

MEASURING CO₂ PRODUCTION USING SODA LIME: SOIL MOISTURE CONTENT DATA FORM

For use with Protocol 8b: Determining Soil Moisture Content

Complete one form for each soil sample.

Name(s) _____ Date _____

Soil sample ID number _____

Soil sampling location _____

Type of area sampled (e.g., forest, schoolyard) _____

Date soil sample was collected _____

Describe the soil sample (e.g., number and size of rocks and roots in sample; did the soil appear to be very wet or very dry?)

Was the soil sample well mixed? _____

Date and time soil subsample placed in drying oven _____

Date and time soil subsample removed from drying oven _____

or, time and power level required to dry subsample in microwave _____

Protocol 8B, Part 1: Determine % moisture, using a subsample.

Step 2:

Weight of beaker = _____ g

Step 3:

wet wt of soil	=	combined wt of beaker and soil	-	wt of beaker
	=	_____ g	-	_____ g
	=	_____ g		

Step 5:

dry wt of subsample	=	combined wt of beaker and soil after drying	-	wt of beaker
	=	_____ g	-	_____ g
	=	_____ g		

Step 6:

$$\text{Moisture content} = \frac{\text{wet wt} - \text{dry wt}}{\text{wet wt}} = \frac{\text{g} - \text{g}}{\text{g}}$$

Moisture content = _____

This result is expressed in decimal form for use in dry weight and CO₂ calculations. To express as a percentage instead, simply multiply by 100.

Protocol 8B, Part 2: Adjust total sample to 50% moisture, if needed.

Step 1:

Total soil weight = _____ g

Step 2:

$$\begin{aligned} \text{actual water wt of full sample} &= \text{total soil wt of full sample} \times \text{moisture content of subsample} \\ &= \text{_____ g} \times \text{_____ g} \\ &= \text{_____ g} \end{aligned}$$

Step 3:

$$\begin{aligned} \text{dry wt of full sample} &= \text{total soil wt of full sample} - \text{actual water wt of full sample} \\ &= \text{_____ g} - \text{_____ g} \\ &= \text{_____ g} \end{aligned}$$

Step 4:

$$\begin{aligned} \text{wt of water to be added} &= \text{desired water wt} - \text{actual water wt} \\ &= \text{_____ g} - \text{_____ g} \\ &= \text{_____ g} \end{aligned}$$