

Gold enrichment in Staffordshire Hoard K657: results of SEM-EDX analysis

Object Type Gem setting for cross
Date 630-670

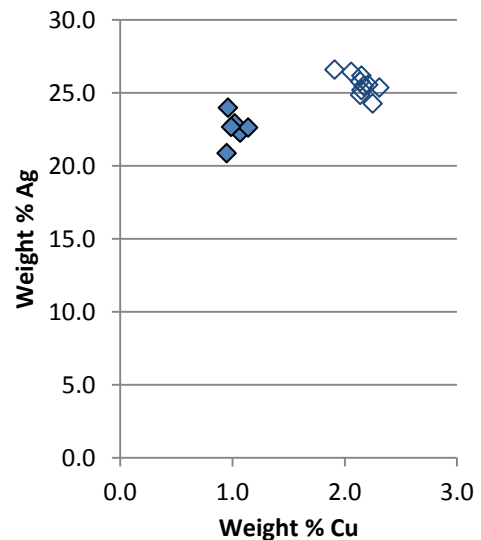
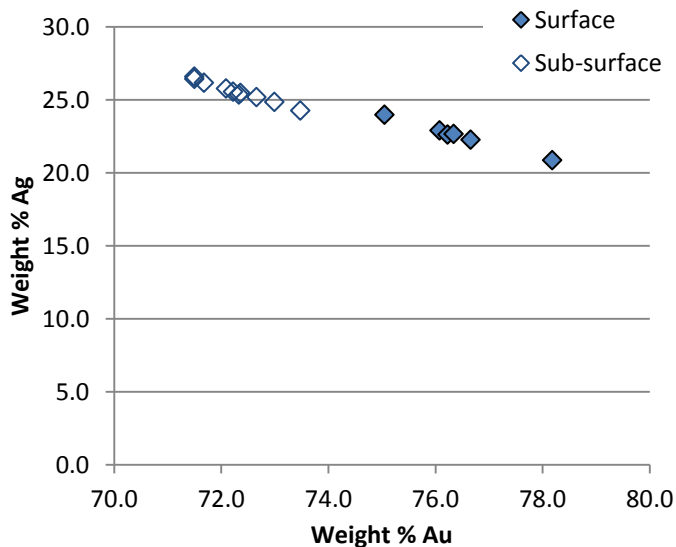
Decoration Filigree Glass
Garnet Other



SEM-EDX analysis was undertaken on the back of the sheet of the gem setting.

Area analysed	No of analyses		Wt% Au	Wt% Ag	Wt% Cu
Surface	6	Average	76.4	22.6	1.0
		Standard Deviation	1.02	1.01	0.07
Sub-surface	10	Average	72.3	25.6	2.1
		Standard Deviation	0.64	0.72	0.11

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



Silver/copper and silver/gold plots of the SEM-EDX data showing the differences between the sub-surface and surface analyses.

SEM-EDX analysis of the sub-surface indicated a composition of approximately 71-73 wt% gold, 25-27 wt% silver, the rest being copper. The analysis revealed a c.3.0 wt% loss of silver from the surface (a difference of c.12% 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 November 2013

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