APPENDIX 1: Joint Analysis (NAA group)

Geological samples

1. Goals

(i) Internally:

a. To improve the quality of the data result of NAA

b. To use other analytical methods for analysis

(ii) Externally: To publish the comparison result data in the journal from FNCA members

2. Samples

3 sediment samples (No. 1, No. 2, No. 3) were distributed during the FNCA 2024 meeting and another 4 (soil and igneous rock) samples will be sent later.

3. Analytical methods

(i) INAA (compulsory)

(ii) others: XRF, ICPMS, ICP-OES

4. INAA Arrangements

(i) Mass of the sample: approximately 100 mg

(ii) Replicate (3 to 5), several times irradiation, but only submit 1 dataset (average ± SD for each element)

(iii) Standard Reference Materials (SRMs): for comparative method define the SRMs, for k_0 method no need.

(iv) Provide the experimental information of INAA:

a. irradiation time

b. cooling time

c. measurement time

(v) Provide the information of elemental determination:

a. energy (keV) used for each element

b. moisture content

c. quantitative method (k_0 or comparison)

d. repeatability (1 s) of replicate analyses

5. Data submission

(i) By when

Date of submission: 15th May 2025 (for INAA data)

Person in charge: Dr Shirai as a key person for compilation data

Next FNCA meeting in October 2025 at Vietnam (tentative)

(ii) Format: summary data, publish data

Format of result datasheet will be sent by Dr Shirai

a. Major elements (Al, Ti, Na, K, Ca, Mg, Mn, Fe): in weight percentage (wt%)

b. Other elements: in ug/g