R
C RadioCarbon Dating
D The Old Stables
East Lockinge
Wantage
Oxon, OX12 8QY

Measurement Report

for

Hamish Low

10th November 2005

RCD-RADIOCARBON DATING
RADIOCARBON MEASUREMENT REPORT

1.0 Analysis Required

Radiocarbon dating of piece of bog oak September 2005.

2.0 Measurement Procedure

2.1 Pretreatment

The piece of wood supplied was planed across all the rings to provide a 20g sample. This was then given a series of acid and alkali washes to remove any non-contemporaneous carbon and oven dried.

2.2 Chemical Processing

The dried sample was combusted in pure oxygen in a high pressure combustion bomb to produce CO_2 and the CO_2 is converted to C_6H_6 through the stages of lithium carbide and acetylene. The quantity of CO_2 produced is also recorded to enable the percentage carbon calculation.

2.3 Counting

The produced C_6H_6 sample was made up for counting, using butyl-pbd as scintillant, and counted in a Wallac liquid scintillation counter optimised for low level counting in association with both background and modern standards, the modern standard being NBS Oxalic acid which is the primary international standard supplied to all Radiocarbon measurement laboratories. The sample was counted to accumulate >40,000 counts (± 0.5% counting statistics). The error term given represents full replicate sample reproducibility and not counting statistics alone.

3.0 Results

The results are given in the table below as years BP for the ^{14}C measurement (corrected for $\delta^{13}C$) and per mil (‰) for the $\delta^{13}C$.

RCD Ref	Submitter's Reference	Conventional Radiocarbon Age (Years BP)
RCD-6194	Bog Oak	4350 ± 70

4.0 Calibrated Age Ranges (Calendar Years)

In order to obtain a result in calendar years (AD or BC) the conventional radiocarbon age is calibrated using the internationally agreed calibration graph derived from radiocarbon dating of tree rings. The calibrated age ranges for this sample are given below and are shown graphically in Figure 1 with the relevant portion of the calibration graph.

68% confidence intervals (1σ) are:		3090 cal BC to 3060 cal BC
	plus	3030 cal BC to 2890 cal BC
95% confidence intervals (2σ) are:		3320 cal BC to 3230 cal BC
	plus	3180 cal BC to 3150 cal BC
	plus	3120 cal BC to 2870 cal BC

R L Otlet/A J Walker
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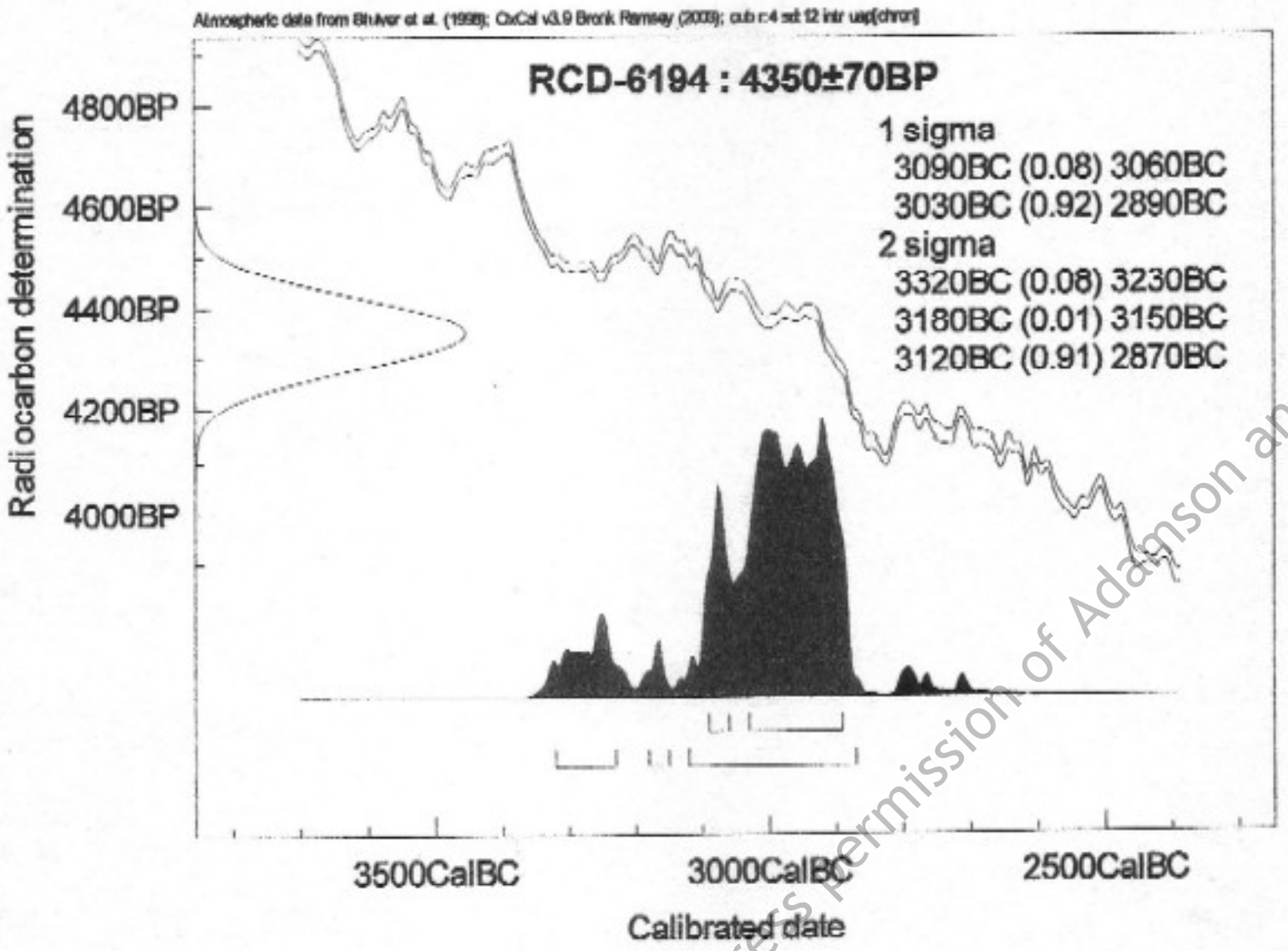

Figure 1