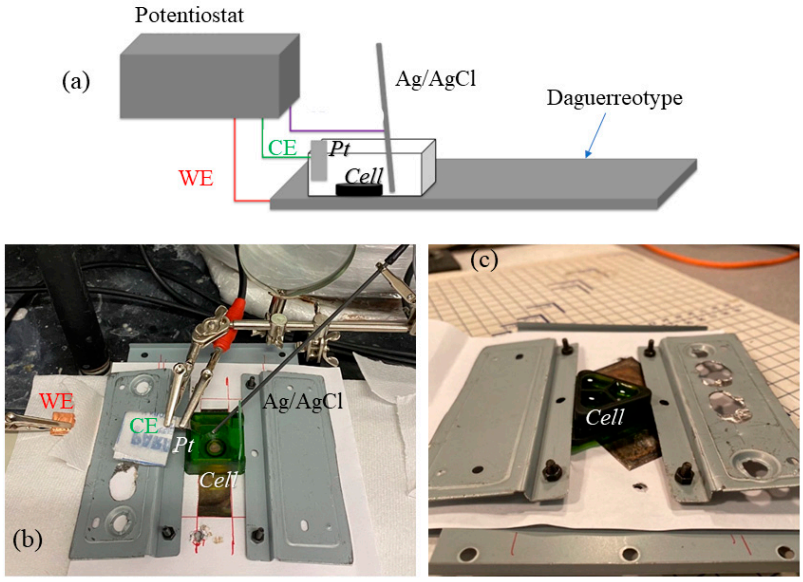

Figure S1 Experimental set up for electrochemical cleaning and chemical cleaning (a) Schematic for the three-electrode set up for electrocleaning. (b) Actual set up for electrocleaning; the area of interest is confined by the circumference of the cell which leaves an oval mark on the plate after cleaning. The working electrode (daguerreotype), counter electrode (Pt) and reference electrode (Ag/AgCl) are noted. (c) Set up for chemical cleaning with the three well cell clamped down on the plate. This set up leaves behind small triple oval marks on the plate. (see **Figure 2,** mid panel and text)

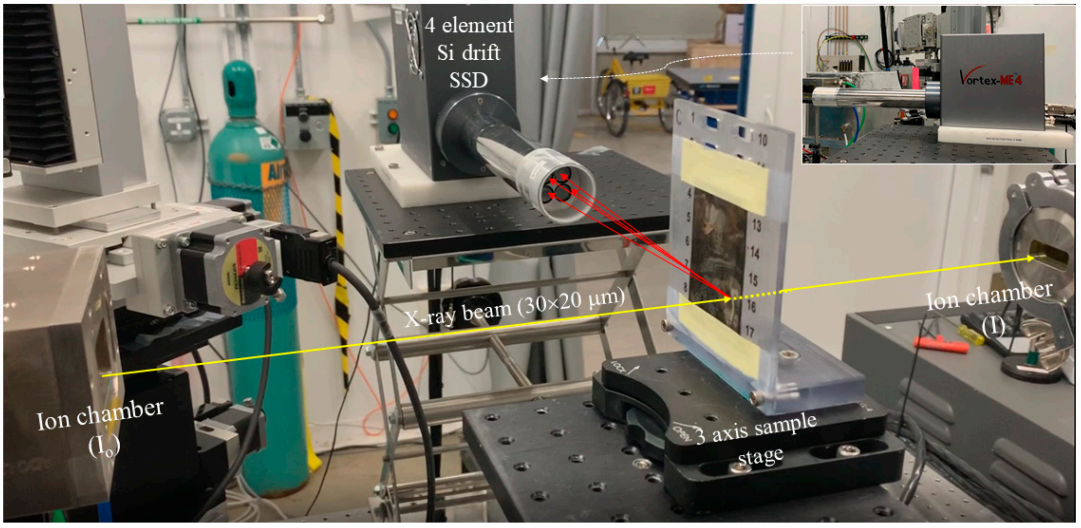

Figure S2. Experimental arrangement for the XRF imaging. The focussed beam (yellow line from left to right) with a spot size of 30×20 µm was stationary. The plate was mounted on a 3-axis stage which moves the plate across the beam with submicron precision pixel by pixel. The fluorescence X-rays are collected with a 4 element SSD (VotexME4). The data were stored in a multichannel analyzer (MCA). Desired energy windows were set to collect element sensitive maps (See **Figure S3**)

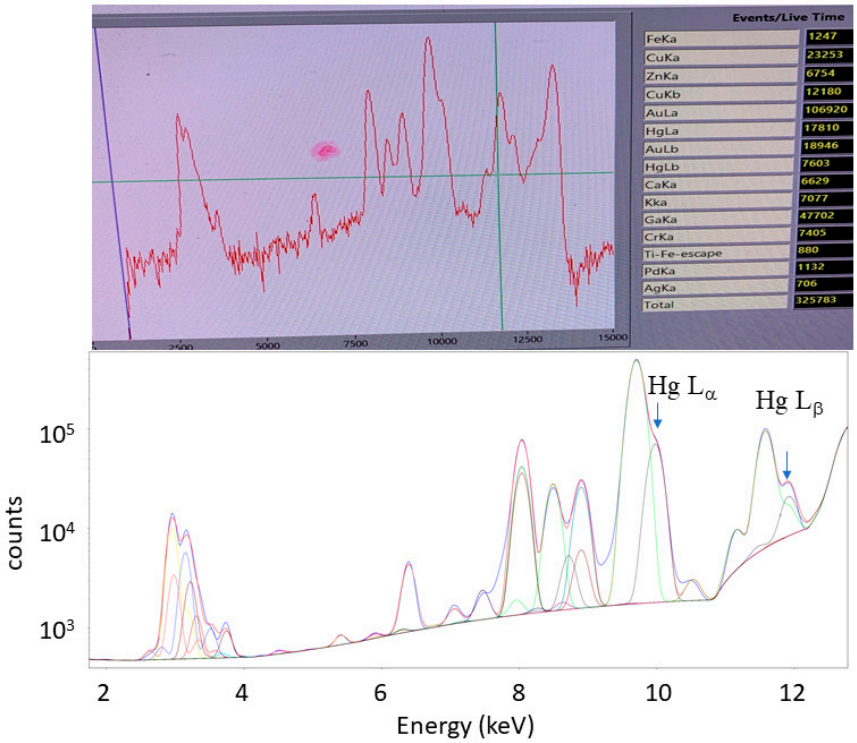

Figure S3. A snapshot of the MCA display during a scan (top); the x axis is photon energy and the y axis is intensity in a log plot. The Hg L intensities fit using PyMCA is shown in the bottom (both L_α and L_β are used, black dotted curve).

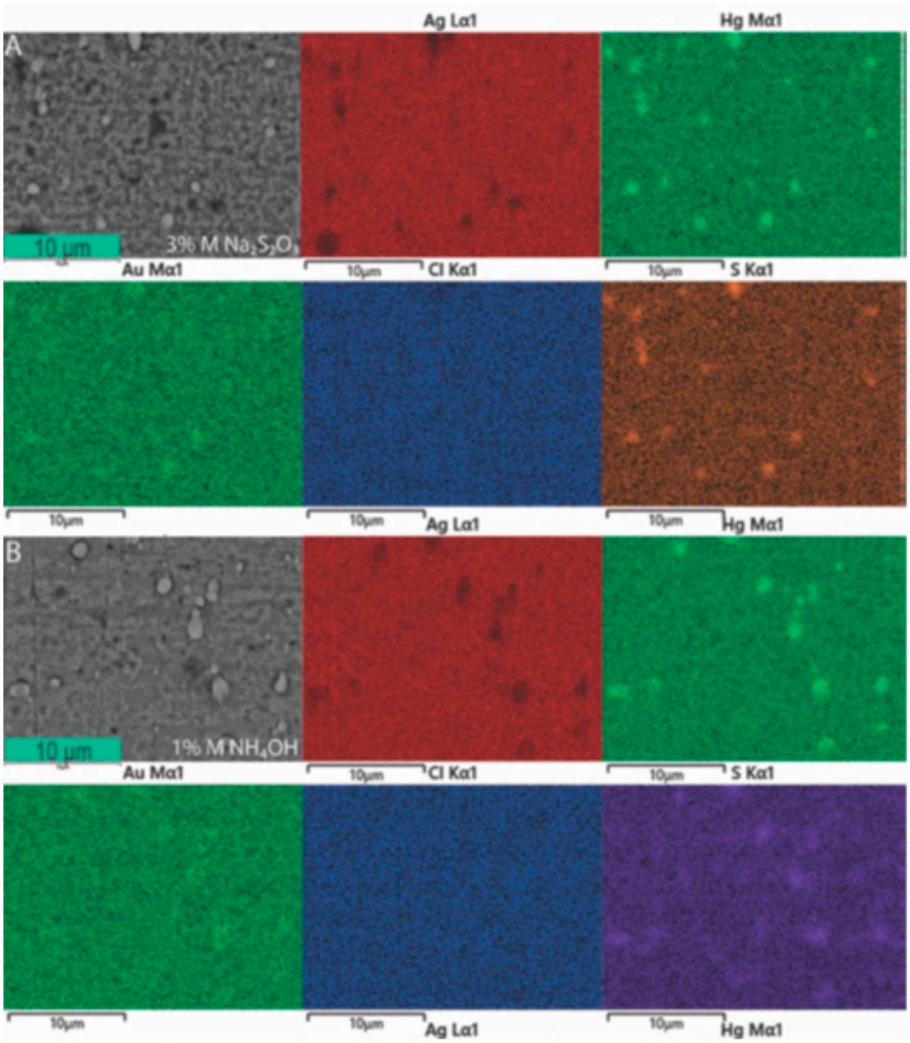

Figure S4. EDX maps of Ag, S, Au, Hg, Cl and the backscattered (BSE) SEM image (black and white) for the chemical cleaning solutions discussed in Figure 3. A: before B: after 3% Na_2SO_3.