

FUNCTIONS AND SALIENT FEATURES

The environmental laboratory plays a very important role in assessing the status of environment, comprising both abiotic (soil, water and air) and biotic (flora, fauna and human being) components. An environmental laboratory is a laboratory processing samples, taken from the environmental media (air, water, soil & biota) both from the ambient as well as from sources disposing into the environment.

The laboratories are the essential corner stones of any effective pollution control programme. The analytical laboratories provide qualitative as well as quantitative information of environmental components for making good policy decisions.

CPCB has established its Central Laboratory at its main building at Parivesh Bhawan, East Arjun Nagar, Shahdara, Delhi and the Instrumentation Laboratory is an integral part of it. The main functions of the Instrumentation Laboratory are as follows:

FUNCTIONS OF INSTRUMENTATION LABORATORY

- **Analysis of Environmental samples:** The main function of Instrumentation laboratory is to provide technical services to other divisions and laboratories of CPCB, SPCBs and Regional Directorates & Institutions with respect to the Elemental analysis, Trace metals, Total Organic Carbon and Adsorbable organic halides etc.
- **R&D Projects:** Laboratory also carries out various projects and in-house studies to assess the environmental quality of air and water in terms of analytical observations of various elements, trace metals, Total Organic Carbon and organic halides by using advanced instrumentation like EDXRF, ICP-MS, ICP-AES, Mercury Analyser, TOC Analyser and AOX Analyser and issue the reports on the basis of inferences drawn during the study.
- **Sample Receipt, Registration and Distribution:** The samples collected by various sections of Head Office, Regional Directorates, SPCBs and other organizations which are to be analysed in Laboratories of Central Boards, are received by the Central Sample Receiving Section of the Instrumentation Laboratory as per the defined protocol. The samples are registered and distributed to various laboratories of CPCB.
- **NABL Accreditation:** The Central Laboratory of CPCB, Delhi has been accredited by National Accreditation Board for Testing and Calibration of Laboratories as per the IS: 17025 and for successful compliance of NABL, various quality control assurance programmes are being observed throughout the year. The effectiveness of these programmes are assessed by the periodical internal and external audits

- Implementation of Occupational Health and Safety Management System: To ensure the safety of its Laboratory personnel and building assets, CPCB has implemented the OH&SMS programme and secured the certification from BIS as per IS 18001:2007. To follow the standard, regular safety measures are being taken up and monitored periodically.
- One of the major functions of instrumentation laboratory is to formulate technical specifications of the advanced instruments for analysing trace metals, elements, Mercury, Total Organic Carbon, Adsorbable Organic halides and the processing equipment required for these instruments for CPCB-Head Office, Regional Directorates, SPCBs and other institutions. Laboratory is also involved in the technical evaluations of the bids invited from various companies to procure these instruments.
- The Laboratory is also actively associated with Recognition of Environmental Laboratories under E(P)A-1986. Following activities are being taken up for the Recognition of Laboratories:
 - Scrutinization & Technical evaluation of proposals of environmental laboratories
 - Communicating/ forwarding of comments/observations of environment laboratories to MoEF&CC/Labs.
 - Coordination/ participation for joint inspection of laboratories
 - To assist organizing the monthly Expert Committee meeting at Parivesh Bhawan
 - To prepare the Agenda for Expert Committee meetings.
 - To put the agenda of eligible case for Board meetings
 - To put up the eligible cases for Gazette Notification
 - To update list of recognized laboratories for its placing on CPCB Website

SALIENT FEATURES

- The wet pre treatment area of laboratory and analysis area are well separated. Each instrument has been allocated to a separate room to provide appropriate environment condition required for particular instrument
- Sufficient power backup facilities provided to each instrument through Uninterrupted Power Supply devices.
- Various Facilities for digestion of samples like open digestion system through Hot plate, Close digestion system through Microwave Digester and Water bath.
- Robust evacuation system for acid fumes like Fume hoods with efficient blowers and powerful exhaust fans at digestion area
- Separate analytical chamber for operating Mercury Analyser.

- Robust sample processing facilities for soil/ sediment/ sludge and industrial wastes using Ball Mill Grinder.
- Occupational safety measures have been adopted by using PPEs, cylinders are tied with chain, regular monitoring of X-Ray radiation.