

Section 1 - Personnel capability checklist for laboratory procedures

During training, each person who will be working in the lab needs to complete this list with initials as they master skills and gain knowledge. Only after this list is complete, can a new user work alone in the lab.

NAME: _____

	Item	Date	Personnel initial	Trainer initial
GENERAL OPERATING AND SAFETY	Understand importance of producing clean quartz			
	Understand access limitations for lab			
	Complete on-line safety courses			
	Complete in-person safety courses (new grad students)			
	Review incident flow chart			
	Know which chemicals are used in the lab and have read the MSDS for all chemicals in the lab			
	Understand chemical storage and movement procedures			
	Understand acid bottle waste disposal procedure			
	Understand use of all personal protective gear in laboratory			
	Understand where lab coats and non lab coats are hung			
	Understand policy on open toed shoes			
	Understand policy on food in the lab			
	Know location of eyewash and safety shower and know how to use each			
	Know when and how to test eyewash			
	Know where Calcium Gluconate cream is located and how and when to use it.			
	Know where fire alarm, red phone, and fire extinguisher are and how and when to use them			
Read and understand the monthly self inspection cards				
Understand how and when to test ultrasounds				
SAMPLE	Make sample datasheet			
	Understand how to enter sample information in datasheet			
	Understand the importance of tracking every action in the datasheet			
	Understand how and when to enter information in a sample sheet			

	Item	Date	Personnel initial	Trainer initial
HCL ETCHING	Know where trays and beakers are kept			
	Understand how to wash samples			
	Understand importance of double labels			
	Understand where and how HCl is stored			
	Understand how to add 6N HCl to samples			
	Understand how to mix 6N HCl safely			
	Understand how and why to fill ultrasounds			
	Understand how to set timers			
	Understand how to rinse, reload samples and do final wash to prepare samples for drying			
	Understand how to containerize HCl waste for pick up			
	Understand how oven works			
	Understand how to dry and label samples after HCl			
HF and HNO3 ACID ETCHING	Understand safety gear and precautions needed to use concentrated HF and HNO3 including gloves, smock and face shield			
	Understand where HF and HNO3 are stored			
	Understand how, why and how often to check bottles for stress cracks			
	Understand how to label bottles and the importance of labeling lids			
	Understand how to lift bottles safely			
	Understand how to use digital balance			
	Understand how to date new bottles			
	Understand how to enter sample weight			
	Understand how to dispense HF and HNO3 safely			
	Understand how and how much to fill bottles			
	Understand how to indicate that etches have been done in the sample datasheet			
	Understand how to rinse bottles between etches			
	Understand how to rinse bottles after last etch			
	Understand how to condense low quartz samples into a single bottle for drying			
	Understand how and where to dry samples			
	Understand how to label tubes to indicate that etching is complete			
	Understand how to transfer sample to tubes and the importance of using new paper for each sample; understand use of alcohol for small sample transfer			
Understand the importance of having only one sample out of the oven at any time.				
Understand the importance of and process for cleaning bottles after use				

	Item	Date	Personnel initial	Trainer initial
BURNING	Understand when and why burning is important and when it should be and should not be done			
	Understand where crucibles are stored			
	Understand how to label crucibles and how to fill in the furnace layout map			
	Understand how to load the crucibles and the furnace			
	Understand how to turn on the furnace			
	Understand how to return the samples to their vials and properly label the vial to indicate the sample has been burned			
	Understand how to enter burning step in the datasheet			
DENSITY SEPARATION	Understand when density separation is needed.			
	Understand importance of recycling LST			
	Understand how to change LST density			
	Understand why LST is stored in two different bottles			
	Understand why there is a quartz chip and how it is used			
	Understand what the stopcock is and how to grease it			
	Understand how and when to hook up the vacuum system			
	Understand how to load filter paper			
	Understand how to separate quartz from mafic minerals by adjusting density of LST			
	Understand how to extract the purified quartz			
	Understand how to reclaim the dilute LST			
	Understand why overnight hotplate operation is not allowed			
	Understand how to clarify cloudy LST			
	Understand how to make purple LST clear			
Understand how to transfer clean quartz back into the proper tube and how to label the tube to indicate that mineral separation has been completed				
Long-etches	Understand that 72-hour and 1 week etching is done in 1 liter bottles			
	Understand that long etches uses weaker acid			
	Understand how to label tubes after long etching			
	Understand how to do final magnetic cleaning			
MATERIALS	Understand how and why we keep an acid tally			
	Understand how and when to order more acid			
	Understand how and when to ask Paul about ordering more LST			
	Understand how fill out waste tags			
	Understand how old sample bottles are disposed			