APPENDIX 1 - DATING

1.1 Radiometric Measurements

Introduction

1.1.1 Two samples for radiometric measurements were sent to the Scottish Universities Research and Reactor Centre, East Kilbride. The first was a coppiced hazel (*Corylus avellana*) stake that had been recovered from a stratigraphically late silt fill of well 11010 at Thurnham Roman Villa (sample GU-9077). The second was a 34g fragment of red deer metatarsal from the probable Middle Bronze Age waterhole 10288 (sample AA-39808; GU-9083).

1.1.2 The red deer metatarsal was found to contain insufficient collagen for radiometric dating. It was therefore submitted to the University of Arizona AMS facility for Accelerator Mass Spectrometer dating.

1.1.3 The samples were selected in order to confirm the dating of the late well silts and the waterhole. This was undertaken in accordance with the Fieldwork Event Aims for the site, which included the recovery of a dated occupation sequence for all phases of the site's development.

Results

1.1.4 Copies of the radiocarbon dating certificates are appended to this report.

1.1.5 Sample GU-9077, the hazel stake, has been dated to cal AD 259-539 at the 95% confidence level.

1.1.6 Sample AA-39808 (GU-9083), the red deer metatarsal, has been dated to cal AD 978-1155 at the 95% confidence level.

Potential for further work

1.1.7 The date from the hazel stake broadly confirms the interpretation reached from the stratigraphic data and spot dating, that the well was one of the latest features to remain in use on the site, and was silting up during the 4th century. This dating can be used to inform further analysis of the feature.

1.1.8 It is highly unlikely that further radiocarbon dating will reduce the range of this date. In general, for the Romano-British period, artefacts such as pottery and coins can give a far more precise indication of date than radiocarbon.

1.1.9 The date from the red deer metatarsal is unexpected and suggests that this piece of bone was intrusive; there is little doubt about the general dating and affinities of the Middle Bronze Age metalwork. Further analysis of the stratigraphy will be required to clarify the extent and significance of later disturbance to this feature.

1.1.10 It is considered that there is no potential for further radiocarbon dating.