

## Weight Loss on Ignition (LOI)

### Initial Ashing

1. Label and weigh aluminum weigh-boats with sample ID.
2. Tare and pour ~50g of soil into aluminum weigh-boat and place in the oven at 105°C for 24 hours.
3. Label and weigh a clean ceramic crucible.
4. Tare and pour sample into crucible and place in desiccator.
5. Weigh sample three times and record all three weights.
6. Heat muffle furnace to 550°C.
7. Ash samples for 5 hours.
8. Weigh samples three times in the crucible. Record all three weights.
9. Calculate LOI from (1)

### Second Ashing

10. Re-dry samples in oven at 105°C for 24 hours.
11. Weigh sample three times and record all three weights.
12. Heat muffle furnace to 950°C.
13. Ash samples for 2 hours.
14. Re-weigh samples in crucibles.
15. Calculate LOI from (2)

### Calculation

$$\text{LOI}_{550} = ((\text{DW}_{105} - \text{DW}_{550}) / \text{DW}_{105}) * 100 \quad (1)$$

$$\text{LOI}_{950} = ((\text{DW}_{550} - \text{DW}_{950}) / \text{DW}_{105}) * 100 \quad (2)$$