

IAEA-ASSISTED SAHEL PROJECT RAF7011: REPORT OF NIGERIA ON EQUIPMENT PROCUREMENT AND TRAINING

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OUTLINE OF PRESENTATION

1. First Batch of Field Equipment Supplied by IAEA
2. Second Batch of Field Equipment Supplied by IAEA
3. Laser Spectroscopic Liquid Water Isotope Analyzer.
4. Training.

1. FIRST BATCH OF FIELD EQUIPMENT SUPPLIED BY IAEA (Received July 2013)

- ▶ i. Product Code: EN-15-600: 1 No. Trace₂0 Metalyser Portable HM 1000. Packed in BOX 1 (24021-01).
- ▶ ii. Product Code: S952-148: Syringe, Plastpak, Disposal Luerlock 50 ml, pack of 60. Packed in BOX 2 (24021-02). (NB: Not Delivered!)
- ▶ iii. Product Code: 2063700; 2 Nos. Germin GPS MAP 62st; 1920.57.00; 176-0045 and Wplenvcat: 1 No. Alkalinity test kits (Model AL-DT); 2 Nos. Conet Combi 24-4T System complete with 40m cable and hose, pump diameter 44 dia; 2 Nos. pack of Syringe Filter, NELGENE 4mm and an Environmental Catalogue of Wagtech Project Limited. All were Packed in BOX 3 (24021-03).

1. FIRST BATCH OF FIELD EQUIPMENT SUPPLIED BY IAEA (CONTD)

▶ NB:

- ▶ 2 Nos. of Box 3 (24021-03) were delivered to Nigeria (one belonging to NIHSA while the other for Mali). All effort to reach the contact person in Mali to inform them of their Box 3 in our possession and to confirm if they have our box 2 was to no avail.
- ▶ It is also pertinent to note that 500 Nos. Sampling Bottles (250Nos. of 500ml capacity in two cartons & 250Nos. of 50ml capacity in the third carton) were initially supplied by IAEA and had been utilized in the sampling campaigns.

SECOND BATCH OF FIELD EQUIPMENT SUPPLIED BY IAEA (Contd)

- ▶ **RECEIVED 24 APRIL, 2014**
- ▶ List of Measuring instruments and equipment:-
 - ▶ i) 1 No. each of pH & EC meters
 - ▶ ii) 2 Nos. water level measuring meters in each box each 200m
 - ▶ iii) 9 dozen each of 60ml and 500ml capacity plastic bottles (108 Nos. of each capacity).
- ▶ **RECEIVED APRIL, 2014**
- ▶ i) 8 Nos. medium sized boxes of 500ml capacity plastic bottles with 48 pieces each
- ▶ ii) 8 Nos. small boxes of 30ml capacity plastic bottles with 72 pieces each
- ▶ iii) 4 Nos. medium sized boxes of 1000ml capacity plastic bottles with 24 pieces each
- ▶ iv) 1 No. box of 150ml Rapid flow filter unit of 12 pieces.

SECOND BATCH OF FIELD EQUIPMENT SUPPLIED BY IAEA (Contd)

- ▶ RECEIVED 24 APRIL, 2014
- ▶ i) 1 No. Potable Turbid meter in box 1
- ▶ ii) 1 No. Electric contact dip meters for measurement of water level of groundwater and borehole depth in box 2
- ▶ iii) 1 No. Multi-Parameter measuring kit: Multi 350i/SET (DO; EC; pH Ise, T) in box 3
- ▶ iv) 2 Nos. Rain Collector each fitted with 3 litre plastic bottles & funnel with additional 2 Nos. 3 litre bottles in box 4

3. LASER SPECTROSCOPIC LIQUID WATER ISOTOPE ANALYZER.

- ▶ The equipment has been received and arrangement is underway for its installation in the Laboratory of the National Water Resources Institute (NWRI) in Kaduna. Note that a Memorandum of Understanding (MoU) between NIHSA and NWRI was signed in December 2013 for mutual utilization of the equipment.
- ▶ However, installation of the equipment would commence as soon as necessary standard solutions and ancillary items are procured.

3. LASER SPECTROSCOPIC LIQUID WATER ISOTOPE ANALYZER (CONTD)

A full report on the Laser equipment is presented below:

- ▶ The two officers who were trained on the installation and operation of the equipment, (Messrs Ahmed Hassan and Musa Cletus) have confirmed that the contents of the seven (7) packages containing the equipment were in line with the requirements for installation of the instrument.

3. LASER SPECTROSCOPIC LIQUID WATER ISOTOPE ANALYZER.

- ▶ However, there are some necessary requirements to be provided for the installation and operation of the equipment; eg. steady electric power supply and procurement of requisite consumables as itemized below.:–
 - ▶ 1. Solar Powered Inverter
 - ▶ 2. Primary Reference Standard Materials:
 - ▶ a. VSMOW (Vienna Standard Mean Ocean Water)
 - ▶ b. SLAP (Standard Light Antarctic Precipitation)
 - ▶ c. ILS (Internal Lab Standard).

3. LASER SPECTROSCOPIC LIQUID WATER ISOTOPE ANALYZER (CONTD).

▶ List of Required Consumables (Contd)

- ▶ 3. Drierite
- ▶ 4. Drierite Drying Coloum
- ▶ 5. System Syringe: (i) 5 μ L; (ii) 10 μ L
- ▶ 6. Vials trays
- ▶ 7. Teflon Coated Septum
- ▶ 8. Compressor for compressed Air
- 9. Watmann Filter:(i) 0.45 μ ; (ii) 1.0 μ ; (iii) 1.2 μ
- ▶ 10. Complete de-ionised water (preferably get deionizer)

3. LASER SPECTROSCOPIC LIQUID WATER ISOTOPE ANALYZER (CONTD)

List of Required Consumables (Contd)

11. N-Methyl-Pyrrolidone (NMP tech grade) for syringe cleansing
 12. Stainless Steel Barrels with pressure guage
 13. Stabilizer 5000VA or UPS.
- ▶ While arrangement for procurement of solar powered inverter for steady power supply to the laboratory is being made by **NIHSA**, the current prices of the stated consumables have been obtained from the supplier of the equipment but the cost of air freight is still being awaited.

4. TRAINING

- ▶ i. Two (2) project staff were trained in Vienna, Austria on Installation, Operation and Maintenance of the Laser Spectroscopic Water Isotope Analyzer from 22 – 26 April 2013.
- ▶ ii. Seven (7) senior staff of **NIHSA** benefitted from **IAEA**–organized Regional Training Course on “Isotope Hydrology Methods in Water Resources Assessment and Management” held in Accra, Ghana from 25th November 2013 to 6th December 2013.
- ▶ iii. Two counterpart staff from **NIHSA** – Director (Hydrogeophysics) & Water Expert of Nigeria for the project had been nominated to attend the Regional Training Course on Hydrochemistry and Groundwater Dating in Douala, Cameroon from 16 – 27 June 2014.

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▶ Thank You for Your Attention.