Assignment
Report

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WHO LABORATORY TRAINING IN WATER AND WASTEWATER MONITORING

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1. INTRODUCTION

A period from the 8th October to the 21st October 1985 was spent in Amman commissioning total organic carbon (TOC) analysing equipment, training staff in its use and generally assessing the suitability of the laboratory and equipment for routine water analysis.

The terms of reference for the assignment were:

- To assist and train personnel in laboratory analysis and water monitoring techniques
- To install and operate laboratory equipment
- To assist and advise officials in other related duties as requested.

A list of officials met and organizations visited is given in the Annex to this report.

2. OVERVIEW

On arrival in Amman the author met the Director of Primary Health Care and was introduced to the Head of the Sanitary Engineering Department. He was asked to commission the Dorhmann TOC analyser that had been in the possession of the laboratory for a year and train the staff in its operation and use. He was also asked to assess the available laboratory facilities with regard to routine water and wastewater analyses. Most of this work is at present carried out by the Central Laboratory of the Ministry of Health.

3. FINDINGS

3.1 The TOC analyser is in good order and works well. An intermittent fault was noted in the operation of the attached printer. This works correctly when first switched on, i.e. when cold, but fails after approximately one hour's running. This does not prevent the use of the instrument as the result is also displayed as a digital read-out.

3.2 More training is required for the staff to run the TOC instrument on a day-to-day basis.

3.3 Skilled maintenance for the TOC equipment will be required to keep it operating over an extended period.

3.4 The laboratory has the space and the equipment required for routine water analysis and the staff appear quite able to cope with this type of work. More bench space and cupboards would be required.

4. CONCLUSIONS

4.1 For the TOC apparatus to be used on a regular basis to deal with a variety of water and wastewater samples will require:

4.1.1 Further training for at least two members of the laboratory staff

4.1.2 Skilled preventive and curative maintenance of the instrument by a trained service technician.

4.2. For the laboratory to operate effectively for routine water analysis more bench space and cupboards will be required.

4.3 In the interests of safety and efficiency the laboratory should be re-wired with a modern ring-main system and an adequate number of properly grounded three-pin outlets installed.

5. RECOMMENDATIONS

5.1 Staff training

For the TOC instrument to be operated successfully it is essential that the operators have further training in its use. An overseas training visit would be preferable, but for the staff in question, two young ladies one at least with family commitments, the author feels this might be difficult. An alternative would be a one-month training visit by a WHO-sponsored analyst experienced in the use of this equipment.

5.2 Provision of skilled maintenance

This is a problem found in many countries in the Eastern Mediterranean Region. Every laboratory visited by the author had expensive equipment lying idle through lack of maintenance.

5.2.1 To overcome the above problem a national service centre is required staffed by technicians trained by the instrument manufacturers. It would be difficult to cover every contingency, but a survey of the instruments in use throughout the country would reveal major needs and future buying policies might be tailored accordingly. A central store attached to the service centre would provide a rapid replacement service for expendable items and also contain a range of selected spares that could be installed by the service technician.

5.3 Laboratory furniture:

This should be made by local craftsmen.

5.4 Laboratory rewiring:

This should be carried out by local electrical contractors

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The writer is grateful to the Government of Jordan and the agencies and officials who assisted him in this assignment.

ANNEX

OFFICIALS MET

Dr Suleiman Qubain	Ministry of Health Director of Primary Health Care
Mr Mohammed Dajani	Ministry of Health Head of Sanitary Engineering Department
Mr Mazen Khalil	Ministry of Health , Pharmacist
Mr Khalil Dabbas	Ministry of Health Engineer