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Assessment of archaeometallurgical residues from the A31, Killyneese 2, Co. Derry (AE/15/32)

Dr Tim Young
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Dr T.P. Young

Abstract

Archaeological investigations at
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Contents

Abstract 1

Methods 2

Results
Description of Residues 2

Interpretation

Further work 2

References 2

Table 1: summary catalogue 3

Methods

The material described here derives from archaeological interventions at Killyneese 2 on the A31 scheme, conducted by IAC Ltd. This project was commissioned by Maeve Tobin.

All materials were examined visually with a low-powered binocular microscope where required. As an evaluation, the materials were not subjected to any high-magnification optical inspection, not to any form of instrumental analysis. The identifications of materials in this report are therefore necessarily limited and must be regarded as provisional.

Results

Description of residues

This site yielded a single fragment of fuel-ash slag from context 75.

The piece was an unusual, dark, quartz-rich, fuel ash slag (FAS). Coke-like in appearance, it had one flat (very slightly concave) surface, with an irregular rear face. It showed varying degrees of partial melting, involving both blebs and fragmented material. The flat face showed very subtle striated impressions, possibly of wood.

Interpretation

Materials such as this piece result from partial melting of a ceramic substrate, in part under the influence of the fluxing effect of the alkali- and alkali earth- rich ash of a fuel, usually wood ash.

In this instance, the piece, with its well-formed front surface resembles pottery, and an origin as an over-fired pottery fragment cannot be excluded.

This piece shows fragmental textures which may suggest that the piece formed as a result of partial melting of a soil-like substrate. In this case the piece might have received its almost planar front face either through pressure of fuel, through that face being originally in contact with wood (as in the burning of soil-coated stake) or even as an original prepared smooth surface on the inside of a hearth or oven.

Some metallurgical technical ceramics show flat faces where they have been applied to a metal surface during brazing or during carbon-control. Such pieces are typically preserved with a pale grey colour (e.g. the brazing residues described by Young 2012).

It is probably unlikely that this piece was generated during a metallurgical process, although that cannot be excluded. The precise originating process is, however, unknown.

Further work

The single piece of residue from the site is unlikely to be of archaeometallurgical origin, although the precise process that generated the material is unknown. It is unlikely that further analysis would be able to shed light on this or to provide any other additional archaeologically useful information. Consequently, no further analysis is recommended, unless specific questions are raised from its archaeological context.

The sample should be deposited with the appropriate institution with the site archive.

References

YOUNG, T.P. 2012. Appendix 3 -. Exploiting the bog -: iron production and metalworking, pp. A3.1 – A3.60 *In:* P. Stevens & J. Channing, *Settlement and Community in the Fir Tulach Kingdom*. National Roads Authority and Westmeath County Council.

Table 1: summary catalogue of macroscopic materials. All weights in g.

context	sample	sample wt.	item wt.	item no.	item notes
75	1	5	5	1	unusual dark quartz-rich FAS. Coke-like in appearance with one flat (very slightly concave) surface, with irregular rear; varying degrees of partial melting, involving both blebs and fragmented material; flat face shows very subtle striated impression - of wood?

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Unit 6,
Western Industrial Estate,
Caerphilly,
CF83 1BQ

Office:	029 20881431
Mobile:	07802 413704
Fax:	08700 547366
E-Mail:	Tim.Young@GeoArch.co.uk
Web:	www.GeoArch.co.uk