B10 Petrographic summary of the Leiderdorp ceramics

J.R. Hilditch

B10.1 Group 1

Group 1a

L1/L10/L12/L13
Greyish, moderately silty FF
Medium to high fired (low optical activity) with moderate to poor sorting of inclusions
CF - quartz-feldspar aggregates, metamorphosed quartz.
FF – no visible calcareous component

Group 1b

L6/L7/L11/L14
Lower fired than 1a, less reduced in colour, revealing redder clay pellets and a rare visible mica component (muscovite?) in the FF.

Group 1c

L5/L16
Low fired version of Group 1, less silty FF and more channel voids present. Poorly sorted inclusions and a dark core, probably from insufficient firing/oxidation period during firing.

B10.2 Group 2

L2/L4
Highly dense silt fraction (FF) with moderate to poorly sorted inclusions and frequent voids
- L2 is bimodal (possible tempering?) with fewer voids; CF - smaller clay pellets (mostly oxidised), quartz-feldspar aggregates, metamorphosed quartz; FF - muscovite laths, no obvious indications of calcareous fraction
- L4 is higher fired, dark core colour (possible carbon build-up?); CF – as L2; FF – possible decomposed calcareous fraction (microfossils?)

L3
Very fine clay matrix, with rare silt (FF), non-calcareous. CF has same quartz-feldspar suite as rest of Group 2.

L8
Pale fired clay colour but no visible calcareous component. Low fired, reddish clay pellets, some visible iron oxides in clay matrix.

L9
CF has same quartz-feldspar suite as rest of Group 2, but with additional micrite (calc?) inclusions in CF, showing dark, dull optical properties (partially decomposed?). Frequent macro vugh voids, mostly aligned parallel to vessel margins.
L15
Unusual firing differences between core and margin – margins are redder, higher fired and show no potential biogenic inclusions though some suspicious voids may indicate pre-firing presence, BUT core has microfossil inclusions. CF has same quartz-feldspar suite as rest of Group 2.

B10.3 "Group 3" - L17

Very well sorted, frequent fine sand fraction
Frequent fine channel voids, aligned parallel to vessel margins (as are inclusion long axes)
Coarse fraction – Quartz (unudulose, seriate)
Feldspar (multiple twinning)
Clay pellets (same optical activity as matrix but different orientation)
Fine fraction – Calcareous microfossils, partially decomposed,
Serpentinite/glauconite pellets(?) (dark yellow in PPL, almost isotropic in XPL)
Rare muscovite laths
Rare green amphibole
Rare microcrystalline quartz/chert

B10.4 Summary

I cannot say much on provenance issues but the differences between the groups can be summarised as follows:

Group 1 samples are non-calcareous bearing, iron-rich clays with a narrow range of quartz-feldspar low-metamorphosed inclusions, probably from a mature, secondary clay source.

Group 2 displays some similarities with the quartz-feldspar inclusions of Group 1 but exhibits more variable textures and the intermittent presence of microfossils (often burnt out or partially decomposed due to firing practices).

"Group 3" is a lone sample which displays a more varied range of FF inclusions, suggesting a different clay source, though similar CF inclusions (quartz-feldspars and microfossils) to samples in Group 2.

These differences are minor overall, reflecting the variability of the clay source with respect to microfossils, mica frequency and potential dehydration minerals (evaporite deposits associated with lakes?) but underlining their similarity in the coarse fraction (all low-metamorphosed quartz-feldspar series rocks with undulose extinctions and seriate textures, feldspar is occasionally altered and partially replaced by fine micas).