

6. RADIOCARBON DATING

Twelve dating samples (GU-35961–66; GU-36500–05) were submitted to the Scottish Universities Environmental Research Centre (SUERC). Eight samples of animal bone proved to contain insufficient carbon to return dates, and replacement samples could not be supplied due to the poor nature of the bone assemblage.

Two viable samples, a piece of waterlogged hazel (SUERC-57193) and a fragment of horse femur (SUERC-58186), recovered from the southern terminus of the inner ditch's western entrance (Context 602 (Slot 060A) and Context 270 (Slot 060A; Illus 18) respectively), were dated (Table 6). C602 was the primary fill while C270 was the middle fill of the ditch. They provided dates of 387–204 BC and 406–233 BC respectively, correlating well with each other, and providing a *terminus post quem* of 204 BC for the infilling of the inner ditch.

The other two samples, a horse molar (SUERC-58185) and a burnt cattle mandibular hinge

(SUERC-58486), recovered from the base of the southern terminus of the inner ditch's eastern entrance (both from Context 172, Slot 115D; Illus 15), returned dates of 799–545 BC and 1608–1433 BC respectively (Table 6). These dates have no overlap with each other and are also earlier than the dated samples retrieved from the western entrance. The dated samples provide a *terminus post quem* for the beginning of the infilling of the inner ditch, of 545 BC at the earliest.

On the basis of the dating evidence, little can be said with certainty about the date of the site apart from that the inner ditch probably began to silt up some time roughly within the third quarter of the first millennium BC. The only other evidence for dating the site is provided by the shale roughouts. Hunter (2007: 208) noted that the bulk of the shale material from Braehead could be broadly dated at 600–400 BC, which overlaps with three of the radiocarbon dates from Winchburgh; it can be assumed that the shale working at Winchburgh is from a similar period due to the similarities in the process and products.

Table 6 Radiocarbon dates (calibrated using OxCal v4.1.7)

SUERC lab no.	Context/ Slot	Species	Lab age BP	Cal date (1 σ)	Cal date (2 σ)	$\delta^{13}\text{C}$ ‰
57193	602/060A	Wood: <i>Corylus avellana</i> (hazel)	2234 \pm 30	372–211 BC	387–204 BC	-27.7
58186	270/060A	Animal bone: horse femur	2295 \pm 29	401–363 BC	406–233 BC	-22.0
58185	172/115D	Animal tooth: horse molar	2537 \pm 31	794–590 BC	799–545 BC	-23.2
58486	172/115D	Burnt animal bone: cattle mandibular hinge	3231 \pm 28	1529–1451 BC	1608–1433 BC	-16.1