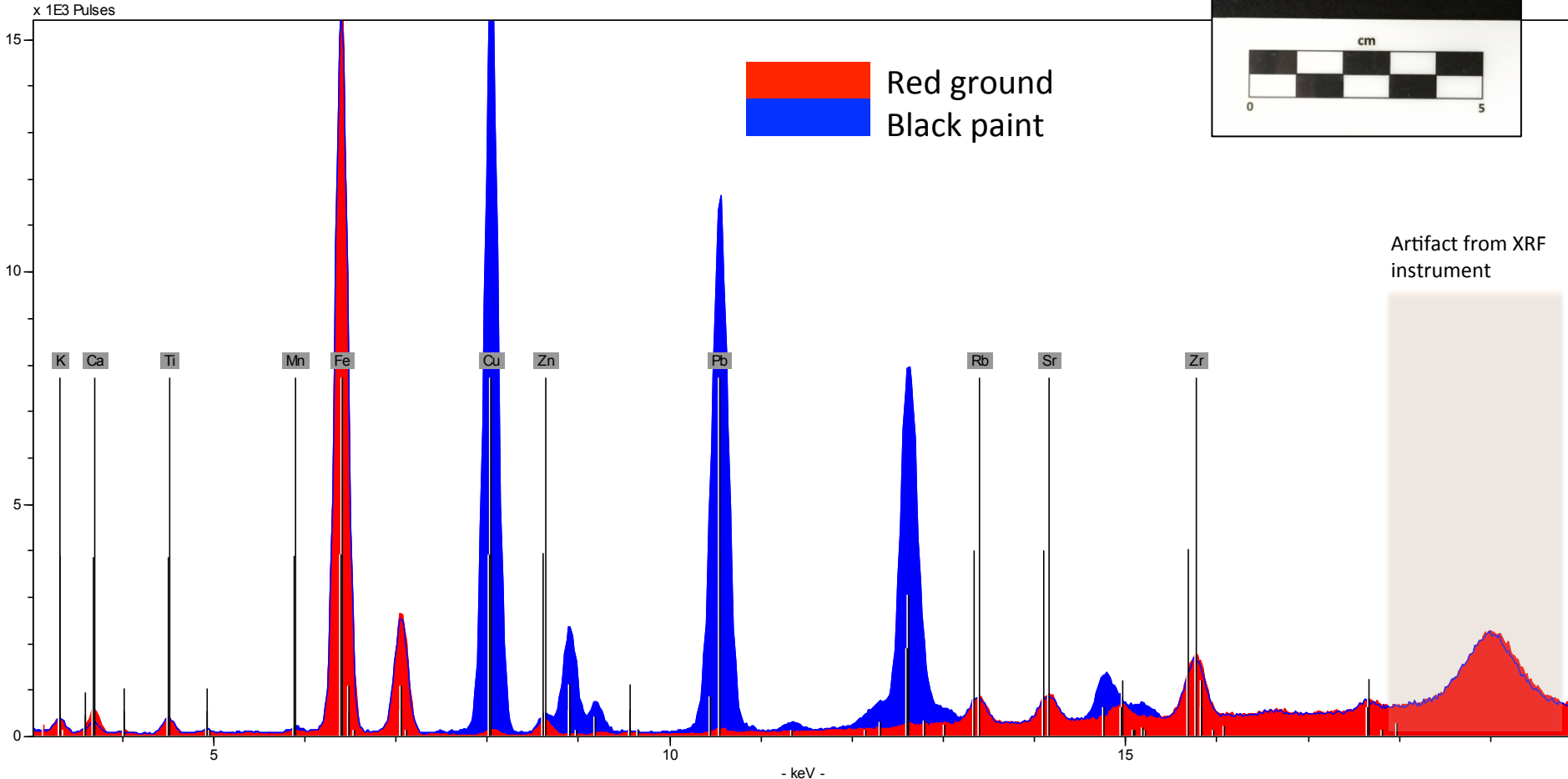Runtime: 60 seconds
These settings focus on the energy range for metals, the principal colorants for paints and glazes.

Results:
Sodium (Na) is not able to be detected by the XRF. The elements present represent the underlying ceramic body.

White Mountain Redware
Zuñi

Legend:
- Red ground
- Black paint

x 1E3 Pulses

Element labels along spectrum: K, Ca, Ti, Mn, Fe, Cu, Zn, Pb, Rb, Sr, Zr

- keV -

Artifact from XRF instrument

Instrument Settings: 40 kV, 11 micro amps, no vacuum, yellow filter.
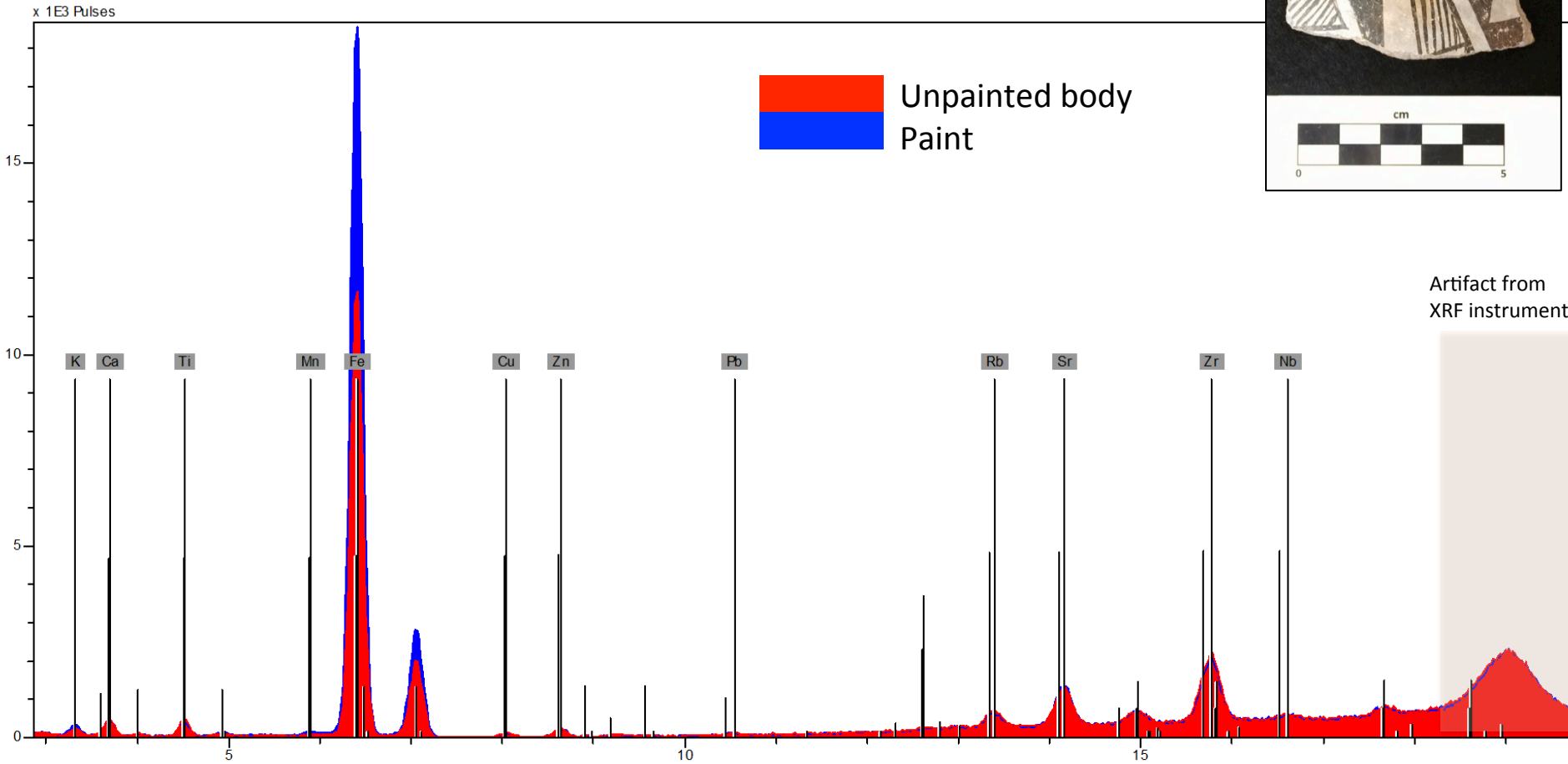Runtime: 60 seconds
These settings focus on the energy range for metals, the principal colorants for paints and glazes.

Results:
Paint is enriched in copper (Cu) and lead (Pb). The red ground is characteristic of an iron-rich (Fe) clay.

Cibola Whiteware
Zuñi

Legend:
- 🟥 Unpainted body
- 🟦 Paint

x 1E3 Pulses

Labeled elements (left to right): K, Ca, Ti, Mn, Fe, Cu, Zn, Pb, Rb, Sr, Zr, Nb

Artifact from XRF instrument

- keV -

Instrument Settings: 40 kV, 11 micro amps, no vacuum, yellow filter.
Runtime: 60 seconds
These settings focus on the energy range for metals, the principal colorants for paints and glazes.

Results:
Paint is enriched in iron (Fe) oxides. White ground also contains iron.