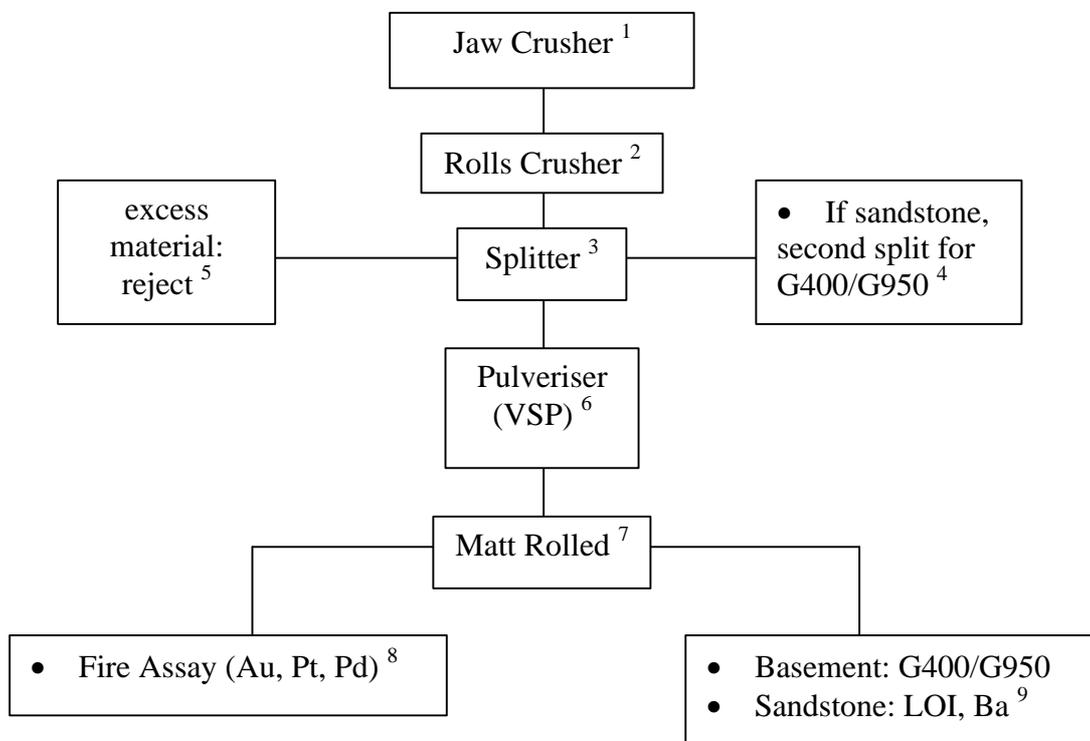


Sample Preparation
Carried out by North Australian Laboratories Pty Ltd, Pine Creek



Notes:

1. Jaw crusher (Jaques 8 x 5"): sample crushed to nominal < 6 mm.
2. Rolls crusher (Jaques 12 x 6"): sample crushed to nominal < 2 mm.
3. Splitter generates 8:1 representative sample. If basement material, larger split is retained for pulveriser, and smaller split rejected.
4. For sandstone material, smaller split of rolls crushed material forwarded to NTEL for complete G400/G950 analysis. Mass of sample is approximately 30g.
5. Excess material returned to original calico bag.
6. VSP (Vertical Spindle Pulveriser) pulverisers sample to 100 μm . LM1 and LM5 pulverisers are not used because of chromium steel contamination issues.
7. VSP cause some density stratification within the pulverised sample. Matt rolling aims to achieve an homogenised sample.
8. Fire Assay sample or 'pulp': mass is 300 - 500g. Fire assay samples undergo several more preparative steps including:
 - (i) weighing of pulp and mixing with a flux.
 - (ii) roasting the sample to $\sim 1800^{\circ}\text{C}$ to fuse Au-Ag-PGEs into a lead button and separating other elements into the slag.
 - (iii) pouring away unwanted slag.
 - (iv) heating the lead button in a bone ash cupel in a second furnace. This process, known as cupellation, adsorbs the lead oxide and leaves the precious metals in a bead or prill in the cupel. The prill is typically millimetre-sized.
 - (v) The prill is subsequently dissolved in an organic solvent DIBK. The resultant solution is read using an AAS. For Cameco samples this analysis is conducted by NTEL.
9. Second pulp: mass is approximately 50g. For basement material this pulp is analysed for the entire G400/G950 suite. For sandstone material this pulp is used to calculate LOI and analyse for Ba. All other analyses for sandstone samples are obtained from the split of rolls crushed material (4).

(from Carter, 2004b).