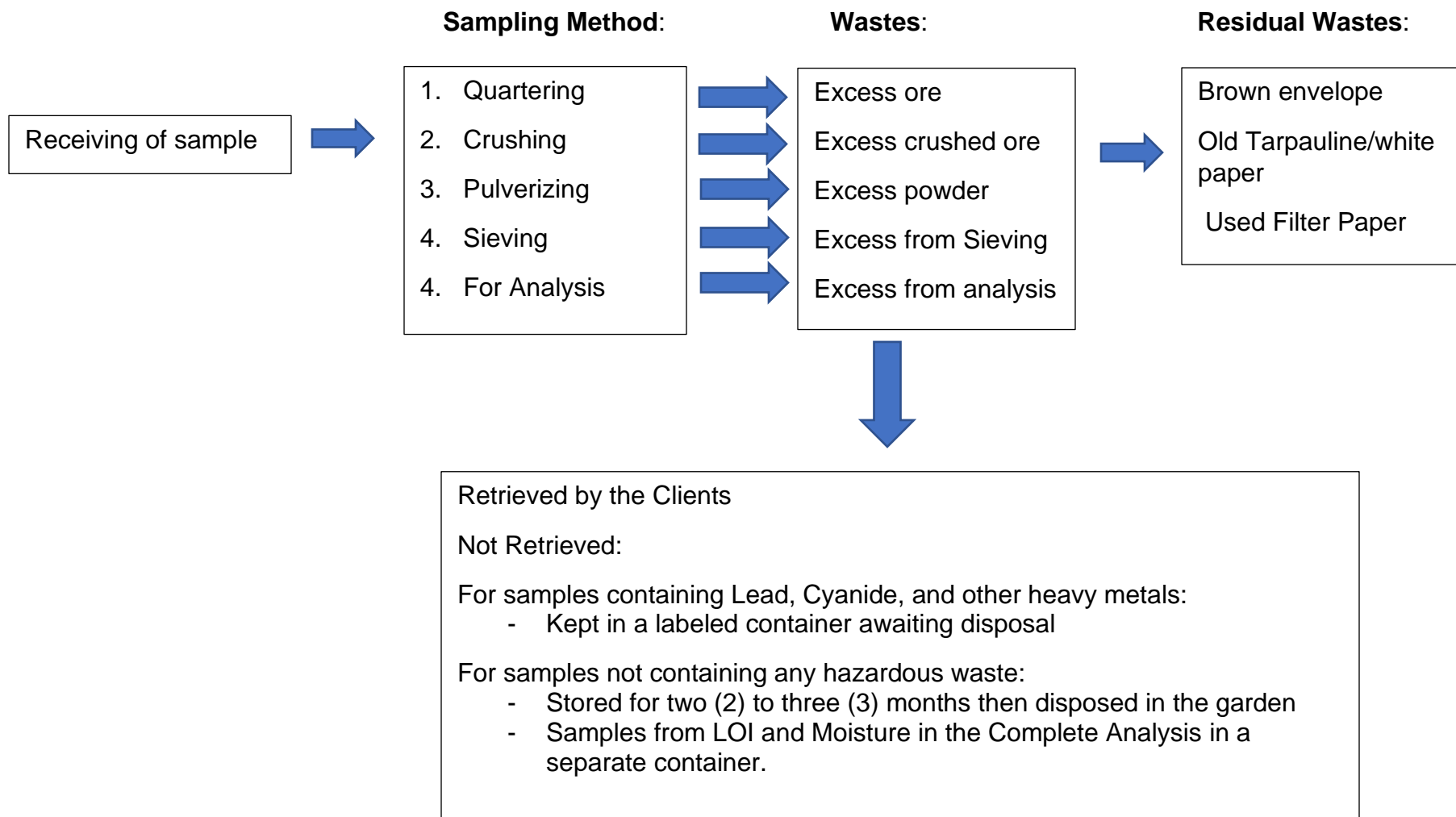








FLOWCHART ON THE HAZARDOUS WASTES GENERATED DURING ANALYTICAL PROCEDURE

A. SAMPLING METHOD



B. WASTES FROM ANALYSIS

Analytical Method:		
1. Lime and Magnesium Analysis	After titration with EDTA 	Kept in a "EDTA WASTE" – labeled bottle
2. Copper Analysis	After titration with $\text{Na}_2\text{S}_2\text{O}_4$ 	Kept in a "COPPER WASTE" – labeled bottle
3. Silica/Complete Analysis	After analysis of Mixed Oxides, Iron, Lime and Magnesium 	Acid waste in "ACID WASTE" – labeled bottle Basic waste in "BASIC WASTE" – labeled bottle After cleaning of Platinum Crucible with KHSO_4 and leach in boiling water – water in "SPECIAL LIQUID WASTE A" labeled bottle
5. Iron Analysis	Waste containing Mercuric Chloride and Stannous Chloride 	Kept in "SPECIAL LIQUID WASTE BOTTLE B (with Mercury)" – labeled bottle
6. Sulfur Analysis	Waste containing Acid and Methyl Orange 	Kept in an "ACID WASTE" – labeled bottle
7. Water Sample	Excess after sampling 	Treated with Nitric Acid (HNO_3) for Mercury (Hg) analysis to "ACID WASTE" – labeled bottle Treated with Sodium Hydroxide (NaOH) for Cyanide (CN) Analysis to "BASIC WASTE" – labeled bottle Non-Treated waste to the sewerage system

SPECIAL LIQUID WASTE A – for liquid wastes containing acid and washings from crucible with Hydrofluoric Acid (HF)

SPECIAL LIQUID WASTE B – for liquid wastes containing Sulfuring Acid (H_2SO_4), Phosphoric Acid (H_3PO_4) and Mercuric Chloride (HgCl_2)

C. WASTES FROM GOLD ANALYSIS

Process of Analysis

Addition of Fluxes and charging on a Furnace at 1,000°C

Hammering of Slag to obtain the core Containing the gold/silver

Charging the core in cupel in a Cupellation Furnace

Removal of alloy of gold and silver from cupel and heated with 1:1 Nitric Acid and then washing with 1:4 Nitric Acid and then water.

By heating over a blue flame, gold is obtained

Fuel fumes
Excess Oil



Crushed slag



Cupel with Lead
Fumes from
Furnace



Acid washings



Fumes while
burning



Wastes Generated

Fumes are caught through exhaust fan and fumehood and expel outside

Excess oil/spillages on pouring, wipe with rag and clean with soap and water. Rag stored in a separate container for proper disposal

Crushed slag is transferred to a container for proper disposal

Cupel with Lead is kept in a container for disposal

Fumes from Cupellation Furnace is pass through Fumehood with Scrubber

Acid washed with water is kept in "ACID WASTE" – labeled bottle

Fume is caught in an exhaust fan and expel outside