

Gold enrichment in Staffordshire Hoard K1403: results of SEM-EDX analysis

Object Type Mount
Date 630-670

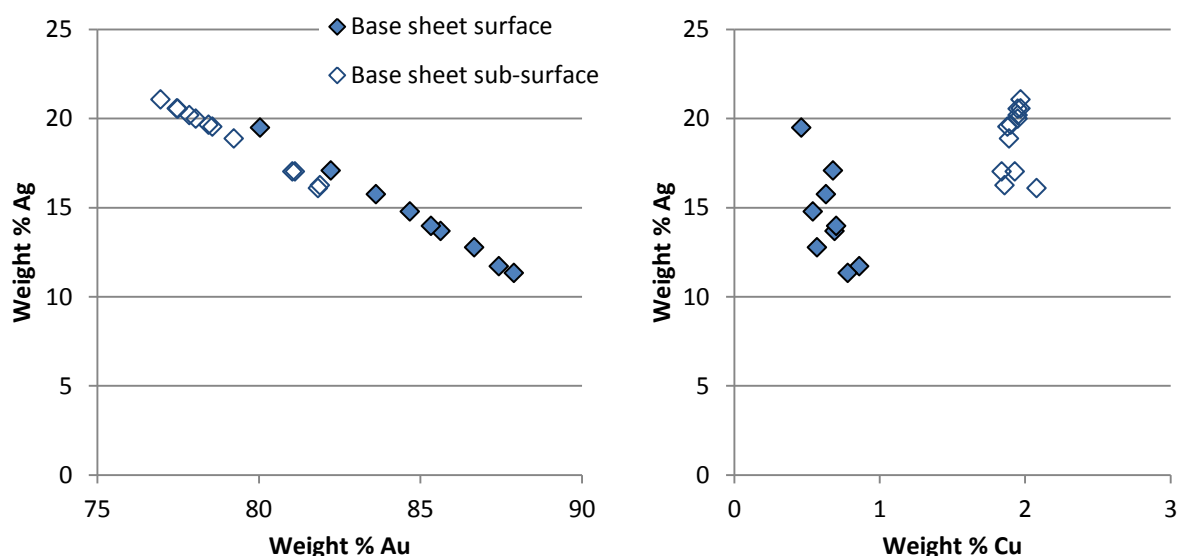
Decoration Filigree ☒ Glass ☐
Garnet ☐ Other ☐

SEM-EDX analysis was undertaken on the base sheet on the back of the mount.



Area analysed	No of analyses		Wt% Au	Wt% Ag	Wt% Cu
Surface	9	Average	84.8	14.5	0.7
		Standard Deviation	2.54	2.62	0.12
Sub-surface	12	Average	79.2	18.9	1.9
		Standard Deviation	1.82	1.81	0.06

SEM-EDX surface and sub-surface compositions (the results are normalised). This analysis was carried out as part of the gold enrichment study. For full details of methodology and associated results see report PR07444-10 and PR07444-15



Plots of gold vs silver and copper vs silver contents, based on SEM-EDX analysis, showing the differences between the sub-surface and surface analyses.

SEM-EDX analysis of the sub-surface indicated a composition of approximately 77-81 wt% gold, 17-21 wt% silver, the rest being copper. The analysis revealed a c.4.4 wt% loss of silver from the surface (a difference of c.23% from surface to core), which is indicative of treatment to deliberately enrich the gold colour of the metal. Only copper and small amounts of silver are normally lost from the surface during burial.

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Analysed September 2013

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