Mineral Soil Grinding Protocol

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**Objective:** Grind soil samples down into a representative homogenous powder that can then be run through our element analyzer for CN analysis. **PRIORITIZE CLEANLINESS AND MINIMIZING POTENTIAL CROSS-CONTAMINATION!**

* Samples are in the bankers’ boxes on the shelves in the office – these are the samples that we processed for 2-5 mm CWD
  1. Bags in boxes are organized by burn scar (McCr, NuCr, Hays, etc)
  2. Work through 1 site at a time, work through 1 box at a time
* Grab an 20 mL scint vial from the shelf above the grinding station for each sample
* Match the ID on the soil bag to the label from the sheet. Put the label on the scint vial and write the sample number on the lid.
* Grab a large mortar & pestle from soil grinding drawer and set up your supplies at lab bench/table/fume hood
* Put on gloves
* Clean your supplies thoroughly with ethanol and let dry
* Grind the soil to a fine powder
  1. Leave in and grind any twigs/roots <2 mm diameter or rocks <2 mm. If you find twigs/roots or rocks >2 mm please consult with Helena/Zach
* Once the sample is homogenous and very fine, use a funnel to pour the sample from the mortar into the scint vial. **Double check you’re pouring your sample into the appropriately labeled jar!**
  1. If there is more sample than will fit in the scint vial, fill the vial with a representative subsample (make sure it’s well-mixed!) and throw away remaining sample.
     1. We want to make sure our sample is representative by grinding as much of the sample as possible, but we want to prioritize cleanliness above all else (i.e. if a little sample spills on the table, it’s ok to leave it to avoid contaminating the entire sample instead of scooping it into the vial)
  2. Put the empty bag into the large ziploc bag next to the scint vials labeled “CCE ground empty bags”
* Mark that the sample has been completed on the progress sheets by adding the date ground and your initials. If you have any notes on the sample you can add them in the notes column. **Double check that you marked off the correct sample!**
* Put the labeled scint vial with the sample into the tray
* Before starting the next sample, you need to clean out the mortar and pestle, funnel, and any other tools you used. Wipe everything with a dry paper towel once to get out remaining soil residue. Then soak a kim wipe or paper towel in ethanol and wipe away any sample. Once you can’t see any more sample, wipe down everything one more time. **KEEPING EVERYTHING CLEAN AND MINIMIZING CROSS-CONTAMINATION BETWEEN SAMPLES IS THE MOST IMPORTANT PART OF THIS PROCESS**
* You can use the same gloves for all samples, but between samples, spray gloves with ethanol and wipe with a paper towel.
* Try to keep your work area clean. Use a fresh piece of deli paper and wipe down work space with ethanol and a paper towel as needed. **Please, please, please invest time in cleaning between samples!**
* When you are finished for the day, please return the box of unground samples back to the office and make sure you’re not leaving anything out on the bench space.