

Standard Operating Procedure for Central Instrumentation Facility of ICAR IISS Bhopal

The Central Instrumentation Facility (CIF) is established to provide access to sophisticated analytical instruments for research, teaching, and extension activities. The facility ensures efficient utilization, proper maintenance, and transparent operation of all equipment through standardized procedures.

1. Booking Procedure

Users submit a requisition/indent form specifying the instrument, purpose of analysis, sample details, and preferred date.

Bookings are entered in the Booking Register (physical/digital) on a first-come, first-served basis, with priority accorded to time-bound institutional research and emergency requirements.

External users submit a formal request along with institutional approval and agree to the prescribed user charges.

2. Sample Submission and Indent Form

Samples are submitted with a duly completed Indent Form containing:

Name and designation of user

Department/Institute

Instrument required

Sample description and number of samples

Parameters to be analyzed

Expected date of analysis

Signature of the user and approval of the Head of Division/Competent Authority

Samples are verified by the technical staff before acceptance.

3. Logbooks and Instrument Operation

Each instrument is provided with a dedicated Logbook maintained by the technical personnel.

The logbook records:

Date and time of operation

User details

Sample identification

Instrument operating conditions

Calibration records

Preventive maintenance

Observations and remarks

Only trained and authorized personnel are permitted to operate the instruments.

4. Technical Personnel

Each instrument is assigned to a designated Technical Officer/Technical Assistant/Scientist responsible for:

Sample receipt and scheduling

Instrument operation

Calibration and quality assurance

Routine maintenance

Maintaining records and logbooks

Coordinating Annual Maintenance Contract (AMC)/service engineers

5. Breakdown Register and Maintenance

A separate Breakdown Register is maintained for each instrument documenting:

Date of malfunction

Nature of fault
Downtime
Service request details
Corrective action taken
Date of restoration and certification of satisfactory functioning
Preventive maintenance schedules are followed as per manufacturer recommendations.

6. Result Submission Register

After completion of analysis, results are reviewed by the concerned scientist/technical officer.

Results are entered in the Result Submission Register indicating:

User name
Sample number
Date of analysis
Date of report submission
Mode of submission (hard copy/e-mail)
User acknowledgement

7. Procedure for External Users

External users submit a formal request through their institution.

Samples are accepted subject to instrument availability.

User charges are collected as per approved institutional rates.

Results are issued after completion of analysis and payment formalities.

Confidentiality of analytical data is maintained.

8. Record Keeping and Safety

All booking registers, indent forms, logbooks, maintenance records, and result registers are preserved for audit and quality assurance.

Standard laboratory safety protocols, instrument-specific SOPs, calibration schedules, and waste disposal guidelines are strictly followed to ensure safe and reliable operation.

Documents/Maintained Registers in the CIF

Booking Register
User Indent Form
Sample Receipt Register
Instrument Logbook
Calibration & Maintenance Log
Breakdown Register
Result Submission Register
External User Register
AMC/Service Record File
Consumables Inventory Register

The lab is NABL accredited since 13 Dec 2025 for 21 soil testing parameters.

I/c PME Cell
ICAR-IISS Bhopal



National Accreditation Board for
Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

ICAR-INDIAN INSTITUTE OF SOIL SCIENCE

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

**"General Requirements for the Competence of Testing &
Calibration Laboratories"**

for its facilities at

ICAR-IISS, BERASIA ROAD, NABIBAGH, BHOPAL, MADHYA PRADESH, INDIA

in the field of

TESTING

Certificate Number: TC-17269

Issue Date: 13/12/2025

Valid Until: 12/12/2029

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Entity: INDIAN COUNCIL OF AGRICULTURAL RESEARCH, MINISTRY OF
AGRICULTURE AND FARMERS WELFARE, GOVERNMENT OF INDIA

Signed for and on behalf of NABL



Anita Rani
Director

Chakravarthy T. Kannan
Chief Executive Officer



National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name :

ICAR-INDIAN INSTITUTE OF SOIL SCIENCE, ICAR-IISS, BERASIA ROAD, NABIBAGH, BHOPAL, MADHYA PRADESH, INDIA

Accreditation Standard

ISO/IEC 17025:2017

Certificate Number

TC-17269

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Validity

13/12/2025 to 12/12/2029

Last Amended on

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S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Testing				
1	CHEMICAL- SOIL AND ROCK	Agriculture Soil	Available Boron	IISS/Method/AB01 (Issue No.: 01, Issue Date: 01/01/2024)
2	CHEMICAL- SOIL AND ROCK	Agriculture Soil	Available Nitrogen	IISS/Method/AN01 (Issue No.: 01, Issue Date: 01/01/2024)
3	CHEMICAL- SOIL AND ROCK	Agriculture Soil	Available Phosphorus	IISS/Method/AP01 (Issue No.: 01, Issue Date: 01/01/2024)
4	CHEMICAL- SOIL AND ROCK	Agriculture Soil	Available Phosphorus	IISS/Method/AP02 (Issue No.: 01, Issue Date: 01/01/2024)
5	CHEMICAL- SOIL AND ROCK	Agriculture Soil	Available Potassium	IISS/Method/AK01 (Issue No.: 01, Issue Date: 01/01/2024)
6	CHEMICAL- SOIL AND ROCK	Agriculture Soil	Available Sulphur	IISS/Method/AS01 (Issue No.: 01, Issue Date: 01/01/2024)
7	CHEMICAL- SOIL AND ROCK	Agriculture Soil	DTPA Extractable Cu	IISS/Method/DTPA Cu 01 (Issue No.: 01, Issue Date: 01/01/2024)
8	CHEMICAL- SOIL AND ROCK	Agriculture Soil	DTPA Extractable Fe	IISS/Method/DTPA Fe 01 (Issue No.: 01, Issue Date: 01/01/2024)
9	CHEMICAL- SOIL AND ROCK	Agriculture Soil	DTPA Extractable Mn	IISS/Method/DTPA Mn 01 (Issue No.: 01, Issue Date: 01/01/2024)
10	CHEMICAL- SOIL AND ROCK	Agriculture Soil	DTPA Extractable Zn	IISS/Method/DTPA Zn 01 (Issue No.: 01, Issue Date: 01/01/2024)
11	CHEMICAL- SOIL AND ROCK	Agriculture Soil	Electrical Conductivity	IISS/Method/EC01 (Issue No.: 01, Issue Date: 01/01/2024)

This is annexure to 'Certificate of Accreditation' and does not require any signature.



National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name : ICAR-INDIAN INSTITUTE OF SOIL SCIENCE, ICAR-IISS, BERASIA ROAD, NABIBAGH, BHOPAL, MADHYA PRADESH, INDIA
Accreditation Standard ISO/IEC 17025:2017
Certificate Number TC-17269
Validity 13/12/2025 to 12/12/2029
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Last Amended on -

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
12	CHEMICAL- SOIL AND ROCK	Agriculture Soil	pH	IISS/Method/pH01 (Issue No.: 01, Issue Date: 01/01/2024)
13	CHEMICAL- SOIL AND ROCK	Agriculture Soil	Texture (Sand Silt Clay)	IISS/Method/T01 (Issue No.: 01, Issue Date: 01/01/2024)
14	CHEMICAL- SOIL AND ROCK	Agriculture Soil	Total Cadmium	USEPA 3052 & USEPA 6010D
15	CHEMICAL- SOIL AND ROCK	Agriculture Soil	Total Carbon	IISS/Method/TC01 (Issue No.: 01, Issue Date: 01/01/2024)
16	CHEMICAL- SOIL AND ROCK	Agriculture Soil	Total Chromium	USEPA 3052 & USEPA 6010D
17	CHEMICAL- SOIL AND ROCK	Agriculture Soil	Total Cobalt	USEPA 3052 & USEPA 6010D
18	CHEMICAL- SOIL AND ROCK	Agriculture Soil	Total Lead	USEPA 3052 & USEPA 6010D
19	CHEMICAL- SOIL AND ROCK	Agriculture Soil	Total Nickel	USEPA 3052 & USEPA 6010D
20	CHEMICAL- SOIL AND ROCK	Agriculture Soil	Total Nitrogen	IISS/Method/TNC01 (Issue No.: 01, Issue Date: 01/01/2024)
21	CHEMICAL- SOIL AND ROCK	Agriculture Soil	Walkley and Black Carbon	IISS/Method/WBC01 (Issue No.: 01, Issue Date: 01/01/2024)

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Quality Manager
ICAR-IISS Bhopal



भा.कृ.अनु.प.-भारतीय मृदा विज्ञान संस्थान

नबीबाग, बैरसिया रोड, भोपाल - 462038

ICAR-Indian Institute of Soil Science

Nabibagh, Berasia Road, Bhopal - 462 038 (M.P.)

Tel. No.(0755)2730970/2734221 (Ext. No. 233 & 256) Fax. No. (0755) 2733310



F.No. 12-308/2025-Estt.

Date: 27.02.2025

OFFICE ORDER

The Director, IISS, Bhopal is pleased to fix the rates for "Analysis of Soil, Water, Plant and Manures samples at ICAR-IISS, Bhopal:-

(RATES FOR SOIL, WATER, MANURE & PLANT SAMPLE UNDER REVOLVING FUND SCHEME (Code 19-08)

(A) SOIL*

S. No.	Parameter	Rate (Rs.) per sample			Remark
		A	B	C	
1	pH & Electrical Conductivity (EC)	125	150	600	
2	Organic carbon	250	300		
3	Available P	375	450		
4	Available K	250	300		
5	Available N	375	450		
6	Available S	375	450		
7	Available Zn, Cu, Mn, Fe and metal on flame AAS (per element)	300	350	1200 (along with pH, EC, OC, Available, P & K)	Plus Rs. 300/- as extraction charges (DTPA extraction)
8	Available B	1250	1500		
9	Available Ca (AAS)	300	350		Plus Rs. 300/- as extraction charges (Ammonium acetate)
10	Available Mg (AAS)	300	350		
11	Available Na	250	300		
12	ESP	1500	1800		
13	CEC	1250	1500		
14	Total N	375	450		
15	Total S	375	450		
16	Total B	400	500		
17	Lime/ Gypsum requirement	300	350		
18	Total P	375	450		Plus Rs. 800/- as sample processing and digestion charges
19	Total K	250	300		
20	Total Ca	300	350		
21	Total Mg	300	350		

22	Total micronutrient (i.e. Zn, Fe, Mn, Cu) and metal content on flame AAS (per element)	300	350		
23	Total micronutrient (i.e., Zn, Fe, Mn, Cu) and metal content on graphite AAS (per element)	500	600		
24	Calcium carbonate	250	300		
25	Ammonium-N	750	900		
26	Nitrate-N	750	1000		

(B) IRRIGATION WATER*

1	pH & Electrical Conductivity	125	150	500	
2	Carbonate + bicarbonate	300	350		
3	Calcium + magnesium (Versenate)	300	350		
4	Chloride	300	350		
5	Sulphate	375	450		
6	Nitrate	750	1000		
7	Phosphate	625	750		
8	Calcium (AAS)	300	350		
9	Magnesium (AAS)	300	350		
10	Sodium	250	300		
11	Potassium	250	300		
12	Boron	1000	1200		

(C) TOTAL ANYLYSIS OF PLANT / MANURE *

1	Total N	1000	1200	Plus Rs. 400/- as sample processing and digestion charges
2	Total P	375	450	
3	Total K	250	300	
4	Total Ca (AAS)	300	350	
5	Total Mg (AAS)	300	350	
6	Total S	375	450	
7	Moisture content	125	150	
8	Total B micronutrient (i.e., Zn, Fe, Mn, Cu, Ni, Cd, Pb) and heavy metal	1000	1200	
9	Total Micronutrient (i.e., Zn, Fe, Mn, Cu) and metal contents on flame of AAS (per element)	300	350	

10	Total Micronutrient (i.e., Zn, Fe, Mn, Cu) and metal contents on graphite AAS (per element)	625	750	
11	Total Micronutrient (i.e., Zn, Fe, Mn, Cu) and metal contents on ICP-OES (per element)			

(D) ANALYSIS ON ICP-OES

S.No.	Parameter	A	B
1	Sample processing & digestion on microwave digestion system	625	1250
2	Determination charges per element	625	1250

(E) ANALYSIS ON CHNS ANALYZER *:

S.No.	Parameter	A	B
1	CHNS estimation (C, N& S)	2500	4000
2	CHNS estimation (Individual element)	1500	2000
3	TOC Analyzer (Only C)	1500	2000

(F) SOIL MICROBIAL COUNT *

S.No.	Parameters	A	B	C
1	Heterotrophs	200	300	
2	N fixers	200	300	
3	P solubilizers	200	300	
4	Methanotrophs	200	300	
5	Fungi	200	300	
6	Actinomycetes	200	300	

(G) SOIL ENZYMATIC ANALYSIS*

1	FDA	600	800	
2	DHA	600	800	
3	Nitrogenase (ARA)	1000	1200	

(H) SOIL GHF ANALYSIS *

1	CH ₄	500	600	
2	CO ₂	500	600	
3	N ₂ O	500	600	

(I) SOIL PHYSICAL PROPERTIES ANALYSIS *

S.No.	Properties	A	B	C
1	Soil texture	400	600	
2	Bulk density (by clod method)	350	550	
3	Moisture/ Water content/ WHC	600	800	
4	Soil aggregate analysis (macro-micro-and water stable aggregates (WSA), mean weight diameter, (MWD)	550	750	
5	Plasticity index	600	800	

A. ICAR/SAU/Govt. Institutes or Organizations.

B. Private Institution/Organization/NGOs/Company/Individual (non-farming).

C. Farmers Packages Only.

Note:

1. For all other parameters, where farmer's package is not given, the farmer's rate will be equal to category 'A'.

2. Service tax has to be paid extra on all above rates including Govt./Private/Industry/Farmers.

Ganesh Meena
27/02/2025
(Ganesh Kumar Meena)
Administrative Officer

Distribution: -

1. All Head of the Divisions/I/c PCs/ICAR-IISS, Bhopal.
2. DDO, ICAR-IISS, Bhopal.
3. SF&AO, ICAR-IISS, Bhopal.
4. I/c PME, ICAR-IISS, Bhopal.
5. I/c AKMU, ICAR-IISS, Bhopal.
6. I/c Central Store, ICAR-IISS, Bhopal
7. PS to Director, ICAR-IISS, Bhopal.