This paper is the second of two papers, describing probe measurements of deposit buildup and removal (shedding), conducted in a 350 MWth suspension-fired boiler, firing straw and wood. Investigations of deposit buildup and shedding have been made by use of an advanced online deposit probe and a sootblowing probe. The influences of feedstock (i.e., straw share in wood), flue gas temperature (600–1050 °C), probe surface temperature (500 and 600 °C), and probe exposure time on deposit shedding have been quantified. Quantification of naturally occurring deposit shedding and deposit shedding during plant sootblowing was made via deposit mass uptake signals obtained from the deposit probe. The deposit shedding process was characterized by calculation of the amount of deposit removed at a shedding event (g/m²) and the frequency of the shedding events (h⁻¹). The results showed that the shedding process is stochastic and that the amount of deposit shed varies even at constant local conditions. However, the deposit shedding rates showed an increasing trend with increase in flue gas temperatures and probe deposit mass loads. The deposit shedding rate was in most cases higher at a probe temperature of 500 °C than at a probe temperature of 600 °C. A possible reason for this is partial melting and/or sintering of the innermost deposit layer (rich in K, Cl, and S) at higher probe surface temperature. This could cause the adhesion strength of the deposit to the probe to increase at the higher probe temperature. Quantification of the necessary peak impact pressure (PIP) needed to remove the deposit was also made by use of a sootblowing probe in conjunction with the deposit probe. Results of deposit removal by artificial sootblowing showed that the deposits formed on a 500 °C probe temperature and at exposure times of <91 h can be removed with a PIP of <55 kPa. However, increase in probe exposure time and/or probe surface temperature (600 °C) significantly increases the PIP needed to remove the deposits.