

**BEFORE THE NATIONAL GREEN TRIBUNAL  
PRINCIPAL BENCH, NEW DELHI  
ORIGINAL APPLICATION NO. 693 OF 2023**

**IN THE MATTER OF:**

**IN RE : NEWS ITEM APPEARING IN DECCAN HERALD DATED 24.10.2023 TITLED "POLLUTION CONTROL BOARDS ARE THE WEAK LINK"**

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**THROUGH**



**RAGHAV SHARMA  
ADVOCATE**

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DATE: 30.12.2025

PLACE: NEW DELHI

BEFORE THE NATIONAL GREEN TRIBUNAL  
PRINCIPAL BENCH, NEW DELHI  
ORIGINAL APPLICATION NO. 693 OF 2023

**IN THE MATTER OF:**

**IN RE: NEWS ITEM APPEARING IN DECCAN HERALD DATED 24.10.2023  
TITLED “POLLUTION CONTROL BOARDS ARE THE WEAK LINK”**

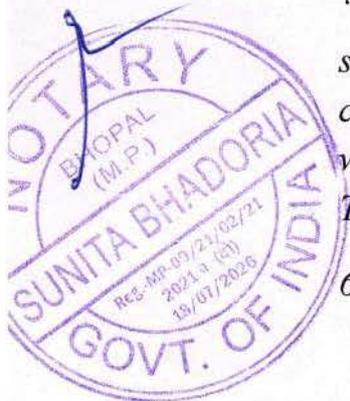
**STATUS REPORT ON BEHALF OF THE RESPONDENT NO. 13,  
PRINCIPAL SECRETARY, DEPARTMENT OF ENVIRONMENT, STATE  
OF MADHYA PRADESH IN COMPLIANCE OF ORDER DATED 14.10.2025**

1. That the instant Original Application being OA No. 693 of 2023 is a *sou moto* cognizance taken by this Hon’ble Tribunal and is titled as *“In Re: News Item appearing in Deccan Herald dated 24.10.2023 titled “Pollution Control Boards Are The Weak Link”*. This Hon’ble Tribunal, vide its last order dated 14.10.2025 directed as under:

*“5. All the PCBs of the States/PCCs of UTs are directed to file the statusreport in terms of the earlier direction and furnish an advance copy thereof to the Counsel for the CPCB, if not already submitted, who will compile the information in the tabulated form and place it before the Tribunal at least one week before the next date of hearing.*

*6. List on 08.01.2026.”*

2. That, the Answering Respondent in compliance of this Hon’ble Tribunal’s Order provided all the relevant information to the Central Pollution Control Board (hereinafter referred to as **“CPCB”**) on the google sheet link as shared by the CPCB. It is submitted that the google sheet link (<https://docs.google.com/spreadsheets/d/1M6VhKy7GjK2TpY-05gX4qbibOk-o6DnST3DbJDBaISo/edit?gid=1216084669#gid=1216084669>) contains the details of the current status of vacancies, regulating and monitoring facilities



&the infrastructure available with the laboratories of Madhya Pradesh Pollution Control Board (hereinafter referred to as “MPPCB”).

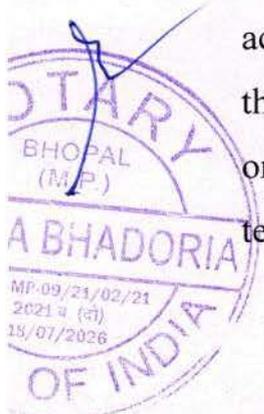
3. That, the updated information related to Sanction strength and Working strength of staff in MPPCB in terms of administrative, engineering and scientific staff is tabulated as follows:

**VACANCY STATUS FOR MADHYA PRADESH POLLUTION CONTROL BOARD AS ON 30.11.2025**

Category of Post	Sanctioned	Filled as on 30.11.2025	Vacancy	Details of Vacancy of number as on 30.11.2025
Scientific	435	149	286	Direct: 178
				Promotion: 108
				Deputation: 0
Engineering	146	34	112	Direct: 55
				Promotion: 57
				Deputation: 0
Administrative	639	223	416	Direct: 268
				Promotion: 148
				Deputation: 0
<b>Total :</b>	<b>1220</b>	<b>406</b>	<b>814</b>	

The Copy of the chart highlighting current status of vacancies in MPPCB is marked and annexed herewith as **ANNEXURE R-13/1**.

4. That, the MP PCB has submitted requisition for 18 posts of Scientist was forwarded to the Staff Selection Board, pursuant to which an advertisement was issued on 25.02.2025 and the recruitment process is underway. Similarly the Staff Selection Board has issued an advertisement dated 28.10.2025 for Twenty posts of Chemist and Eleven posts of Laboratory Assistant, and the further selection process in respect thereof is presently pending at the Board level. Copy of the advertisement dated 28.10.2025 is marked and annexed herewith as **ANNEXURE R-13/2**.
5. That a major challenge with regards to the recruitment in Madhya Pradesh Pollution Control Board was that the Board was not having the power to fill up the vacant posts independently. The Board had to completely rely upon the other recruitment agencies/department of the state government i.e. Madhya Pradesh Public Service Commission, M. P. State Employee Selection Board, etc for filling up the vacant post which created certain administrative difficulties and delays. In order to overcome the same the Board had submitted a proposal for amendment in rules in a manner that would enable the Board to conduct recruitment exercise for Class-III and Class-IV employees and fill up these vacancies on its own. In this regard the relevant proposal is pending before Govt. of Madhya Pradesh, Environment Department for approval and issuance of Madhya Pradesh Pollution Control Board Class III and IV Recruitment and Conditions of Service Regulations, 2025. It is necessary to mention that Madhya Pradesh Pollution Control Board Class I and II Recruitment and Conditions of Service Regulations, 1996 as amended 2025 has already been notified on 17.04.2025.
6. That, with regards to the information related to the laboratories regarding accreditation/recognitions, MPPCB in its reply dated 16.01.2024 had submitted that the MPPCB is having 10 Regional laboratories located across the state and one Central laboratory located at H.Q. in Bhopal. It was stated that out of these ten laboratories eight are Regional laboratories presently accredited as per ISO

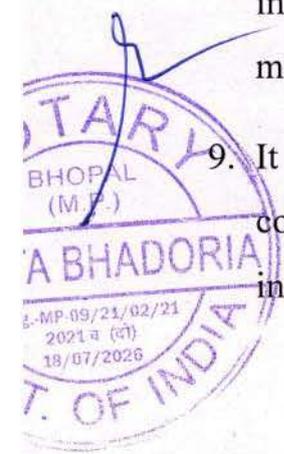


17025 and 01 Central laboratory Recognized under EPA, 1986. Also, it was stated that a Letter No. 303 dated 18.12.2023 had already been issued to all regional laboratories to take initiatives to get their labs accredited and recognised under various ISO standards [ISO-17025 & 45001] and recognition under EPA[1986] recognitions.

7. That, in compliance of Order dated 23.11.2023 a detailed report was submitted by MPPCB with the CPCB with regard to upgradation of laboratory infrastructure, however, this Hon'ble Tribunal *vide* Order dated 28.01.2025 directed the CPCB to re-examine the disclosures made by all the PCBs and PCCs in their reports about the laboratory infrastructure and ascertain the gaps/deficiencies/lack of facility including recognition of laboratories as NABL, environment protection laboratories and disclose the said information in its next report. This Hon'ble Tribunal also directed the PCBs and PCCs which had not filed their reports w.r.t the same to do so within 4 weeks.
8. That, in order to highlight the individual capabilities and capacities of all the laboratories operating under MPPCB, board has prepared a separate list for all the 11 laboratories [i.e. 1 Central & 10 regional situated at Mandideep, Gwalior, Jabalpur, Indore, Ujjain, Sagar, Satna, Rewa, Shahdol&Singrauli respectively] pointing out the facilities available for monitoring of environmental parameters and details of infrastructure (instruments and equipment) available at their respective sites.

True Copy of separate charts highlighting facilities available for monitoring of environmental parameters & chart highlighting details of laboratory infrastructure (instruments and equipment) with each laboratory individually is marked and annexed herewith as **ANNEXURE R-13/3**.

9. It is stated that the Answering Respondent (i.e. MPPCB) has always been compliant with all the Order(s) passed by this Hon'ble Tribunal and that the instant Reply is being filed by MPPCB in addition to its reply dated 16.01.2024



and 17.04.2025 highlighting the current status of issues which are being being dealt by this Hon'ble Tribunal in this instant case.

10. That, the Answering Respondent further craves leave of this Hon'ble Tribunal to file a detailed reply and/or affidavit as and when the Hon'ble Tribunal directs or when the same is necessitated in the interest of justice. An affidavit in the support of the reply is annexed.



**THROUGH**

**RAGHAV SHARMA**  
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B-5/202, SAFDARJUNG ENCLAVE,

NEW DELHI - 110029

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DATE: 30.12.2025

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BEFORE THE NATIONAL GREEN TRIBUNAL

PRINCIPAL BENCH, NEW DELHI

ORIGINAL APPLICATION NO. 693 OF 2023

IN THE MATTER OF:

IN RE : NEWS ITEM APPEARING IN DECCAN HERALD DATED 24.10.2023 TITLED "POLLUTION CONTROL BOARDS ARE THE WEAK LINK"

AFFIDAVIT

I, Kalpana Pazare W/o Shri Ramesh Pazare, Occupation: Superintendent Administration, M.P. Pollution Control Board, Bhopal aged 61 years, having office at E-5, Arera Colony, Bhopal, 462016 do hereby take oath and state as under: -

1. That I am the officer in charge on behalf of the respondent no. 13 State of Madhya Pradesh in the present case and therefore I am well conversant with the facts of the case.
2. That the present status report on behalf of respondent no. 13 in the instant case has been drafted and filed in accordance with my instructions. I have read and understood the contents thereof. I state that the contents of para 1 to end of the return along with documents are true to the information as gathered from the records of the case and also on my information and are believed to be true. Submissions based on law are true to the information and advice given to me by the counsel engaged by the Board.
3. I swear that this my declaration is true, that it conceals nothing, and that no part of it is false. So help me god.



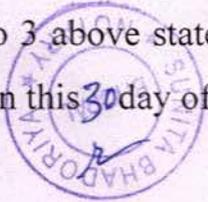
S.No. 956/2025  
Date.. 30/12/2025

*Kalpana Pazare*  
कल्पना पाझारे

DEPONENT

VERIFICATION

I, Kalpana Pazare, deponent above named do hereby verify that the contents of para 1 to 3 above stated are true to my personal knowledge and belief. Verified and signed on this 30 day of December, 2025 at Bhopal, Madhya Pradesh.



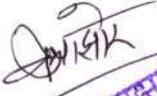
*Kalpana Pazare*  
कल्पना पाडारे  
अधीक्षक  
**DEPONENT**



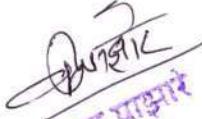
IDENTIFIED BY ME  
*Pranshal Pandey*  
PRANSHAL PANDEY  
ADVOCATE  
BHOPAL

SOLEMNLY AFFIRMED BEFORE  
ME BY THE WITHIN NAME  
*Sunita Bhadoria*  
30/12/2025  
SUNITA BHADORIYA  
NOTARY  
BHOPAL (M.P.) INDIA

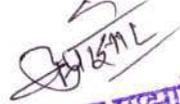
PART A: STATUS OF FILLING OF VACANT POSTS							
Name of the Board / Committee: Madhya Pradesh Pollution Control Board							
Category of Post	Status of Sanctioned posts in Number			Details of current vacancies in number	Action Taken (Approval of the Govt. , Engagement agency, Advertisement, Exam date etc.)	The time line by which the vacancy will be filled (in months)	
	Sanctioned	Filled posts as on 30.11.2025	Current Vacancy as on 30.11.2025				
a) Scientific	435	149	286	a) Direct	178	Requisition for 18 posts of Scientist was forwarded to the Staff Selection Board, pursuant to which an advertisement was issued on 25.02.2025 and the recruitment process is underway. Likewise, the Staff Selection Board has issued an advertisement dated 28.10.2025 for 20 posts of Chemist and 11 posts of Laboratory Assistant, and the further selection process in respect thereof is presently pending at the Board level.	The tentative time frame for completion of the recruitment process is July 2026, subject to the Staff Selection Board, Bhopal, finalising all stages of the process within the prescribed schedule. This timeline is further contingent upon any directions, orders or circulars that may be issued from time to time by the Government of Madhya Pradesh, as well as the outcome of any court proceedings that may be instituted in relation to the said recruitme

  
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 अधीक्षक

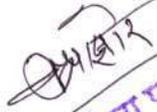
				b)Promotion	108	<p>In view of the judgment of the Hon'ble High Court of Madhya Pradesh in W.P. No. 1942/2011 (R.B. Rai v. State of Madhya Pradesh), whereby promotions on the basis of reservation were stayed vide final order dated 30.04.2016, the process of promotion in the State, including in respect of the Board, remained affected. The said order was challenged before the Hon'ble Supreme Court of India, which, while staying the operation of the High Court's order, directed that the status quo obtaining as on that date be maintained until further orders. Consequently, promotions in the State of Madhya Pradesh, including in the Madhya Pradesh Pollution Control Board, have remained in abeyance till date in compliance with the aforesaid order of the Hon'ble Supreme Court.</p> <p>Notwithstanding the above judicial constraints, the Board is proactively in the process of carrying out necessary amendments to the Madhya Pradesh Pollution Control Board Recruitment and Conditions of Service Regulations, 1996, so as to enable the Board to undertake promotions on the basis of merit and seniority without dependence on the State promotion rules. Upon notification of these amendments, the Board shall be in a position to initiate and complete the promotion process expeditiously</p>	The issue of promotion in public services in respect to state of Madhya Pradesh is pending before the Hon'ble Supreme Court of India in RB Rai v State of MP & Ors.
				c) Deputation	-	Not applicable	

  
 कल्पना पांडुरंग  
 अधीक्षक

PART A: STATUS OF FILLING OF VACANT POSTS							
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Category of Post	Status of Sanctioned posts in Number			Details of current vacancies in number		Action Taken (Approval of the Govt. , Engagement agency, Advertisement, Exam date etc.)	The time line by which the vacancy will be filled (in months)
	Sanctioned	Filled posts as on 30.11.2025	Current Vacancy as on 30.11.2025				
b) Engineeringz	146	34	112	a) Direct	55	Demand letter was sent to the Staff Selection Board for 34 posts of Assistant Engineer (Environment) & Assistant Engineer (Computer)	Probably July 2026, beacuse it depend upon Staff Selection Board, Bhopal
				b)Promotion	57	The Madhya Pradesh High Court in WP 1942/2011 (RB rai v State of Madhya Pradesh) vide final order dated 30.04.2016 stayed promotion in the matter of promotion based on the reservation. The said order was challenged before the Hon'ble Supreme Court of India where in the Supreme Court had stayed the order of the High Court and had ordered that status quo obtaining as on today shall be maintained until further orders. The promotions in state of Madhya Pradesh had been stayed in light of the above of order of the Hon'ble Supreme Court of India in the state of MP till present date. However the Board is in process of implementing necessary amendments to the Madhya	The issue of promotion in public services in respect to state of Madhya Pradesh is pending before the Hon'ble Supreme Court of India in RB Rai v State of MP & Ors.

  
 कल्पना पांडे  
 अधीक्षक

						Pradesh Pollution Control Board Recruitment and Conditions of Service Regulations, 1996 which shall allow the Board to undertake promotion process on merits and seniority without relying upon the state promotion rules. This shall ensure that the process of promotions can be undertaken expeditiously.	
				c) Deputation	-	Not applicable	

  
 कार्याना याङ्गारे  
 अधीक्षक

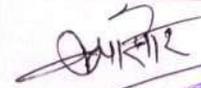
## PART A: STATUS OF FILLING OF VACANT POSTS

Name of the Board / Committee: Madhya Pradesh Pollution Control Board							
Category of Post	Status of Sanctioned posts in Number			Details of current vacancies in number		Action Taken (Approval of the Govt., Engagement agency, Advertisement, Exam date etc.)	The time line by which the vacancy will be filled (in months)
	Sanctioned	Filled posts as on 30.11.2025	Current Vacancy as on 30.11.2025				
G) Administration	639	223	416	a) Direct	268	Requisition has been forwarded to the Staff Selection Board, Bhopal, for filling the following posts: Section Officer – 02 Assistant Law Officer – 02 Legal Assistant – 05 Public Relation Assistant – 02 Pursuant thereto, an advertisement was issued on 25.02.2025, and the examination was tentatively proposed to commence from 15.05.2025. The process for issuance of advertisement in respect of the remaining posts is under active consideration before the Staff Selection Board, Bhopal, and is being pursued for completion at the earliest.	The tentative timeline for completion is July 2026, as the same is contingent upon the Staff Selection Board, Bhopal, completing the recruitment process within its prescribed schedule.

*(Signature)*  
 कार्यालय प्रमुख  
 अधीक्षक

4838

				b) Promotion	148	The issue of promotion in public services in respect to state of Madhya Pradesh is pending before the Hon'ble Supreme Court of India in RB Rai v State of MP & Ors.	
				c) Deputation		Not applicable	

  
जयलता पांडुरंग  
अधीक्षक

**VACANCY STATUS FOR MADHYA PRADESH POLLUTION****CONTROL BOARD AS ON 30.11.2025**

Category of Post	Sanctioned	Filled as on 30.11.2025	Vacancy	Details of Vacancy of number as on 30.11.2025
Scientific	435	149	286	Direct: 178
				Promotion: 108
				Deputation: 0
Engineering	146	34	112	Direct: 55
				Promotion: 57
				Deputation: 0
Administrative	639	223	416	Direct: 268
				Promotion: 148
				Deputation: 0
Total :	1220	406	814	

The Copy of the chart highlighting current status of vacancies in MPPCB is marked and annexed herewith as **ANNEXURE -1**.

*[Signature]*  
 31/11/25  
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 अधीक्षक

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website: [www.esb.mp.gov.in](http://www.esb.mp.gov.in), E-Complain Id : [Complaint.esb@mp.gov.in](mailto:Complaint.esb@mp.gov.in)

## समूह-2 उपसमूह-3 के पदों की भरती हेतु संयुक्त भरती परीक्षा-2025

ऑनलाईन आवेदन-पत्र	
आवेदन पत्र भरने की प्रारम्भ तिथि : 29.10.2025	आवेदन पत्र भरने की अंतिम तिथि : 12.11.2025
आवेदन पत्र में संशोधन करने की प्रारम्भ तिथि : 29.10.2025	आवेदन पत्र में संशोधन करने की अंतिम तिथि : 17.11.2025
परीक्षा दिनांक व दिन	13.12.2025 से प्रारम्भ
परीक्षा शुल्क	
सीधी भर्ती /संविदा पदों हेतु	अनारक्षित अभ्यर्थियों के लिये
	रु. 500/- प्रति प्रश्न पत्र
	अनुसूचित जाति/अनुसूचित जनजाति/अन्य पिछड़ा वर्ग/ ई.डब्लू.एस./ निःशक्तजन अभ्यर्थियों के लिये (केवल म.प्र. के मूल निवासियों के लिये)
	रु. 250/- प्रति प्रश्न पत्र
	सीधी भर्ती - बैकलॉग
	कोई शुल्क नहीं
ऑनलाईन आवेदन - कियोस्क के माध्यम से आनलाईन भरने वाले अभ्यर्थियों हेतु एमपीआनलाईन का पोर्टल शुल्क रुपये 60/- देय होगा । इसके अतिरिक्त रस्टिड सिटीजन यूजर के माध्यम से लागिन कर फार्म भरने पर पोर्टल शुल्क 20/- रु. देय होगा ।	

आनलाईन परीक्षा पद्धति समय सारणी

परीक्षा का नाम	परीक्षा दिनांक एवं दिन	परीक्षा की पाली	अभ्यर्थियों के लिये रिपोर्टिंग समय	महत्वपूर्ण निर्देश पढ़ने का समय	उत्तर अंकित का समय
समूह-2 उप समूह-3	13.12.2025 से	प्रथम	प्रातः 7:00 से 8:00 बजे तक	08:50 से 09:00 बजे तक (10 मिनट)	प्रातः 09:00 से 12:00 बजे तक (3:00 घंटे)
		द्वितीय	दोपहर 01:00 से 02:00 बजे तक	02:50 से 03:00 बजे तक (10 मिनट)	दोपहर 03:00 से 06:00 बजे तक (3:00 घंटे)

टिप्पणी :-

- अभ्यर्थी का आधार पंजीयन अनिवार्य है ।
- बोर्ड द्वारा आयोजित परीक्षाओं में मूल फोटोयुक्त पहचान पत्र लाना अनिवार्य होगा। मूल फोटोयुक्त पहचान पत्र के रूप में अभ्यर्थी मतदाता पहचान पत्र, पेनकार्ड, आधार कार्ड, ड्रायविंग लायसेंस, तथा पासपोर्ट में से कोई एक को चयनित कर सकता है। यु.आई.डी.ए.आई.(UIDAI) के द्वारा सत्यापित(Verify) होने पर ही ई आधार मान्य होगा । मूल फोटोयुक्त पहचान पत्र के अभाव में परीक्षार्थी को परीक्षा में सम्मिलित होने से वंचित किया जाएगा।
- अभ्यर्थी को नियम पुस्तिका में विनिश्चित मूल परिचय पत्र के अतिरिक्त अपना आधार कार्ड / ई-आधार कार्ड / आधार कार्ड की छायाप्रति /आधार नंबर /आधार VID की जानकारी लाना अनिवार्य हैं ।
- परीक्षा में प्रवेश के समय एवं परीक्षा के दौरान आधार बेस्ड बहुस्तरीय बायोमेट्रिक सत्यापन अनिवार्य है ।
- परीक्षार्थियों को परीक्षा में रिपोर्टिंग समय तक परीक्षा केन्द्र में प्रवेश की अनुमति होगी । इसके पश्चात विलम्ब से आने वाले अभ्यर्थियों को प्रवेश की पात्रता नहीं होगी ।
- परीक्षा कक्ष में इलेक्ट्रॉनिक डिवाइस यथा मोबाईल फोन, केलकुलेटर, लॉग टेबल्स, Sun glasses एवं नकल पर्चा आदि का उपयोग पूर्णतः वर्जित है।
- ऑनलाईन आवेदन-पत्र क्रमांक के द्वारा ही ऑनलाईन परीक्षा हेतु अभ्यर्थी अपना प्रवेश-पत्र प्राप्त कर सकते हैं। अतः आवेदन-पत्र क्रमांक आवश्यक रूप से संभाल कर रखें, जिसकी समस्त जिम्मेदारी आवेदक की ही होगी।
- परीक्षा केन्द्र पर आवेदक को बाल प्वाइंट पेन तथा परीक्षा हाल में प्रवेश हेतु मंडल की वेबसाइट से डाउनलोड किये गये प्रवेश-पत्र साथ लाना अनिवार्य है
- किसी भी परीक्षार्थी को परीक्षा प्रारंभ होने के पश्चात परीक्षा समाप्ति तक परीक्षा कक्ष छोड़ने की अनुमति नहीं होगी ।

10. आवेदन-पत्र भरते समय उम्मीदवारों के किसी भी प्रमाण पत्र का परीक्षण ई.एस.बी. द्वारा नहीं किया जाकर नियुक्ति प्रक्रिया के दौरान संबंधित विभाग द्वारा किया जाता है। अतः कम्प्यूटर आधारित online परीक्षा में उम्मीदवारों की पात्रता (Eligibility) (पूर्णतः प्रावधिक (Provisional) होगी।
11. उपरोक्त सभी पदों के लिए अभ्यर्थियों का मध्यप्रदेश राज्य के रोजगार कार्यालय में जीवित पंजीयन होना अनिवार्य होगा।
12. मध्यप्रदेश के विशेष आदिम जनजाति समुदाय जैसे बैगा, सहारिया/सहरिया एवं भारिया अनुसूचित जनजाति के अभ्यर्थियों को अकार्यपालिक पदों के लिये अपने आवेदन पत्र समस्त आवश्यक प्रमाण-पत्र संलग्न करते हुये हार्डकॉपी में निर्धारित (नियम पुस्तिका के प्रारूप-2 में) आवेदन-पत्र भरने की अंतिम तिथि तक मण्डल को न भेजते हुये सीधे संबंधित विभाग को पृथक-पृथक आवेदन प्रेषित करना होगा। मण्डल को प्रेषित आवेदन पत्र अमान्य माना जायेगा।
13. विभाग के पद कार्यपालिक होने की स्थिति में भर्ती हेतु आदिम जनजाति, (बैगा, सहारिया/सहरिया एवं भारिया) के अभ्यर्थियों को परीक्षा से छूट का प्रावधान नहीं होगा वे अभ्यर्थी अनुसूचित जनजाति के अभ्यर्थी के रूप में परीक्षा हेतु आनलाईन आवेदन करें। (ऐसी स्थिति में नियम पुस्तिका की बैगा,सहारिया एवं भारिया से संबंधित सभी कण्डिकायें विलोपित मान्य होगी।)

**समूह-2 उपसमूह-3 पदों की भरती हेतु संयुक्त भरती परीक्षा-2025**  
आयोजन के नियम एवं निर्देश  
विषय-सूची

स.क्रं.	अध्याय	विवरण	पृष्ठ क्र.
1.	1	समूह-2 उपसमूह-3 पदों की भरती हेतु संयुक्त भरती परीक्षा-2025	04-21
2.	2	विभागवार रिक्त पदों का विवरण तथा आरक्षण तालिका	22-89
3.	3	म.प्र. कर्मचारी चयन मण्डल, भोपाल की परीक्षा संचालन संबंधी नियमावली	90-106
4.	4	परीक्षा का पाठ्यक्रम	107-108
5.	प्रारूप-1	यात्रा देयक प्राप्ति के लिये स्वयं के बैंक खाता विवरण पत्रक	109
6.	प्रारूप-2	मध्यप्रदेश के आदिम जनजाति समुदाय जैसे:-बैगा, सहारिया एवं भारिया जनजाति के अभ्यर्थियों हेतु आवेदन पत्र	110

26. मध्यप्रदेश प्रदूषण नियंत्रण बोर्ड, भोपाल (म.प्र.)

मध्यप्रदेश प्रदूषण नियंत्रण बोर्ड, भोपाल (म.प्र.) के पत्र क्रमांक 2650 दिनांक 18.08.2025 के अंतर्गत रिक्त पदों की जानकारी निम्नानुसार है-

## आरक्षण तालिका

पोस्ट कोड-51 - सीधी भर्ती - रसायनज्ञ-कुल 12 पद (अकार्यपालिक)

सक्र.	श्रेणी	निल		भूतपूर्व सैनिक		संविदा कर्मी हेतु		योग	दिव्यांग
		ओपन	महिला	ओपन	महिला	ओपन	महिला		
1.	अनारक्षित (UR)	02	01	--	01	--	--	04	निरंक
2.	ई.डब्ल्यू.एस.	01	--	--	--	--	--	01	
3.	अनुसूचित जाति (SC)	01	01	--	--	--	--	02	
4.	अनुसूचित जनजाति (ST)	02	--	--	--	--	--	02	
5.	अन्य पिछड़ा वर्ग (OBC)	02	01	--	--	--	--	03	
	योग	08	03	--	01	--	--	12	

वेतनमान- 36200-114800 (लेवल-9)

शैक्षणिक योग्यता-

मान्यता प्राप्त संस्थान से जीव विज्ञान/पर्यावरण विज्ञान/वनस्पति शास्त्र/रसायन शास्त्र विषय में स्नातक उपाधि।

अन्य पिछड़ा वर्ग को 14 प्रतिशत आरक्षण के अनुसार 87 प्रतिशत पदों की मुख्य आरक्षण तालिका  
सीधी भर्ती - रसायनज्ञ-कुल 11 (अकार्यपालिक)

सक्र.	श्रेणी	निल		भूतपूर्व सैनिक		संविदा कर्मी हेतु		योग	दिव्यांग
		ओपन	महिला	ओपन	महिला	ओपन	महिला		
1.	अनारक्षित (UR)	02	01	--	01	--	--	04	निरंक
2.	ई.डब्ल्यू.एस.	01	--	--	--	--	--	01	
3.	अनुसूचित जाति (SC)	01	01	--	--	--	--	02	
4.	अनुसूचित जनजाति (ST)	02	--	--	--	--	--	02	
5.	अन्य पिछड़ा वर्ग (OBC)	02	--	--	--	--	--	02	
	योग	08	02	--	01	--	--	11	

शेष 13 प्रतिशत पदों की प्रावधिक/काल्पनिक आरक्षण तालिका  
सीधी भर्ती - रसायनज्ञ-कुल 01 (अकार्यपालिक) (मा. न्यायालय के निर्णयाधीन)

सक्र.	श्रेणी	निल		भूतपूर्व सैनिक		संविदा कर्मी हेतु		योग	दिव्यांग
		ओपन	महिला	ओपन	महिला	ओपन	महिला		
1.	अन्य पिछड़ा वर्ग (OBC) (प्रावधिक)	--	01	--	--	--	--	01	निरंक
2.	अनारक्षित (UR) (काल्पनिक)	--	01	--	--	--	--	01	

## आरक्षण तालिका

पोस्ट कोड-52 - सीधी भर्ती-बैकलॉग - रसायनज्ञ-कुल 08 पद (अकार्यपालिक)

सक्र.	श्रेणी	निल		भूतपूर्व सैनिक		संविदा कर्मी हेतु		योग	दिव्यांग
		ओपन	महिला	ओपन	महिला	ओपन	महिला		
1.	अनारक्षित (UR)	--	--	--	--	--	--	--	निरंक
2.	ई.डब्ल्यू.एस.	01	--	--	--	--	--	01	
3.	अनुसूचित जाति (SC)	01	--	--	--	--	--	01	
4.	अनुसूचित जनजाति (ST)	01	01	--	--	--	--	02	
5.	अन्य पिछड़ा वर्ग (OBC)	03	01	--	--	--	--	04	
	योग	06	02	--	--	--	--	08	

वेतनमान- 36200-114800 (लेवल-9)

शैक्षणिक योग्यता-

मान्यता प्राप्त संस्थान से जीव विज्ञान/पर्यावरण विज्ञान/वनस्पति शास्त्र/रसायन शास्त्र विषय में स्नातक उपाधि।

अन्य पिछड़ा वर्ग को 14 प्रतिशत आरक्षण के अनुसार 87 प्रतिशत पदों की मुख्य आरक्षण तालिका सीधी भर्ती-बैकलॉग - रसायनज्ञ-कुल 06 (अकार्यपालिक)

सक्र.	श्रेणी	निल		भूतपूर्व सैनिक		संविदा कर्मी हेतु		योग	दिव्यांग
		ओपन	महिला	ओपन	महिला	ओपन	महिला		
1.	अनारक्षित (UR)	--	--	--	--	--	--	--	निरंक
2.	ई.डब्ल्यू.एस.	01	--	--	--	--	--	01	
3.	अनुसूचित जाति (SC)	01	--	--	--	--	--	01	
4.	अनुसूचित जनजाति (ST)	01	01	--	--	--	--	02	
5.	अन्य पिछड़ा वर्ग (OBC)	02	--	--	--	--	--	02	
	योग	05	01	--	--	--	--	06	

शेष 13 प्रतिशत पदों की प्रावधिक/काल्पनिक आरक्षण तालिका

सीधी भर्ती-बैकलॉग - रसायनज्ञ-कुल 02 (अकार्यपालिक) (मा. न्यायालय के निर्णयाधीन)

सक्र.	श्रेणी	निल		भूतपूर्व सैनिक		संविदा कर्मी हेतु		योग	दिव्यांग
		ओपन	महिला	ओपन	महिला	ओपन	महिला		
1.	अन्य पिछड़ा वर्ग (OBC) (प्रावधिक)	01	01	--	--	--	--	02	निरंक
2.	अनारक्षित (UR) (काल्पनिक)	01	01	--	--	--	--	02	

आरक्षण तालिका

पोस्ट कोड-53 - सीधी भर्ती - प्रयोगशाला सहायक-कुल 07 पद (अकार्यपालिक)

सक्र.	श्रेणी	निल		भूतपूर्व सैनिक		संविदा कर्मी हेतु		योग	दिव्यांग
		ओपन	महिला	ओपन	महिला	ओपन	महिला		
1.	अनारक्षित (UR)	02	01	01	--	--	--	04	निरंक
2.	ई.डब्ल्यू.एस.	--	--	--	--	--	--	--	
3.	अनुसूचित जाति (SC)	01	--	--	--	--	--	01	
4.	अनुसूचित जनजाति (ST)	01	--	--	--	--	--	01	
5.	अन्य पिछड़ा वर्ग (OBC)	01	--	--	--	--	--	01	
	योग	05	01	01	--	--	--	07	

वेतनमान- 25300-80500 (लेवल-6)

शैक्षणिक योग्यता-

मान्यता प्राप्त विश्वविद्यालय से बी.एस.सी. उपाधि।

आरक्षण तालिका

पोस्ट कोड-54 - सीधी भर्ती-बैकलॉग - प्रयोगशाला सहायक-कुल 04 पद (अकार्यपालिक)

सक्र.	श्रेणी	निल		भूतपूर्व सैनिक		संविदा कर्मी हेतु		योग	दिव्यांग
		ओपन	महिला	ओपन	महिला	ओपन	महिला		
1.	अनारक्षित (UR)	--	--	--	--	--	--	--	निरंक
2.	ई.डब्ल्यू.एस.	--	--	--	--	--	--	--	
3.	अनुसूचित जाति (SC)	01	--	--	--	--	--	01	
4.	अनुसूचित जनजाति (ST)	01	01	--	--	--	--	02	
5.	अन्य पिछड़ा वर्ग (OBC)	01	--	--	--	--	--	01	
	योग	03	01	--	--	--	--	04	

वेतनमान- 25300-80500 (लेवल-6)

शैक्षणिक योग्यता-

मान्यता प्राप्त विश्वविद्यालय से बी.एस.सी. उपाधि।

Note: It is requested to please ensure that each sheet is created separately for each laboratory and rename the sheet accordingly. For e.g. Central Laboratory, Regional Laboratory etc

LABORATORY ANALYTICAL FACILITIES

Name of the Board / Committee: Central Laboratory Madhya Pradesh Pollution Control Board Bhopal M.P. (CL MPPCB)

PART I: Facility available for monitoring of environmental parameters (as on 30/11/2025):

S. No.	Parameters (As per Parameters notified under schedule I of EP Rules)	Facilities Available (Yes / No)	If facility is not available, Specify Timeline for addition of this parameter. (in months)	Action Taken for addition of this parameter (Specification finalized / procurement initiated / work awarded / outsourced)
--------	--	---------------------------------	--	---

A. Sample Matrix / Group of Water and Wastewater

(a) Physical Tests

1	Temperature	Yes		
2	Colour	Yes		
3	pH	Yes		
4	Turbidity	Yes		
5	Conductivity	Yes		
6	Total Solids	Yes		
7	Total Dissolved Solids (TDS)	Yes		
8	Total Suspended Solids (TSS)	Yes		

(b) Inorganic Tests

(i) General & Non-metallic

1	Alkalinity	Yes		
2	Chloride	Yes		
3	Cyanide	Yes		(by test kit method)
4	Dissolved oxygen	Yes		
5	Nitrite nitrogen	Yes		
6	Nitrate nitrogen	Yes		
7	Ammonical nitrogen	Yes		
8	Fluoride	Yes		
9	Hardness (Total)	Yes		
10	Calcium	Yes		
11	Magnesium	Yes		
12	Phosphate	Yes		
13	Sulphate	Yes		
14	Sulphide	Yes		
15	Total Residual chlorine (TRC)	Yes		

(ii) Trace Metals Tests

1	Aluminium (Al)	Yes		
2	Arsenic (As) Total	Yes		
3	Barium	Yes		
4	Boron	Yes		
5	Chromium (Cr) Hexavalent	Yes		
6	Chromium (Cr) Total	Yes		
7	Cadmium (Cd)	Yes		
8	Cobalt (Co)	Yes		
9	Copper (Cu)	Yes		
10	Iron (Fe)	Yes		
11	Lead (Pb)	Yes		
12	Manganese (Mn)	Yes		
13	Mercury (Hg)	Yes		
14	Nickel (Ni)	Yes		
15	Potassium (K)	Yes		
16	Sodium (Na)	Yes		
17	Vanadium (V)	Yes		
18	Zinc (Zn)	Yes		

19	Selenium (Se)	Yes		
<b>(c) Organics (General) and Trace Organics Tests</b>				
1	Biological Oxygen Demand (BOD)	Yes		
2	Chemical oxygen demand (COD)	Yes		
3	Oil & Grease	Yes		
4	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	Yes		
5	Benzopyrene	Yes		
6	<b>Pesticides</b>			
<b>6.a Organochlorine Pesticides (OCPs) Tests</b>				
i	Aldrin	Yes		
ii	Alpha Endosulphan	Yes		
iii	p,p'-DDT	Yes		
iv	Alpha-HCH	Yes		
v	Beta HCH	Yes		
vi	Beta Endosulphan	Yes		
vii	Gamma-HCH	Yes		
viii	o,p'-DDT	Yes		
ix	p,p'-DDE	Yes		
<b>6.b Organophosphorus Pesticides (OPPs) Tests</b>				
i	Malathion	Yes		
ii	Methyl parathion	Yes		
iii	Chlorpyrifos	Yes		
iv	Dimethoate	No		
v	Dieldrin	Yes		
vi	Ethion	No		
<b>(d) Microbiological Tests</b>				
1	Total Coliform	Yes		
2	Faecal Coliform	Yes		
3	E. Coli	Yes		
4	Faecal Streptococci	Yes		
<b>(e) Toxicological Tests</b>				
1	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent)	Yes		
<b>B. Sample Matrix / Group of Solid / Solid Waste</b>				
<b>(a) Soil / Sediment / Compost Tests</b>				
1	Cation Exchange Capacity (CEC)	Yes		
2	Electrical Conductivity (EC)	Yes		
3	Organic carbon (Chemical Method)	Yes		
4	pH	Yes		
5	Soil moisture	Yes		
6	Total nitrogen	Yes		
7	Metals by digestion (As, Cd, Cr, Pb, Ni etc.)	Yes		
<b>(b) Hazardous Waste (Liquid / Slurry / Sludge / Solid / Semi-Solid) Tests</b>				
1	Corrosivity	Yes		
2	Ignitability (Flash Point)	Yes		
3	Loss on Drying at 1050C (% Moisture Content)	Yes		
4	Loss on Drying at 5500C (% Organic Content)	Yes		
5	pH	Yes		
6	Organic carbon/matter (Chemical Method)	Yes		
7	Calorific Value	Yes		
8	Toxicity Characteristics leaching procedure (TCLP) Leachate and Metals in Leachate (As,Cd,Cr, Pb, Ni)	Yes		

C. Sample Matrix / Group of Analytes: Air				
<b>(a) Ambient Air</b>				
1	Nitrogen dioxide as NO <sub>2</sub>	Yes		
2	Sulphur dioxide (SO <sub>2</sub> )	Yes		
3	Particulate matter (PM <sub>10</sub> )	Yes		
4	Particulate matter (PM <sub>2.5</sub> )	Yes		
5	Carbon Monoxide	Yes		
6	Ozone	Yes		
7	Benzene	Yes		
8	Ammonia	Yes		
9	Metals in Particulate Matter, Pb	Yes		
10	Metals in Particulate Matter, As	Yes		
11	Metals in Particulate Matter, Ni	Yes		
12	Particulate Benzo-a-Pyrene (BaP)	Yes		
<b>(b) Stack Gas / Stationary Source Emission</b>				
1	Particulate Matter	Yes		
2	Sulphur Dioxide	Yes		
3	Carbon Dioxide	Yes		
4	Carbon Monoxide (NDIR based Method)	Yes		
5	Temperature	Yes		
6	Moisture	Yes		
7	Oxygen	Yes		
8	Oxides of Nitrogen	Yes		
9	Halides (HCL/HF)	No	12 months	specification & vendor evaluation is under process
<b>(c) Noise Level</b>				
1	Ambient Noise level measurement (20 to 140 dB)	Yes		
2	Source Noise Level Measurement (Industrial process, DG set- 20 to 140dB)	Yes		
<b>(d) Meteorological Monitoring</b>				
1	Ambient Temperature	Yes		
2	Wind direction	Yes		
3	Wind speed	Yes		
4	Relative Humidity	Yes		
5	Mixing Height	No	12 months	specification & vendor evaluation is under process
Specific remarks, if any:				
<b>PART II: Details of Laboratory Infrastructure (Instruments and Equipment) as on 30/11/2025 :</b>				
S. No.	Name of Instrument / Equipments	Available Yes / No	If the Instrument / Equipment is not available, Specify Timeline for procurement of this instrument (in months)	Action Taken for procurement of this Instrument / Equipment (Specification finalized / procurement initiated / work awarded / outsourced )
<b>A. List of Instruments / Equipment for Sampling of Water, Wastewater and Soil / Hazardous Wastes</b>				
<b>a) Mandatory Requirements</b>				
1	Portable / Pen type pH meter / pH strip	Yes		
2	Portable Dissolved Oxygen Meter / Field Fixing using chemicals	Yes		
3	Electrical Conductivity meter pen type	Yes		

4	Flow meter / Physical flow measuring	Yes		
5	GPS / Mobile with GPS app	Yes		
6	Ice Box (2 nos.) (150 litre & 100 litre capacities)	Yes		
7	Thermometer	Yes		
8	Stainless steel bucket with nylon rope and mug	Yes		
9	Ground water level measuring device	No	12	Specification Finalized
10	Scoop / shovel	Yes		
11	Auger / core sampler	Yes		
<b>b) Optional Requirements</b>				
1	Bottom Sampler / Depth sampler	Yes		
2	Chloroscope for residual chlorine	Yes		
3	Vandorn or equivalent water sampler (Automatic sampler when composite sampling to be done)	Yes		
4	Ekman Dredge	Yes		
<b>B. List of Instruments / Equipment for Sampling of Ambient Air and Source Emission monitoring</b>				
<b>a) Mandatory Requirements</b>				
1	Fine dust samplers PM2.5 (*4 Nos)	Yes		
2	Respirable Dust Sampler PM 10 (* 4 Nos)	Yes		
3	High Volume Sampler ( SPM ) (4 Nos)	Yes	12 months	(2 nos. procurement underprocess)
4	Handy Sampler with set of glass impingers (*2 Nos)	No		( procurement done, waiting for delivery )
5	Low Volume Sampler (LVS)	No	12 months	Specification Finalized
6	Tedler bags different sizes	Yes		
7	Meteorological tower (All in one telescopic Mast) with sensors comprising wind speed, wind direction, ambient temp., Relative humidity, Solar radiation, rainfall etc.	Yes		
8	Nitrogen Cylinder portable	No	12 months	Specification Finalized
9	Activated Charcoal tubes/ Tenex	No	12 months	Specification Finalized
10	Barometer (Digital)	Yes		
11	Isokinetic Stack Monitoring Kit complete with Stack monitoring instrument panel with inclined cum vertical manometer, Cold Box, Vacuum pump, Glass assembly impingers	Yes		
12	Modified S type Stainless steel Pitot tube (Standard length) with Assembly	Yes		
13	Monoblock type, rotary design vacuum pump	Yes		
14	Orsat Apparatus	No	12 months	Specification Finalized
15	Source emission monitoring Impingers train set with spare impingers 100 ml & 225 ml capacity	Yes		
16	Stainless steel heated Sampling Probes with thimble holders short and long	Yes		
17	Flue Gas analyzer	Yes		
18	Thermoneter/ Thermocouple	Yes		

19	Calibrator for Noise Meters	Yes		
20	Digital Sound level ( Noise ) Metres	Yes		
21	Portable TOC Analyzer for emission monitoring.	No	12 months	Specification Finalized
22	Polyurethane Foam PUF Sampler	No	12 months	Specification Finalized

**b) Optional Requirements**

1	Anemometer	Yes		
2	Weather Monitoring system	Yes		
3	Wind speed/wind direction monitor	Yes		
4	Continuous Ambient Air Monitoring System, Fixed	Yes		
5	Continuous PM10 Analyzer	Yes		
6	Continuous Ambient Air Monitoring System, Mobile	Yes		
7	Continuous PM2.5 analyzer	Yes		
8	Ambient Nitrogen Oxides (NO-NO2-NOx) Analyzer	Yes		
9	Ambient Ozone Analyzer	Yes		
10	Ambient BTEX Analyzer	Yes		
11	Multipoint Gas Calibration system	Yes		
12	Ambient Sulphur Dioxide analyzer	Yes		
13	Ambient Carbon Monoxide & Carbon dioxide analyzer	Yes		
14	Total Hydrocarbon analyzer	Yes		
15	Ambient Ammonia analyzer	Yes		
16	Zero Gas Generator	No		
17	Synthetic Air Cylinder	No		
18	Calibration Gas Cylinders, SO2, NO, CO, NH3, Benzene and Toluene One each with stainless steel Regulators	No		
19	Continuous emission monitoring equipment	Yes		
20	19 inch Rack mounting system for air analyzers	No		
21	Dry Gas Meter	Yes		
22	Diesel Exhaust analyzer	No		
23	Exhaust CO/HC analyzer with Sampling Probe	No		
24	Automated Noise Monitoring System	Yes		
25	Integrating Sound level meter	Yes		
26	Continuous PM10 & PM2.5 Monitoring Analyzer TEOM system	Yes		
27	Top loading orifice kit for calibration of HVS	No		
28	Permeation tubes (SO2, NO-NO2-NOx, NH3, BTX)	No		

**C. List of Equipment required for processing of Environmental Samples:****a) Mandatory Requirements**

1	Accelerated Solvent Extraction (ASE) System	Yes		
2	Ammonia distillation assembly/TKN Analyzer	Yes		
3	Analytical Balance 4/5 digit & 6 digit (Digital)	Yes		

4	Aquarium for Toxicity bioassay test with complete accessories (*4 Nos)	Yes		
5	Autoclave (*2 Nos)	Yes		
6	Bacteriological Incubators Stainless steel (*2 Nos)	Yes		
7	Bio safety cabinets	Yes		
8	BOD Incubators (2 nos.)	Yes		
9	Centrifuge	Yes		
10	COD Digestion heated Blocks (2) with capacity 16 nos. or more	Yes		
11	Cyanide Distillation Assembly (3)	No	12 months	Specification Finalized
12	Deep Freezer- Capacity 500 litre	Yes		
13	Laboratory Ball Mill Grinder	Yes		
14	Laboratory Grinder	Yes		
15	Laminar Flow bench for Microbiological analysis	Yes		
16	Magnetic Stirrer with heating system (*2 Nos)	No	12 months	Specification Finalized
17	Mechanical Shaker	Yes		
18	Membrane Filtration assembly with vacuum pump (2 nos.)	Yes		
19	Microbial culture refrigerator	Yes		
20	Microwave Digester with 16 vessels/ Hot Plate	Yes		
21	Muffle Furnace (*1 Nos), Range 1200 C	Yes		
22	Phenol distillation assembly (3)	No	12 months	Specification Finalized
23	Plate counter, Manual/Automatic	Yes		
24	Digestion Chambers/ Fume hood	Yes		
25	Digital Thermometer & Humidity meter- All lab area	Yes		
26	Dispensers (Various capacities ) up to 5, 10, 25 & 50 ml	Yes		
27	Filtration Assembly with vacuum pump	Yes		
28	Fluoride Distillation Assembly (3)	No	12 months	Specification Finalized
29	Arsenic / Fluoride Glass Distillation assemblies	No	12 months	Specification Finalized
30	Glass Double Distillation Assembly /Water Purification System	Yes		
31	Heating mantles (2 nos.)	Yes		
32	Hot plates (small, Medium and Large ) (*2 nos.)	Yes		
33	Thermo Hygrometer	Yes		
34	Imhoff Cone	Yes		
35	Top loading Precision Digital Balance (minimum detection 0.001mg/0.01 mg) with anti-vibration facility- 3 nos. i.e 4/5 Digit (2 nos), - 6 Digit (1 no)	Yes		
36	Refrigerators Big Size 300 litres or more, double door- 2 nos.	Yes		
37	Rotary Evaporator (Buchi type) with water recirculating chiller	Yes		
38	Separating funnel shaker	Yes		
39	Soxhlet Apparatus	Yes		
40	Solid Phase Extraction (SPE) /SPME Extraction system	Yes		
41	Thermometer (Alcohol)	Yes		

42	Dry & wet bulb Thermometer	Yes		
43	Toxicity characteristic leaching procedure (TCLP) Extractors (Zero head and Bottle)	Yes		
44	Ultra sonic water bath- Capacity 3 litre	Yes		
45	Water Bath with temperature control (*2 Nos)	Yes		
46	Water Bath with temp. for mercury sample digestion- 20 BOD Bottles	Yes		
<b>D. Analytical Instruments at Environmental Laboratories</b>				
<b>a) Mandatory Requirements</b>				
1	Atomic Absorption spectrometer (AAS)- Flame, Hydride & Graphite Tube Atomizer (GTA)	Yes		
2	Binocular Stereo Zoom Microscope	Yes		
3	Bomb Calorimeter	Yes		
4	BTX Analyzer with BTX calibrator	Yes		
5	Colony counter	Yes		
6	Conductivity meter- 2 nos.	Yes		
7	Environment conditioning chamber			
8	Digital Burettes- 50 ml*2, 100 ml*2	Yes		
9	Dissolved Oxygen Meter (Bench model)	Yes		
10	Flame Photometer	Yes		
11	Flash Point Apparatus	Yes		
12	Gas Chromatograph Mass Spectrometer	Yes		
13	High Performance Liquid Chromatograph (HPLC)	Yes		
14	Inductively Coupled Plasma (ICP) Spectrometer-OES			
15	Ion Chromatograph Anion & Cations	No	12 months	Specification Finalized
16	Methane and Non Methane (NMHC) Analyzer	Yes		
17	Microscope – 100x	Yes		
18	Microscope Binocular Research	Yes		
19	CO (NDIR based) Analyzer	Yes		
20	Nephelometer (Turbidity Meter)	Yes		
21	pH-Meter with combined electrode (3 point)- 2 nos.	Yes		
22	Specific ion Analyzer with ion selective electrodes	No	12 months	Specification Finalized
23	Spectrophotometer Visible (Portable)	No	12 months	Specification Finalized
24	TKN Analyzer semi-automatic with aluminum block digester	Yes		
25	UV-Vis Spectrophotometer	Yes		
26	Moisture Content Analyzer	Yes		
<b>b) Optional Requirements</b>				
1	Automatic Titration Assembly	Yes		
2	Carbon, Hydrogen, Nitrogen and Sulphur (CHNS) Elemental Analyzer	Yes		
3	EDXRF Analyzer/WDXRF Analyzer	No	12 months	Specification Finalized

4	Fourier-transform infrared Spectrometer (FTIR)			
5	Flocculator ( Jar testing apparatus)	Yes		
6	Toxic Gas Analyzer	Yes		
7	Organic Halogen (AOX/TOX) Analyzer			
8	TOC Analyzer	No		
9	High Resolution Mass Spectrometer (HRGC-HRMS)			
10	Inductively Coupled Plasma Mass (ICP-MS) Spectrometer	Yes		
11	X Ray Fluorescence (XRF) Spectrometer (Portable)			
Specific remarks, if any:				

*Sardhyn*  
 डॉ. रंजिता मोरुपले  
 वैज्ञानिक

Note: It is requested to please ensure that each sheet is created separately for each laboratory and rename the sheet accordingly. For e.g. Central Laboratory, Regional Laboratory etc

LABORATORY ANALYTICAL FACILITIES

Name of the Board / Committee: Regional Laboratory Shahdol, Madhya Pradesh Pollution Control Board M.P

PART I: Facility available for monitoring of environmental parameters:

S. No.	Parameters	Facilities Available (Yes / No)	If facility is not available, Specify Timeline for addition of this parameter. (in months)	Action Taken for addition of this parameter (Specification finalized / procurement initiated / work awarded / outsourced)
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A. Sample Matrix / Group of Water and Wastewater

(a) Physical Tests

1	Temperature	Yes		
2	Colour	Yes		
3	pH	Yes		
4	Turbidity	Yes		
5	Conductivity	Yes		
6	Total Solids	Yes		
7	Total Dissolved Solids (TDS)	Yes		
8	Total Suspended Solids (TSS)	Yes		

(b) Inorganic Tests

(i) General & Non-metallic

1	Alkalinity	Yes		
2	Chloride	Yes		
3	Cyanide	No		
4	Dissolved oxygen	Yes		
5	Nitrite nitrogen	Yes		
6	Nitrate nitrogen	Yes		
7	Ammonical nitrogen	Yes		
8	Fluoride	No		
9	Hardness (Total)	Yes		
10	Calcium	No		
11	Magnesium	No		
12	Phosphate	Yes		
13	Sulphate	Yes		
14	Sulphide	No		
15	Total Residual chlorine (TRC)	No		

(ii) Trace Metals Tests

1	Aluminium (Al)	No		
2	Arsenic (As) Total	No		
3	Barium	No		
4	Boron	No		
5	Chromium (Cr) Hexavalent	No		
6	Chromium (Cr) Total	No		
7	Cadmium (Cd)	No		
8	Cobalt (Co)	No		
9	Copper (Cu)	No		
10	Iron (Fe)	No		
11	Lead (Pb)	No		
12	Manganese (Mn)	No		
13	Mercury (Hg)	No		

14	Nickel (Ni)	No	
15	Potassium (K)	Yes	
16	Sodium (Na)	Yes	
17	Vanadium (V)	No	
18	Zinc (Zn)	No	
19	Selenium (Se)	No	
<b>(c) Organics (General) and Trace Organics Tests</b>			
1	Biological Oxygen Demand (BOD)	Yes	
2	Chemical oxygen demand (COD)	Yes	
3	Oil & Grease	Yes	
4	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	No	
5	Benzopyrene	No	
<b>Pesticides</b>			
<b>6.a Organochlorine Pesticides (OCPs) Tests</b>			
i	Aldrin	No	
ii	Alpha Endosulphan	No	
iii	p,p'-DDT	No	
iv	Alpha-HCH	No	
v	Beta HCH	No	
vi	Beta Endosulphan	No	
vii	Gama-HCH	No	
viii	o,p'-DDT	No	
ix	p,p'-DDE	No	
<b>6.b Organophosphorus Pesticides (OPPs) Tests</b>			
i	Malathion	No	
ii	Methyl parathion	No	
iii	Chlorpyrifos	No	
iv	Dimethoate	No	
v	Dieldrin	No	
vi	Ethion	No	
<b>(d) Microbiological Tests</b>			
1	Total Coliform	Yes	
2	Faecal Coliform	Yes	
3	E. Coli	No	
4	Faecal Streptococci	No	
<b>(e) Toxicological Tests</b>			
1	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent)	No	
<b>B. Sample Matrix / Group of Solid / Solid Waste</b>			
<b>(a) Soil / Sediment / Compost Tests</b>			
1	Cation Exchange Capacity (CEC)	No	
2	Electrical Conductivity (EC)	No	
3	Organic carbon (Chemical Method)	No	
4	pH	Yes	
5	Soil moisture	No	
6	Total nitrogen	No	
7	Metals by digestion (As, Cd, Cr, Pb, Ni etc.)	No	
<b>(b) Hazardous Waste (Liquid / Slurry / Sludge / Solid / Semi-Solid) Tests</b>			
1	Corrosivity	No	
2	Ignitability (Flash Point)	No	
3	Loss on Drying at 1050C (% Moisture Content)	No	
4	Loss on Drying at 5500C (% Organic Content)	No	
5	pH	No	
6	Organic carbon/matter (Chemical Method)	No	
7	Calorific Value	No	

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Toxicity Characteristics leaching procedure (T4855  
Leachate and Metals in Leachate (As,Cd,Cr, Pb, Ni) No

## C. Sample Matrix / Group of Analytes: Air

## (a) Ambient Air

1	Nitrogen dioxide as NO <sub>2</sub>	Yes	
2	Sulphur dioxide (SO <sub>2</sub> )	Yes	
3	Particulate matter (PM <sub>10</sub> )	Yes	
4	Particulate matter (PM <sub>2.5</sub> )	Yes	
5	Carbon Monoxide	Yes	
6	Ozone	Yes	
7	Benzene	No	
8	Ammonia	Yes	
9	Metals in Particulate Matter, Pb	No	
10	Metals in Particulate Matter, As	No	
11	Metals in Particulate Matter, Ni	No	
12	Particulate Benzo-a-Pyrene (BaP)	No	

## (b) Stack Gas / Stationary Source Emission

1	Particulate Matter	Yes	
2	Sulphur Dioxide	Yes	
3	Carbon Dioxide	Yes	
4	Carbon Monoxide (NDIR based Method)	No	
5	Temperature	Yes	
6	Moisture	No	
7	Oxygen	No	
8	Oxides of Nitrogen	No	
9	Halides (HCL/HF)	No	

## (c) Noise Level

1	Ambient Noise level measurement (20 to 140 dB)	Yes	
2	Source Noise Level Measurement (Industrial process, DG set- 20 to 140dB)	Yes	

## (d) Meteorological Monitoring

1	Ambient Temperature	No	
2	Wind direction	No	
3	Wind speed	No	
4	Relative Humidity	No	
5	Mixing Height	No	

Specific remarks, if any:

S. No.	Name of Instrument / Equipments	Available Yes / No	If the Instrument / Equipment is not available, Specify Timeline for procurement of this instrument (in months)	Action Taken for procurement of this Instrument / Equipment (Specification finalized / procurement initiated / work awarded / outsourced )
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## A. List of Instruments / Equipment for Sampling of Water, Wastewater and Soil / Hazardous Wastes

## a ) Mandatory Requirements

1	Portable / Pen type pH meter / pH strip	Yes	
2	Portable Dissolved Oxygen Meter / Field Fixing using chemicals	No	
3	Electrical Conductivity meter pen type	No	

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4	Flow meter / Physical flow measuring	No		
5	GPS / Mobile with GPS app	Yes		
6	Ice Box (2 nos.) (150 litre & 100 litre capacities)	Yes		
7	Thermometer	Yes		
8	Stainless steel bucket with nylon rope and mug	Yes		
9	Ground water level measuring device	No		
10	Scoop / shovel	No		
11	Auger / core sampler	No		
<b>b) Optional Requirements</b>				
1	Bottom Sampler / Depth sampler	No		
2	Chloroscope for residual chlorine	No		
3	Vandorn or equivalent water sampler (Automatic sampler when composite sampling to be done)	No		
4	Ekman Dredge	No		
<b>B. List of Instruments / Equipment for Sampling of Ambient Air and Source Emission monitoring</b>				
<b>a) Mandatory Requirements</b>				
1	Fine dust samplers PM2.5 (*4 Nos)	Yes		
2	Respirable Dust Sampler PM 10 (* 4 Nos)	Yes		
3	High Volume Sampler ( SPM ) (4 Nos)	Yes		
4	Handy Sampler with set of glass impingers (*2 Nos)	No		
5	Low Volume Sampler (LVS)	No		
6	Tedler bags different sizes	No		
7	Meteorological tower (All in one telescopic Mast) with sensors comprising wind speed, wind direction, ambient temp., Relative humidity, Solar radiation, rainfall etc.	No		
8	Nitrogen Cylinder portable	No		
9	Activated Charcoal tubes/ Tenex	No		
10	Barometer (Digital)	No		
11	Isokinetic Stack Monitoring Kit complete with Stack monitoring instrument panel with inclined cum vertical manometer, Cold Box, Vacuum pump, Glass assembly impingers	Yes		
12	Modified S type Stainless steel Pitot tube (Standard length) with Assembly	Yes		
13	Monoblock type, rotary design vacuum pump	No		
14	Orsat Apparatus	No		
15	Source emission monitoring Impingers train set with spare impingers 100 ml & 225 ml capacity	Yes		
16	Stainless steel heated Sampling Probes with thimble holders short and long	No		
17	Flue Gas analyzer	Yes		
18	Thermometer/ Thermocouple	Yes		
19	Calibrator for Noise Meters	Yes		
20	Digital Sound level ( Noise ) Metres	Yes		
21	Portable TOC Analyzer for emission monitoring.	No		
22	Polyurethane Foam PUF Sampler	No		
<b>b) Optional Requirements</b>				
1	Anemometer	No		
2	Weather Monitoring system	No		
3	Wind speed/wind direction monitor	No		
4	Continuous Ambient Air Monitoring System, Fixed	Yes		
5	Continuous PM10 Analyzer	Yes		
6	Continuous Ambient Air Monitoring System, Mobile	No		
7	Continuous PM2.5 analyzer	Yes		



8	Ambient Nitrogen Oxides (NO-NO2-NOx Analyzer)	Yes		
9	Ambient Ozone Analyzer	Yes		
10	Ambient BTEX Analyzer	No		
11	Multipoint Gas Calibration system	Yes		
12	Ambient Sulphur Dioxide analyzer	Yes		
13	Ambient Carbon Monoxide & Carbon dioxide analyzer	Yes		
14	Total Hydrocarbon analyzer	No		
15	Ambient Ammonia analyzer	Yes		
16	Zero Gas Generator	No		
17	Synthetic Air Cylinder	No		
18	Calibration Gas Cylinders, SO2, NO, CO, NH3, Benzene and Toluene One each with stainless steel Regulators	No		
19	Continuous emission monitoring equipment	Yes		
20	19 inch Rack mounting system for air analyzers	Yes		
21	Dry Gas Meter	No		
22	Diesel Exhaust analyzer	Yes		
23	Exhaust CO/HC analyzer with Sampling Probe	Yes		
24	Automated Noise Monitoring System	Yes		
25	Integrating Sound level meter	Yes		
26	Continuous PM10 & PM2.5 Monitoring Analyzer TEOM system	Yes		
27	Top loading orifice kit for calibration of HVS	No		
28	Permeation tubes (SO2, NO-NO2-NOx, NH3, BTX)	Yes		

**C. List of Equipment required for processing of Environmental Samples:**

**a) Mandatory Requirements**

1	Accelerated Solvent Extraction (ASE) System	No		
2	Ammonia distillation assembly/TKN Analyzer	Yes		
3	Analytical Balance 4/5 digit & 6 digit (Digital)	Yes		
4	Aquarium for Toxicity bioassay test with complete accessories (*4 Nos)	No		
5	Autoclave (*2 Nos)	Yes		
6	Bacteriological Incubators Stainless steel (*2 Nos)	Yes		
7	Bio safety cabinets	No		
8	BOD Incubators (2 nos.)	Yes		
9	Centrifuge	No		
10	COD Digestion heated Blocks (2) with capacity 16 nos. or more	Yes		
11	Cyanide Distillation Assembly (3)	No		
12	Deep Freezer- Capacity 500 litre	No		
13	Laboratory Ball Mill Grinder	No		
14	Laboratory Grinder	No		
15	Laminar Flow bench for Microbiological analysis	Yes		
16	Magnetic Stirrer with heating system (*2 Nos)	Yes		
17	Mechanical Shaker	No		
18	Membrane Filtration assembly with vacuum pump (2 nos.)	No		
19	Microbial culture refrigerator	No		
20	Microwave Digester with 16 vessels/ Hot Plate	No		
21	Muffle Furnace (*1 Nos), Range 1200 C	Yes		
22	Phenol distillation assembly (3)	No		
23	Plate counter, Manual/Automatic	No		
24	Digestion Chambers/ Fume hood	Yes		

25	Digital Thermometer & Humidity meter- All lab	Yes		
26	Dispensers (Various capacities ) up to 5, 10, 25 & 50 ml	Yes		
27	Filtration Assembly with vacuum pump	No		
28	Fluoride Distillation Assembly (3)	No		
29	Arsenic / Fluoride Glass Distillation assemblies	No		
30	Glass Double Distillation Assembly /Water Purification System	No		
31	Heating mantles (2 nos.)	No		
32	Hot plates (small, Medium and Large ) (*2 nos.)	No		
33	Thermo Hygrometer	No		
34	Imhoff Cone	No		
35	Top loading Precision Digital Balance (minimum detection 0.001mg/0.01 mg) with anti-vibration facility- 3 nos. i.e 4/5 Digit (2 nos), - 6 Digit (1 no)	Yes		
36	Refrigerators Big Size 300 litres or more, double door- 2 nos.	Yes		
37	Rotary Evaporator (Buchi type) with water recirculating chiller	No		
38	Separating funnel shaker	Yes		
39	Soxhlet Apparatus	Yes		
40	Solid Phase Extraction (SPE) /SPME Extraction system	No		
41	Thermometer (Alcohol)	Yes		
42	Dry & wet bulb Thermometer	No		
43	Toxicity characteristic leaching procedure (TCLP) Extractors (Zero head and Bottle)	No		
44	Ultra sonic water bath- Capacity 3 litre	No		
45	Water Bath with temperature control (*2 Nos)	Yes		
46	Water Bath with temp. for mercury sample digestion- 20 BOD Bottles	No		

#### D. Analytical Instruments at Environmental Laboratories

##### a) Mandatory Requirements

1	Atomic Absorption spectrometer (AAS)- Flame, Hydride & Graphite Tube Atomizer (GTA)	No		
2	Binocular Stereo Zoom Microscope	No		
3	Bomb Calorimeter	No		
4	BTX Analyzer with BTX calibrator	No		
5	Colony counter	No		
6	Conductivity meter- 2 nos.	Yes		
7	Environment conditioning chamber	No		
8	Digital Burettes- 50 ml*2, 100 ml*2	Yes		
9	Dissolved Oxygen Meter (Bench model)	No		
10	Flame Photometer	Yes		
11	Flash Point Apparatus	No		
12	Gas Chromatograph Mass Spectrometer	No		
13	High Performance Liquid Chromatograph (HPLC)	No		
14	Inductively Coupled Plasma (ICP) Spectrometer-OES	No		
15	Ion Chromatograph Anion & Cations	No		
16	Methane and Non Methane (NMHC) Analyzer	No		
17	Microscope – 100x	No		
18	Microscope Binocular Research	No		

19	CO (NDIR based) Analyzer	Yes		
20	Nephelometer (Turbidity Meter)	Yes		
21	pH-Meter with combined electrode (3 point)- 2 nos.	Yes		
22	Specific ion Analyzer with ion selective electrodes	No		
23	Spectrophotometer Visible (Portable)	No		
24	TKN Analyzer semi-automatic with aluminum block digester	Yes		
25	UV-Vis Spectrophotometer	Yes		
26	Moisture Content Analyzer	No		
<b>b) Optional Requirements</b>				
1	Automatic Titration Assembly	Yes		
2	Carbon, Hydrogen, Nitrogen and Sulphur (CHNS) Elemental Analyzer	No		
3	EDXRF Analyzer/WDXRF Analyzer	No		
4	Fourier-transform infrared Spectrometer (FTIR)	No		
5	Flocculator ( Jar testing apparatus)	No		
6	Toxic Gas Analyzer	No		
7	Organic Halogen (AOX/TOX) Analyzer	No		
8	TOC Analyzer	No		
9	High Resolution Mass Spectrometer (HRGC-HRMS)	No		
10	Inductively Coupled Plasma Mass (ICP-MS) Spectrometer	No		
11	X Ray Fluorescence (XRF) Spectrometer (Portable)	No		
<b>Specific remarks, if any:</b>				

  
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 Shahdol



क्षेत्रीय कार्यालय  
म.प्र. प्रदूषण नियंत्रण बोर्ड  
एच. आई.जी.190-191 नेहरू नगर रीवा  
(Tel & Fax 07662-230605, e-mail-ropcb-rewa@mp.gov.in)

क्रमांक / 1285 / क्षे.का. / प्रनिबो / 2025

रीवा, दिनांक 11.11.2025

प्रति,

प्रयोगशाला प्रभारी,  
केन्द्रीय प्रयोगशाला  
म.प्र. प्रदूषण नियंत्रण बोर्ड  
भोपाल (म.प्र.)

विषय:- माननीय राष्ट्रीय हरित अधिकरण, प्रिंसिपल बैंच प्रकरण क्रमांक ओ.ए. क. 693/2023 में दिनांक 14.10.2025 को पारित आदेश बावत्।

सन्दर्भ:- 1. केन्द्रीय प्रयोगशाला भोपाल का पत्र क्र. 391 दिनांक 03.11.25

उपरोक्त सन्दर्भित विषयान्तर्गत लेख है कि उपरोक्त संदर्भित पत्र के परिपेक्ष्य में उपलब्ध स्प्रेडशीट में एनैक्शर 02 के पार्ट 1 एवं 2 की जानकारी अपडेट कर कृपया आपकी ओर आवश्यक कार्यवाही हेतु प्रेषित है।

संलग्न - उपरोक्तानुसार,

  
(प्रयोगशाला प्रभारी)  
म.प्र. प्रदूषण नियंत्रण बोर्ड,  
क्षेत्रीय प्रयोगशाला, रीवा (म.प्र.)

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Note: It is requested to please ensure that each sheet is created separately for each laboratory and rename the sheet accordingly . For e.g. Central Laboratory, Regional Laboratory etc.

### LABORATORY ANALYTICAL FACILITIES

Name of the Board / Committee: Regional Laboratory Rewa, Madhya Pradesh Pollution Control Board M.P (RO Rewa)

#### PART I: Facility available for monitoring of environmental parameters:

S. No.	Parameters	Facilities Available (Yes / No)	If facility is not available, Specify Timeline for addition of this parameter. (in months)	Action Taken for addition of this parameter (Specification finalized / procurement initiated / work awarded / outsourced )
<b>A. Sample Matrix / Group of Water and Wastewater</b>				
<b>(a) Physical Tests</b>				
1	Temperature	Yes		
2	Colour	Yes		
3	pH	Yes		
4	Turbidity	Yes		
5	Conductivity	Yes		
6	Total Solids	Yes		

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 M.P.P.C.B. REWA

7	Total Dissolved Solids (TDS)	Yes			
8	Total Suspended Solids (TSS)	Yes			
<b>(b) Inorganic Tests</b>					
<b>(i) General &amp; Non-metallic</b>					
1	Alkalinity	Yes			
2	Chloride	Yes			
3	Cyanide	No			
4	Dissolved oxygen	Yes			
5	Nitrite nitrogen	Yes			
6	Nitrate nitrogen	Yes			
7	Ammonical nitrogen	Yes			
8	Fluoride	Yes			
9	Hardness (Total)	Yes			
10	Calcium	Yes			
11	Magnesium	Yes			
12	Phosphate	Yes			
13	Sulphate	Yes			
14	Sulphide	No			
15	Total Residual chlorine (TRC)	No			
<b>(ii) Trace Metals Tests</b>					
1	Aluminium (Al)	No			Samples are sent to Central Laboratory Bhopal
2	Arsenic (As) Total	No			

  
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3	Barium	No			
4	Boron	No			
5	Chromium (Cr) Hexavalent	No			
6	Chromium (Cr) Total	No			
7	Cadmium (Cd)	No			
8	Cobalt (Co)	No			
9	Copper (Cu)	No			
10	Iron (Fe)	No			
11	Lead (Pb)	No			
12	Manganese (Mn)	No			
13	Mercury (Hg)	No			
14	Nickel (Ni)	No			
15	Potassium (K)	No			
16	Sodium (Na)	No			
17	Vanadium (V)	No			
18	Zinc (Zn)	No			
19	Selenium (Se)	No			
<b>(c) Organics (General) and Trace Organics Tests</b>					
1	Biological Oxygen Demand (BOD)	Yes			
2	Chemical oxygen demand (COD)	Yes			
3	Oil & Grease	Yes			
4	Phenolic Compounds as C6H5OH	No			

  
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5	Benzopyrene	No			
6	Pesticides				
6.a	Organochlorine Pesticides (OCPs) Tests				
i	Aldrin	No			
ii	Alpha Endosulphan	No			
iii	p,p'-DDT	No			
iv	Alpha-HCH	No			
v	Beta HCH	No			
vi	Beta Endosulphan	No			
vii	Gama-HCH	No			
viii	o,p'-DDT	No			
ix	p,p'-DDE	No			
6.b	Organophosphorus Pesticides (OPPs) Tests				
i	Malathion	No			
ii	Methyl parathion	No			
iii	Chlorpyrifos	No			
iv	Dimethoate	No			
v	Dieldrin	No			
vi	Ethion	No			
(d)	Microbiological Tests				
1	Total Coliform	Yes			
2	Faecal Coliform	Yes			

Samples are sent  
to Central  
Laboratory Bhopal

  
LABORATORY INCHARGE  
Regional Office  
M.P.C.B. REWA

3	E. Coli	Yes			
4	Faecal Streptococci	Yes			
<b>(e) Toxicological Tests</b>					
1	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent)	Yes			
<b>B. Sample Matrix / Group of Solid / Solid Waste</b>					
<b>(a) Soil / Sediment / Compost Tests</b>					
1	Cation Exchange Capacity (CEC)	No			
2	Electrical Conductivity (EC)	No			
3	Organic carbon (Chemical Method )	No			
4	pH	Yes			
5	Soil moisture	No			
6	Total nitrogen	No			
7	Metals by digestion (As, Cd, Cr, Pb, Ni etc.)	No			
<b>(b) Hazardous Waste (Liquid / Slurry / Sludge / Solid / Semi-Solid) Tests</b>					
1	Corrosivity	No			
2	Ignitability (Flash Point)	No			
3	Loss on Drying at 1050C (% Moisture Content)	No			
4	Loss on Drying at 5500C (% Organic Content)	No			
5	pH	No			
6	Organic carbon/matter (Chemical Method )	No			
7	Calorific Value	No			
8	Toxicity Characteristics leaching procedure (TCLP)	No			

  
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	Leachate and Metals in Leachate (As,Cd,Cr, Pb, Ni)			
<b>C. Sample Matrix / Group of Analytes: Air</b>				
<b>(a) Ambient Air</b>				
1	Nitrogen dioxide as NO <sub>2</sub>	Yes		
2	Sulphur dioxide (SO <sub>2</sub> )	Yes		
3	Particulate matter (PM <sub>10</sub> )	Yes		
4	Particulate matter (PM <sub>2.5</sub> )	Yes		
5	Carbon Monoxide	No		
6	Ozone	Yes		
7	Benzene	No		
8	Ammonia	Yes		
9	Metals in Particulate Matter, Pb	No		
10	Metals in Particulate Matter, As	No		
11	Metals in Particulate Matter, Ni	No		
12	Particulate Benzo-a-Pyrene (BaP)	No		
<b>(b) Stack Gas / Stationary Source Emission</b>				
1	Particulate Matter	Yes		
2	Sulphur Dioxide	Yes		
3	Carbon Dioxide	No		
4	Carbon Monoxide (NDIR based Method)	No		
5	Temperature	Yes		
6	Moisture	No		

  
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No.		Yes / No	Equipment is not available, Specify Timeline for procurement of this instrument (in months)	procurement of this Instrument / Equipment (Specification finalized / procurement initiated / work awarded / outsourced)
<b>A. List of Instruments / Equipment for Sampling of Water, Wastewater and Soil / Hazardous Wastes</b>				
<b>a) Mandatory Requirements</b>				
1	Portable / Pen type pH meter / pH strip	Yes		
2	Portable Dissolved Oxygen Meter / Field Fixing using chemicals	Yes		
3	Electrical Conductivity meter pen type	No	12 months	Procurement will be initiated soon
4	Flow meter / Physical flow measuring	No		
5	GPS / Mobile with GPS app	Yes		
6	Ice Box (2 nos.) (150 litre & 100 litre capacities)	Yes		
7	Thermometer	Yes		
8	Stainless steel bucket with nylon rope and mug	Yes		
9	Ground water level measuring device	No		
10	Scoop / shovel	No		
11	Auger / core sampler	No		
<b>b) Optional Requirements</b>				
1	Bottom Sampler / Depth sampler	Yes		
2	Chloroscope for residual chlorine	No		
3	Vandorn or equivalent water sampler (Automatic sampler when composite sampling to be done)	No		

  
 LABORATORY INCHARGE  
 Regional Office  
 M.P.C.D. REWA

4	Ekman Dredge	No			
<b>B. List of Instruments / Equipment for Sampling of Ambient Air and Source Emission monitoring</b>					
<b>a) Mandatory Requirements</b>					
1	Fine dust samplers PM2.5 (*4 Nos)	Yes			
2	Respirable Dust Sampler PM 10 (* 4 Nos)	Yes			
3	High Volume Sampler ( SPM ) (4 Nos)	Yes			
4	Handy Sampler with set of glass impingers (*2 Nos)	No			
5	Low Volume Sampler (LVS)	No			
6	Tedler bags different sizes	No			
7	Meteorological tower (All in one telescopic Mast) with sensors comprising wind speed, wind direction, ambient temp., Relative humidity, Solar radiation, rainfall etc.	No			
8	Nitrogen Cylinder portable	No			
9	Activated Charcoal tubes/ Tenex	No			
10	Barometer (Digital)	No			
11	Isokinetic Stack Monitoring Kit complete with Stack monitoring instrument panel with inclined cum vertical manometer, Cold Box, Vacuum pump, Glass assembly impingers	Yes			
12	Modified S type Stainless steel Pitot tube (Standard length) with Assembly	Yes			
13	Monoblock type, rotary design vacuum pump	No			
14	Orsat Apparatus	No			
15	Source emission monitoring Impingers train set with spare impingers 100 ml & 225 ml capacity	Yes			
16	Stainless steel heated Sampling Probes with thimble	Yes			

  
 M.P.C.R. REWA  
 Regional Office  
 LABORATORY INCHARGE

	holders short and long				
17	Flue Gas analyzer	Yes			
18	Thermometer/ Thermocouple	Yes			
19	Calibrator for Noise Meters	Yes			
20	Digital Sound level ( Noise ) Metres	Yes			
21	Portable TOC Analyzer for emission monitoring.	No			
22	Polyurethane Foam PUF Sampler	No			
<b>b) Optional Requirements</b>					
1	Anemometer	No			
2	Weather Monitoring system	No			
3	Wind speed/wind direction monitor	No			
4	Continuous Ambient Air Monitoring System, Fixed	No			
5	Continuous PM10 Analyzer	No			
6	Continuous Ambient Air Monitoring System, Mobile	No			
7	Continuous PM2.5 analyzer	No			
8	Ambient Nitrogen Oxides (NO-NO2-NOx Analyzer	No			
9	Ambient Ozone Analyzer	No			
10	Ambient BTEX Analyzer	No			
11	Multipoint Gas Calibration system	No			
12	Ambient Sulphur Dioxide analyzer	No			
13	Ambient Carbon Monoxide & Carbon dioxide analyzer	No			
14	Total Hydrocarbon analyzer	No			

  
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 Regional Office  
 N.P.C.B. REWA

15	Ambient Ammonia analyzer	No			
16	Zero Gas Generator	No			
17	Synthetic Air Cylinder	No			
18	Calibration Gas Cylinders, SO <sub>2</sub> , NO, CO, NH <sub>3</sub> , Benzene and Toluene One each with stainless steel Regulators	No			
19	Continuous emission monitoring equipment	No			
20	19 inch Rack mounting system for air analyzers	No			
21	Dry Gas Meter	No			
22	Diesel Exhaust analyzer	No			
23	Exhaust CO/HC analyzer with Sampling Probe	Yes			
24	Automated Noise Monitoring System	No			
25	Integrating Sound level meter	No			
26	Continuous PM <sub>10</sub> & PM <sub>2.5</sub> Monitoring Analyzer TEOM system	No			
27	Top loading orifice kit for calibration of HVS	No			
28	Permeation tubes (SO <sub>2</sub> , NO-NO <sub>2</sub> -NO <sub>x</sub> , NH <sub>3</sub> , BTX)	No			
<b>C. List of Equipment required for processing of Environmental Samples:</b>					
<b>a) Mandatory Requirements</b>					
1	Accelerated Solvent Extraction (ASE) System	No			
2	Ammonia distillation assembly/TKN Analyzer	Yes			
3	Analytical Balance 4/5 digit & 6 digit (Digital)	Yes			
4	Aquarium for Toxicity bioassay test with complete accessories (*4 Nos)	No			
5	Autoclave (*2 Nos)	Yes			

  
 LABORATORY INCHARGE  
 Regional Office  
 M.P.C.B. REWA

6	Bacteriological Incubators Stainless steel (*2 Nos)	Yes			
7	Bio safety cabinets	No			
8	BOD Incubators (2 nos.)	Yes			
9	Centrifuge	No			
10	COD Digestion heated Blocks (2) with capacity 16 nos. or more	Yes			
11	Cyanide Distillation Assembly (3)	No			
12	Deep Freezer- Capacity 500 litre	No			
13	Laboratory Ball Mill Grinder	No			
14	Laboratory Grinder	No			
15	Laminar Flow bench for Microbiological analysis	Yes			
16	Magnetic Stirrer with heating system (*2 Nos)	No			
17	Mechanical Shaker	No			
18	Membrane Filtration assembly with vacuum pump (2 nos.)	No			
19	Microbial culture refrigerator	No			
20	Microwave Digester with 16 vessels/ Hot Plate	No			
21	Muffle Furnace (*1 Nos), Range 1200 C	Yes			
22	Phenol distillation assembly (3)	No			
23	Plate counter, Manual/Automatic	No			
24	Digestion Chambers/ Fume hood	No			
25	Digital Thermometer & Humidity meter- All lab area	No			
26	Dispensers (Various capacities ) up to 5, 10, 25 & 50 ml	No			

  
 LABORATORY INCHARGE  
 Regional Office  
 M.P.C.D. REWA

27	Filtration Assembly with vacuum pump	Yes			
28	Fluoride Distillation Assembly (3)	No			
29	Arsenic / Fluoride Glass Distillation assemblies	No			
30	Glass Double Distillation Assembly /Water Purification System	No			
31	Heating mantles (2 nos.)	No			
32	Hot plates (small, Medium and Large ) (*2 nos.)	No			
33	Thermo Hygrometer	No			
34	Imhoff Cone	No			
35	Top loading Precision Digital Balance (minimum detection 0.001mg/0.01 mg) with anti-vibration facility- 3 nos. i.e 4/5 Digit (2 nos), - 6 Digit (1 no)	No			
36	Refrigerators Big Size 300 litres or more, double door- 2 nos.	No			
37	Rotary Evaporator (Buchi type) with water recirculating chiller	No			
38	Separating funnel shaker	No			
39	Soxhlet Apparatus	No			
40	Solid Phase Extraction (SPE) /SPME Extraction system	No			
41	Thermometer (Alcohol)	No			
42	Dry & wet bulb Thermometer	No			
43	Toxicity characteristic leaching procedure (TCLP) Extractors (Zero head and Bottle)	No			
44	Ultra sonic water bath- Capacity 3 litre	No			
45	Water Bath with temperature control (*2 Nos)	Yes			

  
 LABORATORY INCHARGE  
 Regional Office  
 M.P.C.B. REWA

46	Water Bath with temp. for mercury sample digestion- 20 BOD Bottles	No			
<b>D. Analytical Instruments at Environmental Laboratories</b>					
<b>a) Mandatory Requirements</b>					
1	Atomic Absorption spectrometer (AAS)- Flame, Hydride & Graphite Tube Atomizer (GTA)	No			
2	Binocular Stereo Zoom Microscope	No			
3	Bomb Calorimeter	No			
4	BTX Analyzer with BTX calibrator	No			
5	Colony counter	No			
6	Conductivity meter- 2 nos.	Yes			
7	Environment conditioning chamber	No			
8	Digital Burettes- 50 ml*2, 100 ml*2	No			
9	Dissolved Oxygen Meter (Bench model)	No			
10	Flame Photometer	Yes			
11	Flash Point Apparatus	No			
12	Gas Chromatograph Mass Spectrometer	No			
13	High Performance Liquid Chromatograph (HPLC)	No			
14	Inductively Coupled Plasma (ICP) Spectrometer-OES	No			
15	Ion Chromatograph Anion & Cations	No			
16	Methane and Non Methane (NMHC) Analyzer	No			
17	Microscope – 100x	No			
18	Microscope Binocular Research	No			

  
 LABORATORY INCHARGE  
 Regional Office  
 M.P.P.C.B. REWA

19	CO (NDIR based) Analyzer	No			
20	Nephelometer (Turbidity Meter)	Yes			
21	pH-Meter with combined electrode (3 point)- 2 nos.	Yes			
22	Specific ion Analyzer with ion selective electrodes	No			
23	Spectrophotometer Visible (Portable)	No			
24	TKN Analyzer semi-automatic with aluminum block digester	Yes			
25	UV-Vis Spectrophotometer	Yes			
26	Moisture Content Analyzer	No			
<b>b) Optional Requirements</b>					
1	Automatic Titration Assembly	No			
2	Carbon, Hydrogen, Nitrogen and Sulphur (CHNS) Elemental Analyzer	No			
3	EDXRF Analyzer/WDXRF Analyzer	No			
4	Fourier-transform infrared Spectrometer (FTIR)	No			
5	Flocculator ( Jar testing apparatus)	No			
6	Toxic Gas Analyzer	No			
7	Organic Halogen (AOX/TOX) Analyzer	No			
8	TOC Analyzer	No			
9	High Resolution Mass Spectrometer (HRGC-HRMS)	No			
10	Inductively Coupled Plasma Mass (ICP-MS) Spectrometer	No			
11	X Ray Fluorescence (XRF) Spectrometer (Portable)	No			

  
 LABORATORY INCHARGE  
 Regional Office  
 JALPAIGURI, WEST BENGAL



Note: It is requested to please ensure that each sheet is created separately for each laboratory and rename the sheet accordingly . For e.g. Central Laboratory, Regional Laboratory etc

### LABORATORY ANALYTICAL FACILITIES

Name of the Board / Committee: Regional Laboratory Indore, Madhya Pradesh Pollution Control Board M.P (RO Indore)

#### PART I: Facility available for monitoring of environmental parameters:

S. No.	Parameters	Facilities Available (Yes / No)	If facility is not available, Specify Timeline for addition of this parameter. (in months)	Action Taken for addition of this parameter (Specification finalized / procurement initiated / work awarded / outsourced )
<b>A. Sample Matrix / Group of Water and Wastewater</b>				
<b>(a) Physical Tests</b>				
1	Temperature	Yes		
2	Colour	Yes		
3	pH	Yes		
4	Turbidity	Yes		
5	Conductivity	Yes		
6	Total Solids	Yes		
7	Total Dissolved Solids (TDS)	Yes		
8	Total Suspended Solids (TSS)	Yes		
<b>(b) Inorganic Tests</b>				
<b>(i) General &amp; Non-metallic</b>				
1	Alkalinity	Yes		
2	Chloride	Yes		
3	Cyanide	Yes		

Atul Kotiya

Scientist

Regional Laboratory

M.P. Pollution Control Board, Indore

4878

4	Dissolved oxygen	Yes		
5	Nitrite nitrogen	Yes		
6	Nitrate nitrogen	Yes		
7	Ammonical nitrogen	Yes		
8	Fluoride	Yes		
9	Hardness (Total)	Yes		
10	Calcium	Yes		
11	Magnesium	Yes		
12	Phosphate	Yes		
13	Sulphate	Yes		
14	Sulphide	Yes		
15	Total Residual chlorine (TRC)	Yes		

**(ii) Trace Metals Tests**

1	Aluminium (Al)	No		
2	Arsenic (As) Total	Yes		
3	Barium	No		
4	Boron	Yes		
5	Chromium (Cr) Hexavalent	Yes		
6	Chromium (Cr) Total	Yes		
7	Cadmium (Cd)	Yes		
8	Cobalt (Co)	Yes		
9	Copper (Cu)	Yes		
10	Iron (Fe)	Yes		
11	Lead (Pb)	Yes		
12	Manganese (Mn)	Yes		
13	Mercury (Hg)	Yes		
14	Nickel (Ni)	Yes		
15	Potassium (K)	Yes		

16	Sodium (Na)	Yes		
17	Vanadium (V)	Yes		
18	Zinc (Zn)	Yes		
19	Selenium (Se)	No		
<b>(c) Organics (General) and Trace Organics Tests</b>				
1	Biological Oxygen Demand (BOD)	Yes		
2	Chemical oxygen demand (COD)	Yes		
3	Oil & Grease	Yes		
4	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	Yes		
5	Benzopyrene	No		
6	<b>Pesticides</b>			
6.a	<b>Organochlorine Pesticides (OCPs) Tests</b>			
i	Aldrin	No		
ii	Alpha Endosulphan	No		
iii	p,p'-DDT	No		
iv	Alpha-HCH	No		
v	Beta HCH	No		
vi	Beta Endosulphan	No		
vii	Gama-HCH	No		
viii	o,p'-DDT	No		
ix	p,p'-DDE	No		
6.b	<b>Organophosphorus Pesticides (OPPs) Tests</b>			
i	Malathion	No		
ii	Methyl parathion	No		
iii	Chlorpyrifos	No		
iv	Dimethoate	No		
v	Dieldrin	No		
vi	Ethion	No		
<b>(d) Microbiological Tests</b>				
1	Total Coliform	Yes		

Samples are sent to Central Laboratory Bhopal

2	Faecal Coliform	Yes	4880	
3	E. Coli	Yes		
4	Faecal Streptococci	Yes		

**(e) Toxicological Tests**

1	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent)	Yes		
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**B. Sample Matrix / Group of Solid / Solid Waste**

**(a) Soil / Sediment / Compost Tests**

1	Cation Exchange Capacity (CEC)	No		
2	Electrical Conductivity (EC)	Yes		
3	Organic carbon (Chemical Method )	Yes		
4	pH	Yes		
5	Soil moisture	Yes		
6	Total nitrogen	Yes		
7	Metals by digestion (As, Cd, Cr, Pb, Ni etc.)	Yes		

**(b) Hazardous Waste (Liquid / Slurry / Sludge / Solid / Semi-Solid) Tests**

1	Corrosivity	Yes		
2	Ignitability (Flash Point)	Yes		
3	Loss on Drying at 1050C (% Moisture Content)	Yes		
4	Loss on Drying at 5500C (% Organic Content)	Yes		
5	pH	Yes		
6	Organic carbon/matter (Chemical Method )	Yes		
7	Calorific Value	Yes		
8	Toxicity Characteristics leaching procedure (TCLP) Leachate and Metals in Leachate (As,Cd,Cr, Pb, Ni)	Yes		

**/ Group of Analytes: Air**

**(a) Ambient Air**

1	Nitrogen dioxide as NO <sub>2</sub>	Yes		
2	Sulphur dioxide (SO <sub>2</sub> )	Yes		
3	Particulate matter (PM <sub>10</sub> )	Yes		
4	Particulate matter (PM <sub>2.5</sub> )	Yes		
5	Carbon Monoxide	No		
6	Ozone	Yes		
7	Benzene	Yes		
8	Ammonia	Yes		
9	Metals in Particulate Matter, Pb	Yes		
10	Metals in Particulate Matter, As	Yes		
11	Metals in Particulate Matter, Ni	Yes		
12	Particulate Benzo-a-Pyrene (BaP)	No		

**(b) Stack Gas / Stationary Source Emission**

1	Particulate Matter	Yes		
2	Sulphur Dioxide	Yes		
3	Carbon Dioxide	Yes		
4	Carbon Monoxide (NDIR based Method)	Yes		
5	Temperature	Yes		
6	Moisture	Yes		
7	Oxygen	Yes		
8	Oxides of Nitrogen	Yes		
9	Halides (HCL/HF)	Yes		

**(c) Noise Level**

1	Ambient Noise level measurement (20 to 140 dB)	Yes		
2	Source Noise Level Measurement (Industrial process, DG set- 20 to 140dB)	Yes		

**(d) Meteorological Monitoring**

1	Ambient Temperature	Yes		
2	Wind direction	Yes		
3	Wind speed	Yes		
4	Relative Humidity	Yes		
5	Mixing Height	No		

Specific remarks, if any:

**PART II: Details of Laboratory Infrastructure (Instruments and Equipment)**

S. No.	Name of Instrument / Equipments	Available Yes / No	If the Instrument / Equipment is not available, Specify Timeline for procurement of this instrument (in months)	Action Taken for procurement of this Instrument / Equipment (Specification finalized / procurement initiated / work awarded / outsourced )
<b>A. List of Instruments / Equipment for Sampling of Water, Wastewater and Soil / Hazardous Wastes</b>				
<b>a ) Mandatory Requirements</b>				
1	Portable / Pen type pH meter / pH strip	Yes		
2	Portable Dissolved Oxygen Meter / Field Fixing using chemicals	Yes		
3	Electrical Conductivity meter pen type	No		
4	Flow meter / Physical flow measuring	Yes		
5	GPS / Mobile with GPS app	Yes		
6	Ice Box (2 nos.) (150 litre & 100 litre capacities)	Yes		
7	Thermometer	Yes		
8	Stainless steel bucket with nylon rope and mug	Yes		

9	Ground water level measuring device	No		
10	Scoop / shovel	Yes		
11	Auger / core sampler	Yes		
<b>b) Optional Requirements</b>				
1	Bottom Sampler / Depth sampler	Yes		
2	Chloroscope for residual chlorine	Yes		
3	Vandom or equivalent water sampler (Automatic sampler when composite sampling to be done)	Yes		
4	Ekman Dredge	Yes		
<b>B. List of Instruments / Equipment for Sampling of Ambient Air and Source Emission monitoring</b>				
<b>a) Mandatory Requirements</b>				
1	Fine dust samplers PM2.5 (*4 Nos)	Yes		
2	Respirable Dust Sampler PM 10 (* 4 Nos)	Yes		
3	High Volume Sampler ( SPM ) (4 Nos)	No		
4	Handy Sampler with set of glass impingers (*2 Nos)	Yes		
5	Low Volume Sampler (LVS)	Yes		
6	Tedler bags different sizes	Yes		
7	Meteorological tower (All in one telescopic Mast) with sensors comprising wind speed, wind direction, ambient temp., Relative humidity, Solar radiation, rainfall etc.	Yes		
8	Nitrogen Cylinder portable	No		
9	Activated Charcoal tubes/ Tenex	No		
10	Barometer (Digital)	Yes		
11	Isokinetic Stack Monitoring Kit complete with Stack monitoring instrument panel with inclined cum vertical manometer, Cold Box, Vacuum pump, Glass assembly impingers	Yes		

12	Modified S type Stainless steel Pitot tube (Standard length) with Assembly	Yes	4884	
13	Monoblock type, rotary design vacuum pump	Yes		
14	Orsat Apparatus	Yes		
15	Source emission monitoring Impingers train set with spare impingers 100 ml & 225 ml capacity	Yes		
16	Stainless steel heated Sampling Probes with thimble holders short and long	Yes		
17	Flue Gas analyzer	Yes		
18	Thermometer/ Thermocouple	Yes		
19	Calibrator for Noise Meters	Yes		
20	Digital Sound level ( Noise ) Metres	Yes		
21	Portable TOC Analyzer for emission monitoring.	No		
22	Polyurethane Foam PUF Sampler	No		

**b) Optional Requirements**

1	Anemometer	Yes		
2	Weather Monitoring system	Yes		
3	Wind speed/wind direction monitor	Yes		
4	Continuous Ambient Air Monitoring System, Fixed	Yes		
5	Continuous PM10 Analyzer	Yes		
6	Continuous Ambient Air Monitoring System, Mobile	Yes		
7	Continuous PM2.5 analyzer	Yes		
8	Ambient Nitrogen Oxides (NO-NO2-NOx Analyzer	Yes		
9	Ambient Ozone Analyzer	Yes		
10	Ambient BTEX Analyzer	No		
11	Multipoint Gas Calibration system	Yes		

12	Ambient Sulphur Dioxide analyzer	Yes		
13	Ambient Carbon Monoxide & Carbon dioxide analyzer	Yes		
14	Total Hydrocarbon analyzer	Yes		
15	Ambient Ammonia analyzer	Yes		
16	Zero Gas Generator	No		
17	Synthetic Air Cylinder	No		
18	Calibration Gas Cylinders, SO <sub>2</sub> , NO, CO, NH <sub>3</sub> , Benzene and Toluene One each with stainless steel Regulators	Yes		
19	Continuous emission monitoring equipment	No		
20	19 inch Rack mounting system for air analyzers	No		
21	Dry Gas Meter	Yes		
22	Diesel Exhaust analyzer	Yes		
23	Exhaust CO/HC analyzer with Sampling Probe	Yes		
24	Automated Noise Monitoring System	Yes		
25	Integrating Sound level meter	Yes		
26	Continuous PM <sub>10</sub> & PM <sub>2.5</sub> Monitoring Analyzer TEOM system	Yes		
27	Top loading orifice kit for calibration of HVS	No		
28	Permeation tubes (SO <sub>2</sub> , NO-NO <sub>2</sub> -NO <sub>x</sub> , NH <sub>3</sub> , BTX)	No		

**C. List of Equipment required for processing of Environmental Samples:**

**a) Mandatory Requirements**

1	Accelerated Solvent Extraction (ASE) System	No		
2	Ammonia distillation assembly/TKN Analyzer	Yes		

3	Analytical Balance 4/5 digit & 6 digit (Digital)	Yes	4886	
4	Aquarium for Toxicity bioassay test with complete accessories (*4 Nos)	Yes		
5	Autoclave (*2 Nos)	Yes		
6	Bacteriological Incubators Stainless steel (*2 Nos)	Yes		
7	Bio safety cabinets	Yes		
8	BOD Incubators (2 nos.)	Yes		
9	Centrifuge	Yes		
10	COD Digestion heated Blocks (2) with capacity 16 nos. or more	Yes		
11	Cyanide Distillation Assembly (3)	Yes		
12	Deep Freezer- Capacity 500 litre	Yes		
13	Laboratory Ball Mill Grinder	No		
14	Laboratory Grinder	No		
15	Laminar Flow bench for Microbiological analysis	Yes		
16	Magnetic Stirrer with heating system (*2 Nos)	Yes		
17	Mechanical Shaker	Yes		
18	Membrane Filtration assembly with vacuum pump (2 nos.)	Yes		
19	Microbial culture refrigerator	Yes		
20	Microwave Digester with 16 vessels/ Hot Plate	No		
21	Muffle Furnace (*1 Nos), Range 1200 C	Yes		
22	Phenol distillation assembly (3)	No		
23	Plate counter, Manual/Automatic	No		
24	Digestion Chambers/ Fume hood	Yes		

  
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25	Digital Thermometer & Humidity meter- All lab area	Yes		
26	Dispensers (Various capacities ) up to 5, 10, 25 & 50 ml	Yes		
27	Filtration Assembly with vacuum pump	Yes		
28	Fluoride Distillation Assembly (3)	Yes		
29	Arsenic / Fluoride Glass Distillation assemblies	Yes		
30	Glass Double Distillation Assembly /Water Purification System	Yes		
31	Heating mantles (2 nos.)	Yes		
32	Hot plates (small, Medium and Large ) (*2 nos.)	Yes		
33	Thermo Hygrometer	Yes		
34	Imhoff Cone	No		
35	Top loading Precision Digital Balance (minimum detection 0.001mg/0.01 mg) with anti-vibration facility- 3 nos. i.e 4/5 Digit (2 nos), - 6 Digit (1 no)	Yes		
36	Refrigerators Big Size 300 litres or more, double door- 2 nos.	Yes		
37	Rotary Evaporator (Buchi type) with water recirculating chiller	Yes		
38	Separating funnel shaker	No		
39	Soxhlet Apparatus	Yes		
40	Solid Phase Extraction (SPE) /SPME Extraction system	No		
41	Thermometer (Alcohol)	Yes		
42	Dry & wet bulb Thermometer	Yes		
43	Toxicity characteristic leaching procedure (TCLP) Extractors (Zero head and Bottle)	Yes		

  
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45	Ultra sonic water bath- Capacity 3 litre	Yes		
45	Water Bath with temperature control (*2 Nos)	Yes		
46	Water Bath with temp. for mercury sample digestion- 20 BOD Bottles	Yes		

**D. Analytical Instruments at Environmental Laboratories**

**a) Mandatory Requirements**

1	Atomic Absorption spectrometer (AAS)- Flame, Hydride & Graphite Tube Atomizer (GTA)	Yes		
2	Binocular Stereo Zoom Microscope	No		
3	Bomb Calorimeter	No		
4	BTX Analyzer with BTX calibrator	No		
5	Colony counter	No		
6	Conductivity meter- 2 nos.	Yes		
7	Environment conditioning chamber	No		
8	Digital Burettes- 50 ml*2, 100 ml*2	No		
9	Dissolved Oxygen Meter (Bench model)	No		
10	Flame Photometer	Yes		
11	Flash Point Apparatus	Yes		
12	Gas Chromatograph Mass Spectrometer	No		
13	High Performance Liquid Chromatograph (HPLC)	No		
14	Inductively Coupled Plasma (ICP) Spectrometer-OES	No		
15	Ion Chromatograph Anion & Cations	No		
16	Methane and Non Methane (NMHC) Analyzer	Yes		
17	Microscope – 100x	Yes		
18	Microscope Binocular Research	No		

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19	CO (NDIR based) Analyzer	Yes		
20	Nephelometer (Turbidity Meter)	Yes		
21	pH-Meter with combined electrode (3 point)- 2 nos.	Yes		
22	Specific ion Analyzer with ion selective electrodes	No		
23	Spectrophotometer Visible (Portable)	Yes		
24	TKN Analyzer semi-automatic with aluminum block digester	No		
25	UV-Vis Spectrophotometer	Yes		
26	Moisture Content Analyzer	No		

**b) Optional Requirements**

1	Automatic Titration Assembly	No		
2	Carbon, Hydrogen, Nitrogen and Sulphur (CHNS) Elemental Analyzer	No		
3	EDXRF Analyzer/WDXRF Analyzer	No		
4	Fourier-transform infrared Spectrometer (FTIR)	No		
5	Flocculator ( Jar testing apparatus)	No		
6	Toxic Gas Analyzer	No		
7	Organic Halogen (AOX/TOX) Analyzer	No		
8	TOC Analyzer	No		
9	High Resolution Mass Spectrometer (HRGC-HRMS)	No		
10	Inductively Coupled Plasma Mass (ICP-MS) Spectrometer	No		
11	X Ray Fluorescence (XRF) Spectrometer (Portable)	No		

Specific remarks, if any:

*AK*  
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 M.P. Pollution Control Board, Indore

*Saraj*  
**Dr. Saroj Shrivastav**  
 Laboratory Incharge  
 M.P. Pollution Control Board,  
 Indore (M.P.)

S.NO	Name of Laboratory with Address	Year of PT Participation	PT Sample Provider (Name & Address)	Number of Parameters in Accreditation Scope	Number of Parameters for which Laboratory Participated in PT Exercise	Number of Parameters with Satisfactory Results
1	Regional Lab, M.P. Pollution Control Board, Indore (M.P.) Vijay Nagar	2025	GEIL, Mohali	121	9	9

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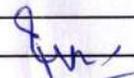
Note: It is requested to please ensure that each sheet is created separately for each laboratory and rename the sheet accordingly .  
For e.g. Central Laboratory, Regional Laboratory etc

**LABORATORY ANALYTICAL FACILITIES**

Name of the Board / Committee: Regional Laboratory Ujjain, Madhya Pradesh Pollution Control Board M.P (RO Ujjain)

**PART I: Facility available for monitoring of environmental parameters:**

S. No.	Parameters	Facilities Available (Yes / No)	If facility is not available, Specify Timeline for addition of this parameter. (in months)	Action Taken for addition of this parameter (Specification finalized / procurement initiated / work awarded / outsourced )
<b>A. Sample Matrix / Group of Water and Wastewater</b>				
<b>(a) Physical Tests</b>				
1	Temperature	Yes		
2	Colour	Yes		
3	pH	Yes		
4	Turbidity	Yes		
5	Conductivity	Yes		
6	Total Solids	Yes		
7	Total Dissolved Solids (TDS)	Yes		
8	Total Suspended Solids (TSS)	Yes		
<b>(b) Inorganic Tests</b>				
<b>(i) General &amp; Non-metallic</b>				
1	Alkalinity	Yes		
2	Chloride	Yes		
3	Cyanide	No	12 Months	Outsourced
4	Dissolved oxygen	Yes		
5	Nitrite nitrogen	Yes		
6	Nitrate nitrogen	Yes		
7	Ammonical nitrogen	Yes		
8	Fluoride	Yes		
9	Hardness (Total)	Yes		
10	Calcium	Yes		

  
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11	Magnesium	Yes		
12	Phosphate	Yes		
13	Sulphate	Yes		
14	Sulphide	Yes		
15	Total Residual chlorine (TRC)	Yes		
<b>(ii) Trace Metals Tests</b>				
1	Aluminium (Al)	No	12 Months	Outsourced
2	Arsenic (As) Total	No	12 Months	Outsourced
3	Barium	No	12 Months	Outsourced
4	Boron	Yes		
5	Chromium (Cr) Hexavalent	Yes		
6	Chromium (Cr) Total	Yes		
7	Cadmium (Cd)	No		
8	Cobalt (Co)	Yes		
9	Copper (Cu)	Yes		
10	Iron (Fe)	Yes		
11	Lead (Pb)	Yes		
12	Manganese (Mn)	Yes		
13	Mercury (Hg)	Yes		
14	Nickel (Ni)	Yes		
15	Potassium (K)	Yes		
16	Sodium (Na)	Yes		
17	Vanadium (V)	Yes		
18	Zinc (Zn)	Yes		
19	Selenium (Se)	Yes		
<b>(c) Organics (General) and Trace Organics Tests</b>				
1	Biological Oxygen Demand (BOD)	Yes		
2	Chemical oxygen demand (COD)	Yes		
3	Oil & Grease	Yes		
4	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	No	12 Months	Outsourced
5	Benzopyrene	No	12 Months	Outsourced
6	<b>Pesticides</b>			
6.a	<b>Organochlorine Pesticides (OCPs) Tests</b>			
i	Aldrin	No	12 Months	procurement initiated
ii	Alpha Endosulphan	No	12 Months	procurement initiated
iii	p,p'-DDT	No	12 Months	procurement initiated
iv	Alpha-HCH	No	12 Months	procurement initiated

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v	Beta HCH	No	4893	12 Months	procurement initiated
vi	Beta Endosulphan	No		12 Months	procurement initiated
vii	Gama-HCH	No		12 Months	procurement initiated
viii	o,p'-DDT	No		12 Months	procurement initiated
ix	p,p'-DDE	No		12 Months	procurement initiated
<b>6.b</b>	<b>Organophosphorus Pesticides (OPPs) Tests</b>				
i	Malathion	No		12 Months	procurement initiated
ii	Methyl parathion	No		12 Months	procurement initiated
iii	Chlorpyriphos	No		12 Months	procurement initiated
iv	Dimethoate	No		12 Months	procurement initiated
v	Dieldrin	No		12 Months	procurement initiated
vi	Ethion	No		12 Months	procurement initiated
<b>(d) Microbiological Tests</b>					
1	Total Coliform	Yes			
2	Faecal Coliform	Yes			
3	E. Coli	Yes			
4	Faecal Streptococci	Yes			
<b>(e) Toxicological Tests</b>					
1	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent)	Yes			
<b>B. Sample Matrix / Group of Solid / Solid Waste</b>					
<b>(a) Soil / Sediment / Compost Tests</b>					
1	Cation Exchange Capacity (CEC)	No			
2	Electrical Conductivity (EC)	Yes			
3	Organic carbon (Chemical Method )	No		12 Months	Outsourced
4	pH	Yes			
5	Soil moisture	Yes			
6	Total nitrogen	Yes			
7	Metals by digestion (As, Cd, Cr, Pb, Ni etc.)	Yes			
<b>(b) Hazardous Waste (Liquid / Slurry / Sludge / Solid / Semi-Solid) Tests</b>					
1	Corrosivity	Yes			
2	Ignitability (Flash Point)	Yes			
3	Loss on Drying at 1050C (% Moisture Content)	Yes			

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4	Loss on Drying at 5500C (% Organic Content)	Yes	4894	
5	pH	Yes		
6	Organic carbon/matter (Chemical Method )	No	12 Months	Outsourced
7	Calorific Value	Yes		
8	Toxicity Characteristics leaching procedure (TCLP) Leachate and Metals in Leachate (As,Cd,Cr, Pb, Ni)	No	12 Months	Outsourced

**C. Sample Matrix / Group of Analytes: Air**

**(a) Ambient Air**

1	Nitrogen dioxide as NO2	Yes		
2	Sulphur dioxide (SO2)	Yes		
3	Particulate matter (PM10)	Yes		
4	Particulate matter (PM2.5)	Yes		
5	Carbon Monoxide	Yes		
6	Ozone	Yes		
7	Benzene	Yes		
8	Ammonia	Yes		
9	Metals in Particulate Matter, Pb	Yes		
10	Metals in Particulate Matter, As	No	12 Months	Outsourced
11	Metals in Particulate Matter, Ni	Yes		
12	Particulate Benzo-a-Pyrene (BaP)	No	12 Months	Outsourced

**(b) Stack Gas / Stationary Source Emission**

1	Particulate Matter	Yes		
2	Sulphur Dioxide	Yes		
3	Carbon Dioxide	Yes		
4	Carbon Monoxide (NDIR based Method)	Yes		
5	Temperature	Yes		
6	Moisture	Yes		
7	Oxygen	Yes		
8	Oxides of Nitrogen	Yes		
9	Halides (HCL/HF)	No	12 Months	procurement initiated

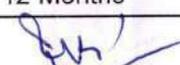
**(c) Noise Level**

1	Ambient Noise level measurement (20 to 140 dB)	Yes		
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2	Source Noise Level Measurement (Industrial process, DG set- 20 to 140dB)	Yes	4895	
<b>(d) Meteorological Monitoring</b>				
1	Ambient Temperature	Yes		
2	Wind direction	Yes		
3	Wind speed	Yes		
4	Relative Humidity	Yes		
5	Mixing Height	Yes		
Specific remarks, if any:				
<b>PART II: Details of Laboratory Infrastructure (Instruments and Equipment)</b>				
<b>S. No.</b>	<b>Name of Instrument / Equipments</b>	<b>Available Yes / No</b>	<b>If the Instrument / Equipment is not available, Specify Timeline for procurement of this instrument (in months)</b>	<b>Action Taken for procurement of this Instrument / Equipment (Specification finalized / procurement initiated / work awarded / outsourced )</b>
<b>A. List of Instruments / Equipment for Sampling of Water, Wastewater and Soil / Hazardous Wastes</b>				
<b>a ) Mandatory Requirements</b>				
1	Portable / Pen type pH meter / pH strip	Yes		
2	Portable Dissolved Oxygen Meter / Field Fixing using chemicals	Yes		
3	Electrical Conductivity meter pen type	yes		
4	Flow meter / Physical flow measuring	Yes		
5	GPS / Mobile with GPS app	No	12 Months	procurement initiated
6	Ice Box (2 nos.) (150 litre & 100 litre capacities)	Yes		
7	Thermometer	Yes		

  
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8	Stainless steel bucket with nylon rope and mug	Yes		
9	Ground water level measuring device	No	12 Months	procurement initiated
10	Scoop / shovel	Yes		
11	Auger / core sampler	No	12 Months	procurement initiated
<b>b) Optional Requirements</b>				
1	Bottom Sampler / Depth sampler	Yes		
2	Chloroscope for residual chlorine	Yes		
3	Vandorn or equivalent water sampler (Automatic sampler when composite sampling to be done)	No	12 Months	procurement initiated
4	Ekman Dredge	No	12 Months	procurement initiated
<b>B. List of Instruments / Equipment for Sampling of Ambient Air and Source Emission monitoring</b>				
<b>a) Mandatory Requirements</b>				
1	Fine dust samplers PM2.5 (*4 Nos)	Yes		
2	Respirable Dust Sampler PM 10 (*4 Nos)	Yes		
3	High Volume Sampler ( SPM ) (4 Nos)	No	12 Months	procurement initiated
4	Handy Sampler with set of glass impingers (*2 Nos)	No	12 Months	procurement initiated
5	Low Volume Sampler (LVS)	No	12 Months	procurement initiated
6	Tedler bags different sizes	No	12 Months	procurement initiated
7	Meteorological tower (All in one telescopic Mast) with sensors comprising wind speed, wind direction, ambient temp., Relative humidity, Solar radiation, rainfall etc.	No	12 Months	procurement initiated
8	Nitrogen Cylinder portable	No	12	procurement initiated
9	Activated Charcoal tubes/ Tenex	No	12	procurement initiated
10	Barometer (Digital)	No	12	procurement initiated

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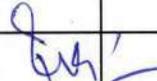
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11	Isokinetic Stack Monitoring Kit complete with Stack monitoring instrument panel with inclined cum vertical manometer, Cold Box, Vacuum pump, Glass assembly impingers	Yes		
12	Modified S type Stainless steel Pitot tube (Standard length) with Assembly	Yes		
13	Monoblock type, rotary design vacuum pump	Yes		
14	Orsat Apparatus	Yes		
15	Source emission monitoring Impingers train set with spare impingers 100 ml & 225 ml capacity	Yes		
16	Stainless steel heated Sampling Probes with thimble holders short and long	Yes		
17	Flue Gas analyzer	Yes		
18	Thermometer/ Thermocouple	Yes		
19	Calibrator for Noise Meters	Yes		
20	Digital Sound level ( Noise ) Metres	Yes		
21	Portable TOC Analyzer for emission monitoring.	No	12	procurement initiated
22	Polyurethane Foam PUF Sampler	No	12	procurement initiated
<b>b) Optional Requirements</b>				
1	Anemometer	No	12	procurement initiated
2	Weather Monitoring system	No	12	procurement initiated
3	Wind speed/wind direction monitor	No	12	procurement initiated
4	Continuous Ambient Air Monitoring System, Fixed	Yes		
5	Continuous PM10 Analyzer	Yes		
6	Continuous Ambient Air Monitoring System, Mobile	NO	12	procurement initiated
7	Continuous PM2.5 analyzer	Yes		

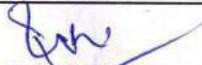
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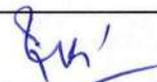
8	Ambient Nitrogen Oxides (NO-NO <sub>2</sub> -NO <sub>x</sub> Analyzer	Yes		
9	Ambient Ozone Analyzer	Yes		
10	Ambient BTEX Analyzer	Yes		
11	Multipoint Gas Calibration system	Yes		
12	Ambient Sulphur Dioxide analyzer	Yes		
13	Ambient Carbon Monoxide & Carbon dioxide analyzer	Yes		
14	Total Hydrocarbon analyzer	Yes		
15	Ambient Ammonia analyzer	Yes		
16	Zero Gas Generator	No	12	procurement initiated
17	Synthetic Air Cylinder	No	12	procurement initiated
18	Calibration Gas Cylinders, SO <sub>2</sub> , NO, CO, NH <sub>3</sub> , benzene and Toluene One each with stainless steel Regulators	Yes		
19	Continuous emission monitoring equipment	No	12 Months	Outsourced
20	19 inch Rack mounting system for air analyzers	Yes		
21	Dry Gas Meter	Yes		
22	Diesel Exhaust analyzer	Yes		
23	Exhaust CO/HC analyzer with Sampling Probe	Yes		
24	Automated Noise Monitoring System	Yes		
25	Integrating Sound level meter	Yes		
26	Continuous PM <sub>10</sub> & PM <sub>2.5</sub> Monitoring Analyzer TEOM system	NO	12	procurement initiated
27	Top loading orifice kit for calibration of HVS	No	12	procurement initiated
28	Permeation tubes (SO <sub>2</sub> , NO-NO <sub>2</sub> -NO <sub>x</sub> , NH <sub>3</sub> , BTX)	No	12	procurement initiated
<b>C. List of Equipment required for processing of Environmental Samples:</b>				
<b>a) Mandatory Requirements</b>				
1	Accelerated Solvent Extraction (ASE) System	No	12	procurement initiated

  
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2	Ammonia distillation assembly/TKN Analyzer	Yes		
3	Analytical Balance 4/5 digit & 6 digit (Digital)	Yes		
4	Aquarium for Toxicity bioassay test with complete accessories (*4 Nos)	Yes		
5	Autoclave (*2 Nos)	Yes		
6	Bacteriological Incubators Stainless steel (*2 Nos)	Yes		
7	Bio safety cabinets	NO	12	procurement initiated
8	BOD Incubators (2 nos.)	Yes		
9	Centrifuge	Yes		
10	COD Digestion heated Blocks (2) with capacity 16 nos. or more	Yes		
11	Cyanide Distillation Assembly (3)	No	12	procurement initiated
12	Deep Freezer- Capacity 500 litre	Yes		
13	Laboratory Ball Mill Grinder	No	12	procurement initiated
14	Laboratory Grinder	No	12	procurement initiated
15	Laminar Flow bench for Microbiological analysis	Yes		
16	Magnetic Stirrer with heating system (*2 Nos)	Yes		
17	Mechanical Shaker	Yes		
18	Membrane Filtration assembly with vacuum pump (2 nos.)	Yes		
19	Microbial culture refrigerator	NO	12	procurement initiated
20	Microwave Digester with 16 vessels/ Hot Plate	No	12	procurement initiated
21	Muffle Furnace (*1 Nos), Range 1200 C	No	12	procurement initiated
22	Phenol distillation assembly (3)	No	12	procurement initiated
23	Plate counter, Manual/Automatic	No	12	procurement initiated
24	Digestion Chambers/ Fume hood	NO	12	procurement initiated
25	Digital Thermometer & Humidity meter- All lab area	Yes		
26	Dispensers (Various capacities ) up to 5, 10, 25 & 50 ml	Yes		

  
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27	Filtration Assembly with vacuum pump	Yes	4900	
28	Fluoride Distillation Assembly (3)	No	12	procurement initiated
29	Arsenic / Fluoride Glass Distillation assemblies	No	12	procurement initiated
30	Glass Double Distillation Assembly /Water Purification System	No	12	procurement initiated
31	Heating mantles (2 nos.)	No	12	procurement initiated
32	Hot plates (small, Medium and Large ) (*2 nos.)	No	12	procurement initiated
33	Thermo Hygrometer	Yes		
34	Imhoff Cone	NO	12	procurement initiated
35	Top loading Precision Digital Balance (minimum detection 0.001mg/0.01 mg) with anti-vibration facility- 3 nos. i.e 4/5 Digit (2 nos), - 6 Digit (1 no)	Yes		
36	Refrigerators Big Size 300 litres or more, double door- 2 nos.	Yes		
37	Rotary Evaporator (Buchi type) with water recirculating chiller	Yes		
38	Separating funnel shaker	No	12	procurement initiated
39	Soxhlet Apparatus	Yes		
40	Solid Phase Extraction (SPE) /SPME Extraction system	No	12	procurement initiated
41	Thermometer (Alcohol)	Yes		
42	Dry & wet bulb Thermometer	Yes		
43	Toxicity characteristic leaching procedure (TCLP) Extractors (Zero head and Bottle)	No	12	procurement initiated
44	Ultra sonic water bath- Capacity 3 litre	No	12	procurement initiated
45	Water Bath with temperature control (*2 Nos)	Yes		

  
**INCHARGE**  
 Regional Laboratory  
 M.P. Pollution Control Board  
 UDAIPUR

46	Water Bath with temp. for mercury sample digestion- 20 BOD Bottles	No	4901	12	procurement initiated
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**D. Analytical Instruments at Environmental Laboratories**

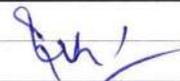
**a) Mandatory Requirements**

1	Atomic Absorption spectrometer (AAS)- Flame, Hydride & Graphite Tube Atomizer (GTA)	Yes			
2	Binocular Stereo Zoom Microscope	Yes			
3	Bomb Calorimeter	Yes			
4	BTX Analyzer with BTX calibrator	No		12	procurement initiated
5	Colony counter	No		12	procurement initiated
6	Conductivity meter- 2 nos.	Yes			
7	Environment conditioning chamber	No			
8	Digital Burettes- 50 ml*2, 100 ml*2	No		12	procurement initiated
9	Dissolved Oxygen Meter (Bench model)	Yes			
10	Flame Photometer	Yes			
11	Flash Point Apparatus	Yes			
12	Gas Chromatograph Mass Spectrometer	Yes			
13	High Performance Liquid Chromatograph (HPLC)	No		12	procurement initiated
14	Inductively Coupled Plasma (ICP) Spectrometer-OES	No			
15	Ion Chromatograph Anion & Cations	No		12	procurement initiated
16	Methane and Non Methane (NMHC) Analyzer	No		12	procurement initiated
17	Microscope – 100x	Yes			
18	Microscope Binocular Research	Yes			
19	CO (NDIR based) Analyzer	No		12	procurement initiated
20	Nephelometer (Turbidity Meter)	Yes			
21	pH-Meter with combined electrode (3 point)- 2 nos.	No		12	procurement initiated

*[Handwritten Signature]*

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Regional Laboratory  
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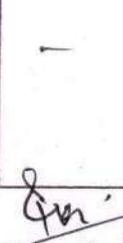
22	Specific ion Analyzer with ion selective electrodes	No	4902	12	procurement initiated
23	Spectrophotometer Visible (Portable)	No		12	procurement initiated
24	TKN Analyzer semi-automatic with aluminum block digester	No		12	procurement initiated
25	UV-Vis Spectrophotometer	Yes			
26	Moisture Content Analyzer	No		12	procurement initiated
<b>b) Optional Requirements</b>					
1	Automatic Titration Assembly	No		12	procurement initiated
2	Carbon, Hydrogen, Nitrogen and Sulphur (CHNS) Elemental Analyzer	No		12	procurement initiated
3	EDXRF Analyzer/WDXRF Analyzer	No		12	procurement initiated
4	Fourier-transform infrared Spectrometer (FTIR)	No		12	procurement initiated
5	Flocculator ( Jar testing apparatus)	No		12	procurement initiated
6	Toxic Gas Analyzer	No		12	procurement initiated
7	Organic Halogen (AOX/TOX) Analyzer	No		12	procurement initiated
8	TOC Analyzer	Yes			
9	High Resolution Mass Spectrometer (HRGC-HRMS)	No		12	procurement initiated
10	Inductively Coupled Plasma Mass (ICP-MS) Spectrometer	No		12	procurement initiated
11	X Ray Fluorescence (XRF) Spectrometer (Portable)	No		12	procurement initiated
 <b>INCHARGE</b> <b>Regional Laboratory</b> <b>M.P.Pollution Control Board</b> <b>UJAIN</b>					
<b>Specific remarks, if any:</b>					

4903  
REGIONAL LABORATORY (M.P. P.C.B. UJJAIN)

PART V : DETAILS OF LABORATORIES PARTICIPATED ON PROFICIENCY TESTING (PT) PERFORMANCE  
(Information to be given for last 3 Years)

S.No	Name of Laboratory with Address	Year of PT Participation	PT Sample Provider (Name and Address)	Number of Parameters in Accreditation	Number of Parameter for which Laboratory Participated in PT exercise	Number of Parameter with Satisfactory Result
1	REGIONAL LABORATORY, M.P. POLLUTION CONTROL BOARD 17, BHARATPURI, UJJAIN.	2022	-	-	-	-
2	REGIONAL LABORATORY, M.P. POLLUTION CONTROL BOARD 17, BHARATPURI, UJJAIN.	2023	-	-	-	-
3	REGIONAL LABORATORY, M.P. POLLUTION CONTROL BOARD 17, BHARATPURI, UJJAIN.	15-05-24	Green Economy Initatives Private Limited 215, Silver City (Main) Ambala Chandigarh Expressway (NH-22) Zirakour District Sas Nagar Mohali	9	9	8
		15-07-24	Green Economy Initatives Private Limited 215, Silver City (Main) Ambala Chandigarh Expressway (NH-22) Zirakour District Sas Nagar Mohali	12	11	10
4	do	yet not participated year 2025	N/A.	-	-	-

Date - 28/11/2025

  
 Lab In Charge  
 Regional Laboratory  
 M.P. Pollution Control Board  
 UJJAIN

## LABORATORY ANALYTICAL FACILITIES

Name of the Board / Committee: Regional Laboratory Jabalpur, Madhya Pradesh Pollution Control Board MLP (RO Jabalpur)

## PART II Facility available for monitoring of environmental parameters:

S. No.	Parameters	Facilities Available (Yes / No)	If facility is not available, Specify Timeline for addition of this parameter. (in months)	Action Taken for addition of this parameter (Specification finalized / procurement initiated / work awarded / outsourced)
<b>A. Sample Matrix / Group of Water and Wastewater</b>				
<b>(a) Physical Tests</b>				
1	Temperature	Yes		
2	Colour	Yes		
3	pH	Yes		
4	Turbidity	Yes		
5	Conductivity	Yes		
6	Total Solids	Yes		
7	Total Dissolved Solids (TDS)	Yes		
8	Total Suspended Solids (TSS)	Yes		
<b>(b) Inorganic Tests</b>				
<b>(i) General &amp; Non-metallic</b>				
1	Alkalinity	Yes		
2	Chloride	Yes		
3	Cyanide	No		
4	Dissolved oxygen	Yes		
5	Nitrite nitrogen	Yes		
6	Nitrate nitrogen	Yes		
7	Ammonical nitrogen	Yes		
8	Fluoride	Yes		
9	Hardness (Total)	Yes		
10	Calcium	Yes		
11	Magnesium	Yes		
12	Phosphate	Yes		
13	Sulphate	Yes		
14	Sulphide	No		
15	Total Residual chlorine (TRC)	Yes		
<b>(ii) Trace Metals Tests</b>				
1	Aluminium (Al)	No		
2	Arsenic (As) Total	Yes		
3	Barium	No		
4	Boron	Yes		
5	Chromium (Cr) Hexavalent	Yes		
6	Chromium (Cr) Total	Yes		
7	Cadmium (Cd)	No		
8	Cobalt (Co)	No		
9	Copper (Cu)	Yes		
10	Iron (Fe)	Yes		
11	Lead (Pb)	Yes		
12	Manganese (Mn)	Yes		
13	Mercury (Hg)	Yes		
14	Nickel (Ni)	Yes		
15	Potassium (K)	Yes		
16	Sodium (Na)	Yes		
17	Vanadium (V)	No		
18	Zinc (Zn)	Yes		
19	Selenium (Se)	No		
<b>(c) Organics (General) and Trace Organics Tests</b>				
1	Biological Oxygen Demand (BOD)	Yes		
2	Chemical oxygen demand (COD)	Yes		
3	Oil & Grease	Yes		
4	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	No		
5	Benzopyrene	No		
6	Pesticides			
<b>6.a Organochlorine Pesticides (OCPs) Tests</b>				
1	Aldrin	No		

Samples sent to Cer  
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Bhopal

ii	Alpha Endosulphan	No	
iii	p,p'-DDT	No	
iv	Alpha-HCH	No	
v	Beta HCH	No	
vi	Beta Endosulphan	No	
vii	Gamma-HCH	No	
viii	o,p'-DDT	No	
ix	p,p'-DDE	No	
<b>6.b Organophosphorus Pesticides (OPs) Tests</b>			
i	Malathion	No	
ii	Methyl parathion	No	
iii	Chlorpyrifos	No	
iv	Dimethoate	No	
v	Dieldrin	No	
vi	Ethion	No	
<b>(d) Microbiological Tests</b>			
1	Total Coliform	Yes	
2	Faecal Coliform	Yes	
3	E. Coli	Yes	
4	Faecal Streptococci	Yes	
<b>(e) Toxicological Tests</b>			
1	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent)	Yes	
<b>B. Sample Matrix / Group of Solid / Solid Waste</b>			
<b>(a) Soil / Sediment / Compost Tests</b>			
1	Cation Exchange Capacity (CEC)	No	
2	Electrical Conductivity (EC)	No	
3	Organic carbon (Chemical Method)	No	
4	pH	No	
5	Soil moisture	No	
6	Total nitrogen	No	
7	Metals by digestion (As, Cd, Cr, Pb, Ni etc.)	No	
<b>(b) Hazardous Waste (Liquid / Slurry / Sludge / Solid / Semi-Solid) Tests</b>			
1	Corrosivity	No	
2	Ignitability (Flash Point)	No	
3	Loss on Drying at 1050C (% Moisture Content)	No	
4	Loss on Drying at 5500C (% Organic Content)	No	
5	pH	No	
6	Organic carbon/matter (Chemical Method)	No	
7	Calorific Value	No	
8	Toxicity Characteristics leaching procedure (TCLP) Leachate and Metals in Leachate (As, Cd, Cr, Pb, Ni)	No	
<b>C. Sample Matrix / Group of Analytes: Air</b>			
<b>(a) Ambient Air</b>			
1	Nitrogen dioxide as NO2	Yes	
2	Sulphur dioxide (SO2)	Yes	
3	Particulate matter (PM10)	Yes	
4	Particulate matter (PM2.5)	Yes	
5	Carbon Monoxide	Yes	
6	Ozone	Yes	
7	Benzene	No	
8	Ammonia	Yes	
9	Metals in Particulate Matter, Pb	Yes	
10	Metals in Particulate Matter, As	Yes	
11	Metals in Particulate Matter, Ni	Yes	
12	Particulate Benzo-a-Pyrene (BaP)	Yes	
<b>(b) Stack Gas / Stationary Source Emission</b>			
1	Particulate Matter	Yes	
2	Sulphur Dioxide	No	
3	Carbon Dioxide	No	
4	Carbon Monoxide (NDIR based Method)	No	
5	Temperature	Yes	
6	Moisture	No	
7	Oxygen	No	

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8	Oxides of Nitrogen	No		
9	Halides (HCL/HF)	No		
<b>(c) Noise Level</b>				
1	Ambient Noise level measurement (20 to 140 dB)	Yes		
2	Source Noise Level Measurement (Industrial process, DG set- 20 to 140dB)	Yes		
<b>(d) Meteorological Monitoring</b>				
1	Ambient Temperature	Yes		
2	Wind direction	No		
3	Wind speed	No		
4	Relative Humidity	Yes		
5	Mixing Height	No		

Specific remarks, if any:


**PART II: Details of Laboratory Infrastructure (Instruments and Equipment)**

S. No.	Name of Instrument / Equipments	Available Yes / No	If the Instrument / Equipment is not available, Specify Timeline for procurement of this Instrument (in months)	Action Taken for procurement of this Instrument / Equipment (Specification finalized / procurement initiated / work awarded / outsourced )
<b>A. List of Instruments / Equipment for Sampling of Water, Wastewater and Soil / Hazardous Wastes</b>				
<b>a) Mandatory Requirements</b>				
1	Portable / Pen type pH meter / pH strip	Yes		
2	Portable Dissolved Oxygen Meter / Field Fixing using chemicals	No		
3	Electrical Conductivity meter pen type	Yes		
4	Flow meter / Physical flow measuring	No		
5	GPS / Mobile with GPS app	Yes		
6	Ice Box (2 nos.) (150 litre & 100 litre capacities)	Yes		
7	Thermometer	Yes		
8	Stainless steel bucket with nylon rope and mug	Yes		
9	Ground water level measuring device	No		
10	Scoop / shovel	Yes		
11	Auger / core sampler	No		
<b>b) Optional Requirements</b>				
1	Bottom Sampler / Depth sampler	No		
2	Chloroscope for residual chlorine	No		
3	Vancom or equivalent water sampler (Automatic sampler when composite sampling to be done)	No		
4	Ekman Dredge	No		
<b>B. List of Instruments / Equipment for Sampling of Ambient Air and Source Emission monitoring</b>				
<b>a) Mandatory Requirements</b>				
1	Fine dust samplers PM2.5 (*4 Nos)	Yes		
2	Respirable Dust Sampler PM 10 (* 4 Nos)	Yes		
3	High Volume Sampler (SPM) (4 Nos)	Yes		
4	Randy Sampler with set of glass impingers (*2 Nos)	No		
5	Low Volume Sampler (LVS)	No		
6	Tedler bags different sizes	No		
7	Meteorological tower (All in one telescopic Mast) with sensors comprising wind speed, wind direction, ambient temp, Relative humidity, Solar radiation, rain fall etc.	No		
8	Nitrogen Cylinder portable	No		
9	Activated Charcoal tubes/ Tenox	No		
10	Barometer (Digital)	No		
11	Isokinetic Stack Monitoring Kit complete with Stack monitoring instrument panel with included cum vertical manometer, Cold Box, Vacuum pump, Glass assembly Impingers	Yes		

12	Modified S type Stainless steel Pitot tube (Standard length) with Assembly	Yes		
13	Microblock type, rotary design vacuum pump	Yes		
14	Orsat Apparatus	Yes		
15	Source emission monitoring Impingers train set with spare impingers 100 ml & 225 ml capacity	Yes		
16	Stainless steel heated Sampling Probes with thimble holders short and long	Yes		
17	Flow Gas analyzer	Yes		
18	Thermometer/ Thermocouple	Yes		
19	Calibrator for Noise Meters	Yes		
20	Digital Sound level ( Noise ) Meters	Yes		
21	Portable TOC Analyzer for emission monitoring	No		
22	Polyurethane Foam PUF Sampler	No		
<b>B) Optional Requirements</b>				
1	Anemometer	No		
2	Weather Monitoring system	No		
3	Wind speed/wind direction monitor	No		
4	Continuous Ambient Air Monitoring System, Fixed	Yes		
5	Continuous PM10 Analyzer	No		
6	Continuous Ambient Air Monitoring System, Mobile	No		
7	Continuous PM2.5 analyzer	No		
8	Ambient Nitrogen Oxides (NO-NO2-NOx) Analyzer	No		
9	Ambient Ozone Analyzer	No		
10	Ambient BTEX Analyzer	No		
11	Multipoint Gas Calibration system	No		
12	Ambient Sulphur Dioxide analyzer	No		
13	Ambient Carbon Monoxide & Carbon dioxide analyzer	No		
14	Total Hydrocarbon analyzer	No		
15	Ambient Ammonia analyzer	No		
16	Zero Gas Generator	No		
17	Synthetic Air Cylinder	No		
18	Calibration Gas Cylinders, SO2, NO, CO, N113, crezene and Toluene One each with stainless steel Regulators	No		
19	Continuous emission monitoring equipment	No		
20	19 inch Rack mounting system for air analyzers	No		
21	Dry Gas Meter	No		
22	Diesel Exhaust analyzer	Yes		
23	Exhaust CO/HC analyzer with Sampling Probe	Yes		
24	Automated Noise Monitoring System	Yes		
25	Integrating Sound level meter	No		
26	Continuous PM10 & PM2.5 Monitoring Analyzer TEOM system	No		
27	Top loading orifice kit for calibration of N113	Yes		
28	Permeation tubes (SO2, NO-NO2-NOx, N113, BTEX)	No		
<b>C. List of Equipment required for processing of Environmental Samples:</b>				
<b>a) Mandatory Requirements</b>				
1	Accelerated Solvent Extraction (ASE) System	No		
2	Ammonia distillation assembly/TKN Analyzer	Yes		
3	Analytical Balance 4/5 digit & 6 digit (Digital)	Yes		
4	Aquarium for toxicity bioassay test with complete accessories (*4 Nos)	Yes		
5	Autoclave (*2 Nos)	Yes		
6	Bacteriological Incubators Stainless steel (*2 Nos)	Yes		
7	Bio safety cabinets	No		
8	BOD Incubators (2 nos.)	Yes		
9	Centrifuge	No		

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10	COD Digestion heated Blocks (2) with capacity 16 nos. or more	Yes		
11	Cyanide Distillation Assembly (3)	No		
12	Deep Freezer- Capacity 500 litre	Yes		
13	Laboratory Ball Mill Grinder	No		
14	Laboratory Grinder	No		
15	Laminar Flow bench for Microbiological analysis	Yes		
16	Magnetic Stirrer with heating system (*2 Nos)	Yes		
17	Mechanical Shaker	No		
18	Membrane Filtration assembly with vacuum pump (2 nos.)	Yes		
19	Microbial culture refrigerator	No		
20	Microwave Digester with 16 vessels/ Hot Plate	No		
21	Muffle Furnace (*1 Nos), Range 1200 C	Yes		
22	Phenol distillation assembly (3)	No		
23	Plate counter, Manual/Automatic	No		
24	Digestion Chambers/ Fume hood	Yes		
25	Digital Thermometer & Humidity meter- All lab area	Yes		
26	Dispensers (Various capacities ) up to 5, 10, 25 & 50 ml	No		
27	Filtration Assembly with vacuum pump	Yes		
28	Fluoride Distillation Assembly (3)	No		
29	Arsenic / Fluoride Glass Distillation assemblies	No		
30	Glass Double Distillation Assembly /Water Purification System	Yes		
31	Heating mantles (2 nos.)	Yes		
32	Hot plates (small, Medium and Large ) (*2 nos)	Yes		
33	Thermo Hygrometer	Yes		
34	Imhoff Cone	Yes		
35	Top loading Precision Digital Balance (minimum detection 0.001 mg/0.01 mg) with anti-vibration facility- 3 nos. i.e. 4/5 Digit (2 nos), - 6 Digit (1 no)	No		
36	Refrigerators Big Size 300 litres or more, double door-2 nos.	Yes		
37	Rotary Evaporator (Buchi type) with water recirculating chiller	Yes		
38	Separating funnel shaker	Yes		
39	Sorhlei Apparatus	Yes		
40	Solid Phase Extraction (SPE) /SPMB Extraction system	No		
41	Thermometer (Alcohol)	No		
42	Dry & wet bulb Thermometer	No		
43	Toxicity characteristic leaching procedure (TCLP) Extractors (Zero head and Bottle)	No		
44	Ultra sonic water bath- Capacity 3 litre	Yes		
45	Water Bath with temperature control (*2 Nos)	Yes		
46	Water Bath with temp. for mercury sample digestion- 20 BOD Bottles	No		

#### D. Analytical Instruments at Environmental Laboratories

##### a) Mandatory Requirements

1	Atomic Absorption spectrometer (AAS)- Flame, Hydride & Graphite Tube Atomizer (GTA)	Yes		
2	Binocular Stereo Zoom Microscope	No		
3	Bomb Calorimeter	No		
4	BTX Analyzer with BTX calibrator	No		
5	Colony counter	No		
6	Conductivity meter 2 nos.	Yes		
7	Environmental conditioning chamber	No		
8	Digital Burette- 50 ml*2/ 100 ml*2	No		
9	Dissolved Oxygen Meter (Drench model)	No		
10	Flame Photometer	Yes		
11	Flash Point Apparatus	No		

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12	Gas Chromatograph Mass Spectrometer	No		
13	High Performance Liquid Chromatograph (HPLC)	No		
14	Inductively Coupled Plasma (ICP) Spectrometer-OES	No		
15	Ion Chromatograph Anion & Cations	No		
16	Methane and Non Methane (NMHC) Analyzer	No		
17	Microscope - 100x	No		
18	Microscope Binocular Research	No		
19	CO (NDIR based) Analyzer	No		
20	Nephelometer (Turbidity Meter)	Yes		
21	pH-Meter with combined electrode (3 point)- 2 nos.	Yes		
22	Specific Ion Analyzer with ion selective electrodes	No		
23	Spectrophotometer Visible (Portable)	No		
24	TKN Analyzer semi-automatic with aluminum block digester	No		
25	UV-Vis Spectrophotometer	Yes		
26	Moisture Content Analyzer	No		
b) Optional Requirements				
1	Automatic Titration Assembly	No		
2	Carbon, Hydrogen, Nitrogen and Sulphur (CHNS) Elemental Analyzer	No		
3	EDXRF Analyzer/WDXRF Analyzer	No		
4	Fourier-transform infrared Spectrometer (FTIR)	No		
5	Flocculator ( Jar testing apparatus)	No		
6	Toxic Gas Analyzer	No		
7	Organic Halogen (AOX/TOX) Analyzer	No		
8	TOC Analyzer	No		
9	High Resolution Mass Spectrometer (HRGC-HRMS)	No		
10	Inductively Coupled Plasma Mass (ICP-MS) Spectrometer	No		
11	X Ray Fluorescence (XRF) Spectrometer (Portable)	No		

Specific remarks, if any:

*Anil*  
 Scientist & Lab Incharge  
 Regional Office  
 M.P. Pollution Control Board  
 Jabalpur.

Note: It is requested to please ensure that each sheet is created separately for each laboratory and rename the sheet accordingly. For e.g. Central Laboratory, Regional Laboratory etc

## LABORATORY ANALYTICAL FACILITIES

Name of the Board / Committee: Regional Laboratory Satna, Madhya Pradesh Pollution Control Board M.P (RO Satna)

S. No.	Parameters	Facilities Available (Yes / No)	If facility is not available, Specify Timeline for addition of this parameter. (In months)	Action Taken for addition of this parameter (Specification finalized / procurement initiated / work awarded / outsourced)
<b>A. Sample Matrix / Group of Water and Wastewater</b>				
<b>(a) Physical Tests</b>				
1	Temperature	Yes		
2	Colour	Yes		
3	pH	Yes		
4	Turbidity	Yes		
5	Conductivity	Yes		
6	Total Solids	Yes		
7	Total Dissolved Solids (TDS)	Yes		
8	Total Suspended Solids (TSS)	Yes		
<b>(b) Inorganic Tests</b>				
<b>(i) General &amp; Non-metallic</b>				
1	Alkalinity	Yes		
2	Chloride	Yes		
3	Cyanide	No		
4	Dissolved oxygen	Yes		
5	Nitrite nitrogen	Yes		
6	Nitrate nitrogen	Yes		
7	Ammonical nitrogen	No		
8	Fluoride	Yes		
9	Hardness (Total)	Yes		
10	Calcium	Yes		
11	Magnesium	Yes		
12	Phosphate	Yes		
13	Sulphate	Yes		
14	Sulphide	No		
15	Total Residual chlorine (TRC)	No		
<b>(ii) Trace Metals Tests</b>				
1	Aluminium (Al)	No		
2	Arsenic (As) Total	No		
3	Barium	No		
4	Boron	No		
5	Chromium (Cr) Hexavalent	No		
6	Chromium (Cr) Total	No		
7	Cadmium (Cd)	No		
8	Cobalt (Co)	No		
9	Copper (Cu)	No		

Samples are sent to Central Laboratory Bhopal / Regional Office M.P. Pollution Control Board Jabalpur

Scientist  
M.P. Pollution Control Board  
Regional Office  
Jabalpur

La's Incharge  
M.P. Pollution Control Board  
Satna (M.P.)

10	Iron (Fe)	No		
11	Lead (Pb)	No		
12	Manganese (Mn)	No		
13	Mercury (Hg)	No		
14	Nickel (Ni)	No		
15	Potassium (K)	Yes		
16	Sodium (Na)	Yes		
17	Vanadium (V)	No		
18	Zinc (Zn)	No		
19	Selenium (Se)	No		
<b>(c) Organics (General) and Trace Organics Tests</b>				
1	Biological Oxygen Demand (BOD)	Yes		
2	Chemical oxygen demand (COD)	Yes		
3	Oil & Grease	Yes		
4	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	No		
5	Benzopyrene	No		
6	<b>Pesticides</b>			
<b>6.a Organochlorine Pesticides (OCPs) Tests</b>				
i	Aldrin	No		
ii	Alpha Endosulphan	No		
iii	p,p'-DDT	No		
iv	Alpha-HCH	No		
v	Beta HCH	No		
vi	Beta Endosulphan	No		
vii	Gamma-HCH	No		
viii	o,p'-DDT	No		
ix	p,p'-DDE	No		
<b>6.b Organophosphorus Pesticides (OPPs) Tests</b>				
i	Malathion	No		
ii	Methyl parathion	No		
iii	Chlorpyrifos	No		
iv	Dimethoate	No		
v	Dieldrin	No		
vi	Ethion	No		
<b>(d) Microbiological Tests</b>				
1	Total Coliform	Yes		
2	Faecal Coliform	Yes		
3	E. Coli	Yes		
4	Faecal Streptococci	Yes		
<b>(e) Toxicological Tests</b>				
1	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent)	Yes		
<b>B. Sample Matrix / Group of Solid / Solid Waste</b>				
<b>(a) Soil / Sediment / Compost Tests</b>				
1	Cation Exchange Capacity (CEC)	No		
2	Electrical Conductivity (EC)	No		
3	Organic carbon (Chemical Method)	No		
4	pH	No		
5	Soil moisture	No		
6	Total nitrogen	No		
7	Metals by digestion (As, Cd, Cr, Pb, Ni etc.)	No		
<b>(b) Hazardous Waste (Liquid / Slurry / Sludge / Solid / Semi-Solid) Tests</b>				
1	Corrosivity	No		
2	Ignitability (Flash Point)	No		

Samples are sent to Central Laboratory Bhopal

Scientist  
M.P. Pollution Control Board  
Satna (M.P.)

Lab Incharge  
M.P. Pollution Control Board  
Satna (M.P.)



S. No.	Name of Instrument / Equipments	Available Yes / No	If the Instrument / Equipment is not available, Specify Timeline for procurement of this Instrument (In months)	Action Taken for procurement of this Instrument / Equipment (Specification finalized / procurement initiated / work awarded / outsourced )
<b>A. List of Instruments / Equipment for Sampling of Water, Wastewater and Soil / Hazardous Wastes</b>				
<b>a) Mandatory Requirements</b>				
1	Portable / Pen type pH meter / pH strip	Yes		
2	Portable Dissolved Oxygen Meter / Field Fixing using chemicals	No		
3	Electrical Conductivity meter pen type	No		
4	Flow meter / Physical flow measuring	No		
5	GPS / Mobile with GPS app	Yes		
6	Ice Box (2 nos.) (150 litre & 100 litre capacities)	Yes		
7	Thermometer	Yes		
8	Stainless steel bucket with nylon rope and mug	Yes		
9	Ground water level measuring device	No		
10	Scoop / shovel	No		
11	Auger / core sampler	No		
<b>b) Optional Requirements</b>				
1	Bottom Sampler / Depth sampler	No		
2	Chloroscope for residual chlorine	No		
3	Vandorn or equivalent water sampler (Automatic sampler when composite sampling to be done)	No		
4	Ekman Dredge	No		
<b>B. List of Instruments / Equipment for Sampling of Ambient Air and Source Emission monitoring</b>				
<b>a) Mandatory Requirements</b>				
1	Fine dust samplers PM2.5 (*4 Nos)	Yes		
2	Respirable Dust Sampler PM 10 (*4 Nos)	Yes		
3	High Volume Sampler (SPM) (4 Nos)	No		
4	Handy Sampler with set of glass impingers (*2 Nos)	No		
5	Low Volume Sampler (LVS)	No		
6	Tedler bags different sizes	No		
7	Meteorological tower (All in one telescopic Mast) with sensors comprising wind speed, wind direction, ambient temp., Relative humidity, Solar radiation, rainfall etc.	No		
8	Nitrogen Cylinder portable	No		
9	Activated Charcoal tubes/ Tenex	No		
10	Barometer (Digital)	No		
11	Isokinetic Stack Monitoring Kit complete with Stack monitoring instrument panel with inclined cum vertical manometer, Cold Box, Vacuum pump, Glass assembly impingers	Yes		



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12	Modified S type Stainless steel Pitot tube (Standard length) with Assembly	Yes		
13	Monoblock type, rotary design vacuum pump	No		
14	Orsat Apparatus	No		
15	Source emission monitoring Impingers train set with spare impingers 100 ml & 225 ml capacity	Yes		
16	Stainless steel heated Sampling Probes with thimble holders short and long	Yes		
17	Flue Gas analyzer	Yes		
18	Thermometer/ Thermocouple	Yes		
19	Calibrator for Noise Meters	Yes		
20	Digital Sound level ( Noise ) Metres	Yes		
21	Portable TOC Analyzer for emission monitoring.	No		
22	Polyurethane Foam PUF Sampler	No		
<b>b) Optional Requirements</b>				
1	Anemometer	No		
2	Weather Monitoring system	Yes		Not Working
3	Wind speed/wind direction monitor	No		
4	Continuous Ambient Air Monitoring System, Fixed	No		
5	Continuous PM10 Analyzer	No		
6	Continuous Ambient Air Monitoring System, Mobile	No		
7	Continuous PM2.5 analyzer	No		
8	Ambient Nitrogen Oxides (NO-NO2-NOx Analyzer	No		
9	Ambient Ozone Analyzer	No		
10	Ambient BTEX Analyzer	No		
11	Multipoint Gas Calibration system	No		
12	Ambient Sulphur Dioxide analyzer	No		
13	Ambient Carbon Monoxide & Carbon dioxide analyzer	No		
14	Total Hydrocarbon analyzer	No		
15	Ambient Ammonia analyzer	No		
16	Zero Gas Generator	No		
17	Synthetic Air Cylinder	No		
18	Calibration Gas Cylinders, SO2, NO, CO, NH3, Benzene and Toluene One each with stainless steel Regulators	No		
19	Continuous emission monitoring equipment	No		
20	19 inch Rack mounting system for air analyzers	No		
21	Dry Gas Meter	No		
22	Diesel Exhaust analyzer	No		
23	Exhaust CO/HC analyzer with Sampling Probe	No		
24	Automated Noise Monitoring System	No		
25	Integrating Sound level meter	No		
26	Continuous PM10 & PM2.5 Monitoring Analyzer TEOM system	No		


  
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27	Top loading orifice kit for calibration of HVS	No		
28	Permeation tubes (SO <sub>2</sub> , NO-NO <sub>2</sub> -NO <sub>x</sub> , NH <sub>3</sub> , BTX)	No		
<b>C. List of Equipment required for processing of Environmental Samples:</b>				
<b>a) Mandatory Requirements</b>				
1	Accelerated Solvent Extraction (ASE) System	No		
2	Ammonia distillation assembly/TKN Analyzer	No		
3	Analytical Balance 4/5 digit & 6 digit (Digital)	Yes		
4	Aquarium for Toxicity bioassay test with complete accessories (*4 Nos)	Yes		
5	Autoclave (*2 Nos)	Yes		
6	Bacteriological Incubators Stainless steel (*2 Nos)	Yes		
7	Bio safety cabinets	No		
8	BOD Incubators (2 nos.)	Yes		
9	Centrifuge	No		
10	COD Digestion heated Blocks (2) with capacity 16 nos. or more	Yes		
11	Cyanide Distillation Assembly (3)	No		
12	Deep Freezer- Capacity 500 litre	Yes		
13	Laboratory Ball Mill Grinder	No		
14	Laboratory Grinder	No		
15	Laminar Flow bench for Microbiological analysis	Yes		
16	Magnetic Stirrer with heating system (*2 Nos)	No		
17	Mechanical Shaker	No		
18	Membrane Filtration assembly with vacuum pump (2 nos.)	No		
19	Microbial culture refrigerator	No		
20	Microwave Digester with 16 vessels/ Hot Plate	No		
21	Muffle Furnace (*1 Nos), Range 1200 C	No		
22	Phenol distillation assembly (3)	No		
23	Plate counter, Manual/Automatic	No		
24	Digestion Chambers/ Fume hood	No		
25	Digital Thermometer & Humidity meter- All lab area	Yes		
26	Dispensers (Various capacities ) up to 5, 10, 25 & 50 ml	Yes		
27	Filtration Assembly with vacuum pump	Yes		
28	Fluoride Distillation Assembly (3)	No		
29	Arsenic / Fluoride Glass Distillation assemblies	No		
30	Glass Double Distillation Assembly /Water Purification System	Yes		
31	Heating mantles (2 nos.)	Yes		
32	Hot plates (small, Medium and Large ) (*2 nos.)	Yes		
33	Thermo Hygrometer	Yes		
34	Imhoff Cone	No		

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35	Top loading Precision Digital Balance (minimum detection 0.001mg/0.01 mg) with anti-vibration facility- 3 nos. i.e 4/5 Digit (2 nos), - 6 Digit (1 no)	No		
36	Refrigerators Big Size 300 litres or more, double door- 2 nos.	Yes		
37	Rotary Evaporator (Buchi type) with water recirculating chiller	No		
38	Separating funnel shaker	No		
39	Soxhlet Apparatus	Yes		
40	Solid Phase Extraction (SPE) /SPME Extraction system	No		
41	Thermometer (Alcohol)	Yes		
42	Dry & wet bulb Thermometer	Yes		
43	Toxicity characteristic leaching procedure (TCLP) Extractors (Zero head and Bottle)	No		
44	Ultra sonic water bath- Capacity 3 litre	Yes		
45	Water Bath with temperature control (*2 Nos)	Yes		
46	Water Bath with temp. for mercury sample digestion- 20 BOD Bottles	No		

#### D. Analytical Instruments at Environmental Laboratories

##### a) Mandatory Requirements

1	Atomic Absorption spectrometer (AAS)- Flame, Hydride & Graphite Tube Atomizer (GTA)	No		
2	Binocular Stereo Zoom Microscope	No		
3	Bomb Calorimeter	No		
4	BTX Analyzer with BTX calibrator	No		
5	Colony counter	Yes		
6	Conductivity meter- 2 nos.	Yes		
7	Environment conditioning chamber	No		
8	Digital Burettes- 50 ml*2, 100 ml*2	Yes		
9	Dissolved Oxygen Meter (Bench model)	NO		
10	Flame Photometer	Yes		
11	Flash Point Apparatus	No		
12	Gas Chromatograph Mass Spectrometer	No		
13	High Performance Liquid Chromatograph (HPLC)	No		
14	Inductively Coupled Plasma (ICP) Spectrometer-OES	No		
15	Ion Chromatograph Anion & Cations	No		
16	Methane and Non Methane (NMHC) Analyzer	No		
17	Microscope - 100x	No		
18	Microscope Binocular Research	No		
19	CO (NDIR based) Analyzer	Yes		
20	Nephelometer (Turbidity Meter)	Yes		
21	pH-Meter with combined electrode (3 point)- 2 nos.	Yes		
22	Specific ion Analyzer with ion selective electrodes	No		

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23	Spectrophotometer Visible (Portable)	No		
24	TKN Analyzer semi-automatic with aluminum block digester	No		
25	UV-Vis Spectrophotometer	Yes		
26	Moisture Content Analyzer	No		
<b>b) Optional Requirements</b>				
1	Automatic Titration Assembly	Yes		
2	Carbon, Hydrogen, Nitrogen and Sulphur (CHNS) Elemental Analyzer	No		
3	EDXRF Analyzer/WDXRF Analyzer	No		
4	Fourier-transform infrared Spectrometer (FTIR)	No		
5	Flocculator ( Jar testing apparatus)	No		
6	Toxic Gas Analyzer	No		
7	Organic Halogen (AOX/TOX) Analyzer	No		
8	TOC Analyzer	No		
9	High Resolution Mass Spectrometer (HRGC-HRMS)	No		
10	Inductively Coupled Plasma Mass (ICP-MS) Spectrometer	No		
11	X Ray Fluorescence (XRF) Spectrometer (Portable)	No		
<b>Specific remarks, if any:</b>				
There is a request to post 02 chemists in Regional Laboratory, Satna.				
It is also requested to grant permission to appoint one computer operator and one sweeper through service provider.				
			 11/11/25 Lab Incharge (M.P.P.C.B., Satna)	

  
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Note: It is requested to please ensure that each sheet is created separately for each laboratory and rename the sheet accordingly . For e.g. Central Laboratory, Regional Laboratory etc

**LABORATORY ANALYTICAL FACILITIES**

Name of the Board / Committee: Regional Laboratory Sagar, Madhya Pradesh Pollution Control Board M.P (RO Sagar)

**PART I: Facility available for monitoring of environmental parameters:**

S. No.	Parameters	Facilities Available (Yes / No)	If facility is not available, Specify Timeline for addition of this parameter. (in months)	Action Taken for addition of this parameter (Specification finalized / procurement initiated / work awarded / outsourced )
<b>A. Sample Matrix / Group of Water and Wastewater</b>				
<b>(a) Physical Tests</b>				
1	Temperature	Yes		
2	Colour	No		
3	pH	Yes		
4	Turbidity	Yes		
5	Conductivity	Yes		
6	Total Solids	Yes		
7	Total Dissolved Solids (TDS)	Yes		
8	Total Suspended Solids (TSS)	Yes		
<b>(b) Inorganic Tests</b>				
<b>(i) General &amp; Non-metallic</b>				
1	Alkalinity	Yes		
2	Chloride	Yes		
3	Cyanide	No		
4	Dissolved oxygen	Yes		
5	Nitrite nitrogen	Yes		
6	Nitrate nitrogen	Yes		
7	Ammonical nitrogen	Yes		
8	Fluoride	Yes		
9	Hardness (Total)	Yes		
10	Calcium	Yes		
11	Magnesium	Yes		
12	Phosphate	Yes		
13	Sulphate	Yes		
14	Sulphide	No		

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15	Total Residual chlorine (TRC)	Yes		
<b>(ii) Trace Metals Tests</b>				
1	Aluminium (Al)	No		Cntral Lab MPPCB Bhopal
2	Arsenic (As) Total	No		Cntral Lab MPPCB Bhopal
3	Barium	No		Cntral Lab MPPCB Bhopal
4	Boron	Yes		
5	Chromium (Cr) Hexavalent	No		Cntral Lab MPPCB Bhopal
6	Chromium (Cr) Total	No		Cntral Lab MPPCB Bhopal
7	Cadmium (Cd)	No		Cntral Lab MPPCB Bhopal
8	Cobalt (Co)	No		Cntral Lab MPPCB Bhopal
9	Copper (Cu)	No		
10	Iron (Fe)	Yes		Cntral Lab MPPCB Bhopal
11	Lead (Pb)	No		Cntral Lab MPPCB Bhopal
12	Manganese (Mn)	No		Cntral Lab MPPCB Bhopal
13	Mercury (Hg)	No		Cntral Lab MPPCB Bhopal
14	Nickel (Ni)	No		Cntral Lab MPPCB Bhopal
15	Potassium (K)	Yes		
16	Sodium (Na)	Yes		
17	Vanadium (V)	No		Cntral Lab MPPCB Bhopal
18	Zinc (Zn)	No		Cntral Lab MPPCB Bhopal
19	Selenium (Se)	No		Cntral Lab MPPCB Bhopal
<b>(c) Organics (General) and Trace Organics Tests</b>				
1	Biological Oxygen Demand (BOD)	Yes		
2	Chemical oxygen demand (COD)	Yes		
3	Oil & Grease	Yes		
4	Phenolic Compounds as C6H5OH	No		
5	Benzopyrene	No		Cntral Lab MPPCB Bhopal
6	<b>Pesticides</b>			
6.a	<b>Organochlorine Pesticides (OCPs) Tests</b>			
i	Aldrin	No		Cntral Lab MPPCB Bhopal
ii	Alpha Endosulphan	No		Cntral Lab MPPCB Bhopal
iii	p.p'-DDT	No		Cntral Lab MPPCB Bhopal
iv	Alpha-HCH	No		Cntral Lab MPPCB Bhopal
v	Beta HCH	No		Cntral Lab MPPCB Bhopal
vi	Beta Endosulphan	No		Cntral Lab MPPCB Bhopal
vii	Gama-HCH	No		Cntral Lab MPPCB Bhopal
viii	o.p'-DDT	No		Cntral Lab MPPCB Bhopal
ix	p.p'-DDE	No		Cntral Lab MPPCB Bhopal
6.b	<b>Organophosphorus Pesticides (OPPs) Tests</b>			
i	Malathion	No		Cntral Lab MPPCB Bhopal
ii	Methyl parathion	No		Cntral Lab MPPCB Bhopal
iii	Chlorpyrifos	No		Cntral Lab MPPCB Bhopal
iv	Dimethoate	No		Cntral Lab MPPCB Bhopal
v	Dieldrin	No		Cntral Lab MPPCB Bhopal
vi	Ethion	No		Cntral Lab MPPCB Bhopal

Samples are sent to Central Laboratory Bhopal

Samples are sent to Central Laboratory Bhopal

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(d) Microbiological Tests			
1	Total Coliform	Yes	
2	Faecal Coliform	Yes	
3	E. Coli	Yes	
4	Faecal Streptococci	Yes	
(e) Toxicological Tests			
1	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent)	No	
B. Sample Matrix / Group of Solid / Solid Waste			
(a) Soil / Sediment / Compost Tests			
1	Cation Exchange Capacity (CEC)	No	
2	Electrical Conductivity (EC)	No	
3	Organic carbon (Chemical Method )	No	
4	pH	No	
5	Soil moisture	No	
6	Total nitrogen	No	
7	Metals by digestion (As, Cd, Cr, Pb, Ni etc.)	No	
(b) Hazardous Waste (Liquid / Slurry / Sludge / Solid / Semi-Solid) Tests			
1	Corrosivity	No	
2	Ignitability (Flash Point)	No	
3	Loss on Drying at 1050C (% Moisture Content)	No	
4	Loss on Drying at 5500C (% Organic Content)	No	
5	pH	No	
6	Organic carbon/matter (Chemical Method )	No	
7	Calorific Value	No	
8	Toxicity Characteristics leaching procedure (TCLP) Leachate and Metals in Leachate (As,Cd,Cr, Pb, Ni)	No	
C. Sample Matrix / Group of Analytes: Air			
(a) Ambient Air			
1	Nitrogen dioxide as NO2	Yes	
2	Sulphur dioxide (SO2)	Yes	
3	Particulate matter (PM10)	Yes	
4	Particulate matter (PM2.5)	Yes	
5	Carbon Monoxide	Yes	
6	Ozone	Yes	
7	Benzene	Yes	
8	Ammonia	Yes	
9	Metals in Particulate Matter, Pb	Yes	After digestion sample sent to other MPPCB's Laboratories
10	Metals in Particulate Matter, As	Yes	After digestion sample sent to other MPPCB's Laboratories

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PART II: Details of Laboratory Infrastructure (Instruments and Equipment)				
S. No.	Name of Instrument / Equipments	Available Yes / No	If the Instrument / Equipment is not available, Specify Timeline for procurement of this instrument (in months)	Action Taken for procurement of this Instrument / Equipment (Specification finalized / procurement initiated / work awarded / outsourced )
<b>A. List of Instruments / Equipment for Sampling of Water, Wastewater and Soil / Hazardous Wastes</b>				
<b>a) Mandatory Requirements</b>				
1	Portable / Pen type pH meter / pH strip	Yes		
2	Portable Dissolved Oxygen Meter / Field Fixing using chemicals	Yes		
3	Electrical Conductivity meter pen type	No		
4	Flow meter / Physical flow measuring	Yes		
5	GPS / Mobile with GPS app	Yes		
6	Ice Box (2 nos.) (150 litre & 100 litre capacities)	Yes		
7	Thermometer	Yes		
8	Stainless steel bucket with nylon rope and mug	Yes		
9	Ground water level measuring device	No		
10	Scoop / shovel	Yes		
11	Auger / core sampler	No		
<b>b) Optional Requirements</b>				
1	Bottom Sampler / Depth sampler	No		
2	Chloroscope for residual chlorine	No		
3	Vandorn or equivalent water sampler (Automatic sampler when composite sampling to be done)	No		
4	Ekman Dredge	No		
<b>B. List of Instruments / Equipment for Sampling of Ambient Air and Source Emission monitoring</b>				
<b>a) Mandatory Requirements</b>				
1	Fine dust samplers PM2.5 (*4 Nos)	Yes		
2	Respirable Dust Sampler PM 10 (* 4 Nos)	Yes		

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3	High Volume Sampler (SPM) (4 Nos)	No		
4	Handy Sampler with set of glass impingers (*2 Nos)	Yes		
5	Low Volume Sampler (LVS)	No		
6	Tedler bags different sizes	Yes		
7	Meteorological tower (All in one telescopic Mast) with sensors comprising wind speed, wind direction, ambient temp., Relative humidity, Solar radiation, rainfall etc	Yes		
8	Nitrogen Cylinder portable	Yes		
9	Activated Charcoal tubes/ Tenex	No		
10	Barometer (Digital)	Yes		
11	Isokinetic Stack Monitoring Kit complete with Stack monitoring instrument panel with inclined cum vertical manometer, Cold Box, Vacuum pump, Glass assembly impingers	Yes		
12	Modified S type Stainless steel Pitot tube (Standard length) with Assembly	Yes		
13	Monoblock type, rotary design vacuum pump	Yes		
14	Orsat Apparatus	No		
15	Source emission monitoring Impingers train set with spare impingers 100 ml & 225 ml capacity	Yes		
16	Stainless steel heated Sampling Probes with thimble holders short and long	Yes		
17	Flue Gas analyzer	Yes		
18	Thermometer/ Thermocouple	Yes		
19	Calibrator for Noise Meters	Yes		
20	Digital Sound level ( Noise ) Metres	Yes		
21	Portable TOC Analyzer for emission monitoring	No		
22	Polyurethane Foam PUF Sampler	No		
<b>b) Optional Requirements</b>				
1	Anemometer	Yes		
2	Weather Monitoring system	Yes		
3	Wind speed/wind direction monitor	Yes		
4	Continuous Ambient Air Monitoring System, Fixed	Yes		
5	Continuous PM10 Analyzer	Yes		
6	Continuous Ambient Air Monitoring System, Mobile	No		

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7	Continuous PM2.5 analyzer	Yes		
8	Ambient Nitrogen Oxides (NO-NO2-NOx Analyzer	Yes		
9	Ambient Ozone Analyzer	Yes		
10	Ambient BTEX Analyzer	Yes		
11	Multipoint Gas Calibration system	Yes		
12	Ambient Sulphur Dioxide analyzer	Yes		
13	Ambient Carbon Monoxide & Carbon dioxide analyzer	Yes		
14	Total Hydrocarbon analyzer	No		
15	Ambient Ammonia analyzer	Yes		
16	Zero Gas Generator	Yes		
17	Synthetic Air Cylinder	Yes		
18	Calibration Gas Cylinders, SO2, NO, CO, NH3B, benzene and Toluene One each with stainless steel Regulators	Yes		
19	Continuous emission monitoring equipment	No		
20	19 inch Rack mounting system for air analyzers	Yes		
21	Dry Gas Meter	No		Flue Gas Meter available
22	Diesel Exhaust analyzer	Yes		
23	Exhaust CO/HC analyzer with Sampling Probe	Yes		
24	Automated Noise Monitoring System	No	Not Required	
25	Integrating Sound level meter	Yes		
26	Continuous PM10& PM2.5 Monitoring Analyzer TEOM system	Yes		
27	Top loading orifice kit for calibration of HVS	No		Third party Calibration
28	Permeation tubes (SO2, NO-NO2-NOx, NH3, BTX)	No		Use Cylinders
<b>C. List of Equipment required for processing of Environmental Samples:</b>				
<b>a) Mandatory Requirements</b>				
1	Accelerated Solvent Extraction (ASE) System	No		
2	Ammonia distillation assembly/TKN Analyzer	Yes		
3	Analytical Balance 4/5 digit & 6 digit (Digital)	Yes		
4	Aquarium for Toxicity bioassay test with complete accessories (*4 Nos)	No		
5	Autoclave (*2 Nos)	Yes (1 No.)		

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6	Bacteriological Incubators Stainless steel (*2 Nos)	Yes		
7	Bio safety cabinets	No		
8	BOD Incubators (2 nos.)	Yes		
9	Centrifuge	Yes		
10	COD Digestion heated Blocks (2) with capacity 16 nos. or more	Yes		
11	Cyanide Distillation Assembly (3)	No		
12	Deep Freezer- Capacity 500 litre	Yes		
13	Laboratory Ball Mill Grinder	No		
14	Laboratory Grinder	No		
15	Laminar Flow bench for Microbiological analysis	Yes		
16	Magnetic Stirrer with heating system (*2 Nos)	Yes (1 No)	Without Heating system	
17	Mechanical Shaker	Yes		
18	Membrane Filtration assembly with vacuum pump (2 nos.)	Yes		
19	Microbial culture refrigerator	Yes		
20	Microwave Digester with 16 vessels/ Hot Plate	Yes		
21	Muffle Furnace (*1 Nos), Range 1200 C	Yes		
22	Phenol distillation assembly (3)	No		
23	Plate counter, Manual/Automatic	Yes		
24	Digestion Chambers/ Fume hood	Yes		
25	Digital Thermometer & Humidity meter- All lab area	Yes		
26	Dispensers (Various capacities ) up to 5, 10, 25 & 50 ml	Yes		
27	Filtration Assembly with vacuum pump	Yes		
28	Fluoride Distillation Assembly (3)	No		
29	Arsenic / Fluoride Glass Distillation assemblies	No		
30	Glass Double Distillation Assembly /Water Purification System	Yes		
31	Heating mantles (2 nos.)	No		
32	Hot plates (small, Medium and Large ) (*2 nos.)	Yes		
33	Thermo Hygrometer	Yes		
34	Imhoff Cone	No		

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35	Top loading Precision Digital Balance (minimum detection 0.001mg/0.01 mg) with anti-vibration facility- 3 nos. i.e 4/5 Digit (2 nos), - 6 Digit (1 no)	Yes		
36	Refrigerators Big Size 300 litres or more, double door- 2 nos.	Yes (1 No.)		
37	Rotary Evaporator (Buchi type) with water recirculating chiller	No		
38	Separating funnel shaker	Yes		
39	Soxhlet Apparatus	No		Extraction done at Central Lab, Bhopal
40	Solid Phase Extraction (SPE) /SPME Extraction system	No		
41	Thermometer (Alcohol)	Yes		
42	Dry & wet bulb Thermometer	No		
43	Toxicity characteristic leaching procedure (TCLP) Extractors (Zero head and Bottle)	No		
44	Ultra sonic water bath- Capacity 3 litre	No		
45	Water Bath with temperature control (*2 Nos)	Yes		
46	Water Bath with temp. for mercury sample digestion- 20 BOD Bottles	No		
<b>D. Analytical Instruments at Environmental Laboratories</b>				
<b>a) Mandatory Requirements</b>				
1	Atomic Absorption spectrometer (AAS)- Flame, Hydride & Graphite Tube Atomizer (GTA)	No		Sample Sent to HO
2	Binocular Stereo Zoom Microscope	No		
3	Bomb Calorimeter	No		
4	BTX Analyzer with BTX calibrator	Yes		
5	Colony counter	Yes		
6	Conductivity meter- 2 nos.	Yes		
7	Environment conditioning chamber	Yes		
8	Digital Burettes- 50 ml*2, 100 ml*2	Yes		
9	Dissolved Oxygen Meter (Bench model)	No		Azide Modification method is used
10	Flame Photometer	Yes		
11	Flash Point Apparatus	No		
12	Gas Chromatograph Mass Spectrometer	No		Sample Sent to HO
13	High Performance Liquid Chromatograph (HPLC)	No		Sample Sent to HO
14	Inductively Coupled Plasma (ICP) Spectrometer-OES	No		Sample Sent to HO
15	Ion Chromatograph Anion & Cations	No		Sample Sent to HO

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16	Methane and Non Methane (NMHC) Analyzer	Yes		
17	Microscope – 100x	No		
18	Microscope Binocular Research	No		
19	CO (NDIR based) Analyzer	Yes		
20	Nephelometer (Turbidity Meter)	Yes		
21	pH-Meter with combined electrode (3 point)- 2 nos.	Yes		
22	Specific ion Analyzer with ion selective electrodes	No		
23	Spectrophotometer Visible (Portable)	No		
24	TKN Analyzer semi-automatic with aluminum block digester	No		
25	UV-Vis Spectrophotometer	Yes		
26	Moisture Content Analyzer	No		
<b>b) Optional Requirements</b>				
1	Automatic Titration Assembly	Yes		
2	Carbon, Hydrogen, Nitrogen and Sulphur (CHNS) Elemental Analyzer	No		
3	EDXRF Analyzer/WDXRF Analyzer	No		
4	Fourier-transform infrared Spectrometer (FTIR)	No		
5	Flocculator ( Jar testing apparatus)	No		
6	Toxic Gas Analyzer	No		
7	Organic Halogen (AOX/TOX) Analyzer	No		
8	TOC Analyzer	No		
9	High Resolution Mass Spectrometer (HRGC-HRMS)	No		
10	Inductively Coupled Plasma Mass (ICP-MS) Spectrometer	No		
11	X Ray Fluorescence (XRF) Spectrometer (Portable)	No		

Specific remarks, if any:

*Ayeshika*

*Dr.*  
**Scientist**  
 M.P. Pollution Control Board  
 Saagar  
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**PART I: Facility available for monitoring of environmental parameters:**

Parameters	Total Number of Parameters	Facility available for	Facility not available for
<b>A. Sample</b>	<b>67</b>		
(a) Physical	8	31	36
(b) Inorganic T	34	7	1
(i) General & N	15	17	17
(ii) Trace Metal	19	13	2
(c) Organics	20	4	15
Pesticides	15	3	17
Organochlorin	9	0	15
Organophosp	6	0	9
(d)	4	0	6
(e) Toxicologic	1	4	0
<b>B. Sample</b>	<b>15</b>	<b>0</b>	<b>1</b>
(a) Soil / Sedin	7	0	15
(b) Hazardous	8	0	7
<b>C. Sample Ma</b>	<b>28</b>	<b>0</b>	<b>8</b>
(a) Ambient Air	12	26	2
(b) Stack Gas /	9	12	0
(c) Noise Level	2	8	1
(d) Meteorologi	5	2	0
		4	1

**PART II: Details of Laboratory Infrastructure (Instruments and Equipment)**

Name of	Total Numbers	Number of Available	Number of Not Available
<b>Total</b>	<b>148</b>	<b>82</b>	<b>63</b>
<b>A. List of</b>	<b>15</b>	<b>8</b>	<b>7</b>
a) Mandatory I	11	8	3
b) Optional Res	4	0	4
<b>B. List of</b>	<b>50</b>	<b>37</b>	<b>13</b>
a) Mandatory F	22	16	6
b) Optional Res	28	21	7
<b>C. List of</b>	<b>46</b>	<b>25</b>	<b>18</b>
a) Mandatory F	46	25	18
<b>D. Analytical</b>	<b>37</b>	<b>12</b>	<b>25</b>
a) Mandatory F	26	11	15
b) Optional Res	11	1	10

*Arushi Arora*

*MB*  
Scientist  
M.P. Pollution Control Board  
Sagar

Regional Officer  
M.P. Pollution Control Board  
Sagar (M.P.)

Note: It is requested to please ensure that each sheet is created separately for each laboratory and rename the sheet accordingly .

LABORATORY ANALYTICAL FACILITIES

Name of the Board / Committee: Regional Laboratory Gwalior, Madhya Pradesh

PART I: Facility available for monitoring of environmental parameters:

S. No.	Parameters	Facilities Available (Yes / No)	If facility is not available, Specify Timeline for addition of this parameter.	Action Taken for addition of this parameter (Specification finalized / procurement initiated / )
<b>A. Sample Matrix / Group of Water and Wastewater</b>				
<b>(a) Physical Tests</b>				
1	Temperature	Yes		
2	Colour	Yes		
3	pH	Yes		
4	Turbidity	Yes		
5	Conductivity	Yes		
6	Total Solids	Yes		
7	Total Dissolved Solids (TDS)	Yes		
8	Total Suspended Solids (TSS)	Yes		
<b>(b) Inorganic Tests</b>				
<b>(i) General &amp; Non-metallic</b>				

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MADHYA PRADESH

1	Alkalinity	Yes		
2	Chloride	Yes		
3	Cyanide	No		
4	Dissolved oxygen	Yes		
5	Nitrite nitrogen	Yes		
6	Nitrate nitrogen	Yes		
7	Ammonical nitrogen	Yes		
8	Fluoride	Yes		
9	Hardness (Total)	Yes		
10	Calcium	Yes		
11	Magnesium	Yes		
12	Phosphate	Yes		
13	Sulphate	Yes		
14	Sulphide	No		
15	Total Residual chlorine (TRC)	No		

**(ii) Trace Metals Tests**

1	Aluminium (Al)	No		
2	Arsenic (As) Total	No		
3	Barium	No		
4	Boron	No		
5	Chromium (Cr) Hexavalent	No		
6	Chromium (Cr) Total	No		
7	Cadmium (Cd)	No		
8	Cobalt (Co)	No		
9	Copper (Cu)	No		
10	Iron (Fe)	No		
11	Lead (Pb)	No		
12	Manganese (Mn)	No		

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13	Mercury (Hg)	No		
14	Nickel (Ni)	No		
15	Potassium (K)	Yes		
16	Sodium (Na)	Yes		
17	Vanadium (V)	No		
18	Zinc (Zn)	No		
19	Selenium (Se)	No		
<b>(c) Organics (General) and Trace Organics Tests</b>				
1	Biological Oxygen Demand (BOD)	Yes		
2	Chemical oxygen demand (COD)	Yes		
3	Oil & Grease	Yes		
4	Phenolic Compounds as C6H5OH	No		
5	Benzopyrene	No		
6	<b>Pesticides</b>			
6.a	<b>Organochlorine Pesticides (OCPs) Tests</b>			
i	Aldrin	No		
ii	Alpha Endosulphan	No		
iii	p,p'-DDT	No		
iv	Alpha-HCH	No		
v	Beta HCH	No		
vi	Beta Endosulphan	No		
vii	Gama-HCH	No		
viii	o,p'-DDT	No		
ix	p,p'-DDE	No		
6.b	<b>Organophosphorus Pesticides (OPPs) Tests</b>			
i	Malathion	No		
ii	Methyl parathion	No		
iii	Chlorpyrifos	No		
iv	Dimethoate	No		
v	Dieldrin	No		

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Bhopal

Samples are sent to  
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Bhopal

vi	Ethion	No		
<b>(d) Microbiological Tests</b>				
1	Total Coliform	Yes		
2	Faecal Coliform	Yes		
3	E. Coli	Yes		
4	Faecal Streptococci	Yes		Central Laboratory Bhopal
<b>(e) Toxicological Tests</b>				
1	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent)	Yes		
<b>B. Sample Matrix / Group of Solid / Solid Waste</b>				
<b>(a) Soil / Sediment / Compost Tests</b>				
1	Cation Exchange Capacity (CEC)	No		
2	Electrical Conductivity (EC)	No		
3	Organic carbon (Chemical Method )	No		
4	pH	No		
5	Soil moisture	No		
6	Total nitrogen	No		
7	Metals by digestion (As, Cd, Cr, Pb, Ni etc.)	No		
<b>(b) Hazardous Waste (Liquid / Slurry / Sludge / Solid / Semi-Solid) Tests</b>				
1	Corrosivity	No		
2	Ignitability (Flash Point)	No		
3	Loss on Drying at 1050C (% Moisture Content)	No		
4	Loss on Drying at 5500C (% Organic Content)	No		
5	pH	No		

Samples are sent to  
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Bhopal

6	Organic carbon/matter (Chemical Method )	No		
7	Calorific Value	No		
8	Toxicity Characteristics leaching procedure (TCLP) Leachate and Metals in Leachate (As,Cd,Cr, Pb, Ni)	No		

**C. Sample Matrix / Group of Analytes: Air**
**(a) Ambient Air**

1	Nitrogen dioxide as NO2	Yes		
2	Sulphur dioxide (SO2)	Yes		
3	Particulate matter (PM10)	Yes		
4	Particulate matter (PM2.5)	Yes		
5	Carbon Monoxide	No		
6	Ozone	No		
7	Benzene	No		
8	Ammonia	No		
9	Metals in Particulate Matter, Pb	No		
10	Metals in Particulate Matter, As	No		
11	Metals in Particulate Matter, Ni	No		
12	Particulate Benzo-a-Pyrene (BaP)	No		

Samples are sent to  
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Bhopal

**(b) Stack Gas / Stationary Source Emission**

1	Particulate Matter	Yes		
2	Sulphur Dioxide	Yes		
3	Carbon Dioxide	Yes		
4	Carbon Monoxide (NDIR based Method)	No		
5	Temperature	Yes		
6	Moisture	Yes		

10	Metals in Particulate Matter, As	No		
11	Metals in Particulate Matter, Ni	No		
12	Particulate Benzo-a-Pyrene (BaP)	No		
<b>(b) Stack Gas / Stationary Source Emission</b>				
1	Particulate Matter	Yes		
2	Sulphur Dioxide	Yes		
3	Carbon Dioxide	Yes		
4	Carbon Monoxide (NDIR based Method)	No		
5	Temperature	Yes		
6	Moisture	Yes		
7	Oxygen	Yes		
8	Oxides of Nitrogen	Yes		
9	Halides (HCL/HF)	No		
<b>(c) Noise Level</b>				
1	Ambient Noise level measurement (20 to 140 dB)	Yes		
2	Source Noise Level Measurement (Industrial process, DG set- 20 to 140dB)	Yes		
<b>(d) Meteorological Monitoring</b>				
1	Ambient Temperature	Yes		
2	Wind direction	No		
3	Wind speed	No		
4	Relative Humidity	No		
5	Mixing Height	No		

Specific remarks, if any:

**PART II: Details of Laboratory Infrastructure (Instruments and Equipment)**

S. No.	Name of Instrument / Equipments	Available Yes / No	If the Instrument / Equipment is not available, Specify Timeline for procurement of this instrument (in months)	Action Taken for procurement of this Instrument / Equipment (Specification finalized / procurement initiated / work awarded / outsourced )
<b>A. List of Instruments / Equipment for Sampling of Water, Wastewater and Soil / Hazardous</b>				

## a) Mandatory Requirements

1	Portable / Pen type pH meter / pH strip	Yes		
2	Portable Dissolved Oxygen Meter / Field Fixing using chemicals	No		
3	Electrical Conductivity meter pen type	No		
4	Flow meter / Physical flow measuring	No		
5	GPS / Mobile with GPS app	No		
6	Ice Box (2 nos.) (150 litre & 100 litre capacities)	Yes		
7	Thermometer	Yes		
8	Stainless steel bucket with nylon rope and mug	Yes		
9	Ground water level measuring device	No		
10	Scoop / shovel	No		
11	Auger / core sampler	No		

## b) Optional Requirements

1	Bottom Sampler / Depth sampler	No		
2	Chloroscope for residual chlorine	No		
3	Vandorn or equivalent water sampler (Automatic sampler when composite sampling to be done)	No		
4	Ekman Dredge	No		

## B. List of Instruments / Equipment for Sampling of Ambient Air and Source Emission monitoring

## a) Mandatory Requirements

1	Fine dust samplers PM2.5 (*4 Nos)	Yes		
2	Respirable Dust Sampler PM 10 (* 4 Nos)	Yes		
3	High Volume Sampler ( SPM ) (4 Nos)	Yes		
4	Handy Sampler with set of glass impingers (*2 Nos)	No		
5	Low Volume Sampler (LVS)	No		
6	Tedler bags different sizes	No		
7	Meteorological tower (All in one telescopic Mast) with sensors comprising wind speed, wind direction, ambient temp., Relative humidity, Solar radiation, rainfall etc.	No		

8	Nitrogen Cylinder portable	No		
9	Activated Charcoal tubes/ Tenex	No		
10	Barometer (Digital)	No		
11	Isokinetic Stack Monitoring Kit complete with Stack monitoring instrument panel with inclined cum vertical manometer, Cold Box, Vacuum pump, Glass assembly impingers	Yes		
12	Modified S type Stainless steel Pitot tube (Standard length) with Assembly	Yes		
13	Monoblock type, rotary design vacuum pump	No		
14	Orsat Apparatus	No		
15	Source emission monitoring Impingers train set with spare impingers 100 ml & 225 ml capacity	Yes		
16	Stainless steel heated Sampling Probes with thimble holders short and long	Yes		
17	Flue Gas analyzer	Yes		
18	Thermometer/ Thermocouple	Yes		
19	Calibrator for Noise Meters	Yes		
20	Digital Sound level ( Noise ) Metres	Yes		
21	Portable TOC Analyzer for emission monitoring.	No		
22	Polyurethane Foam PUF Sampler	No		
<b>b) Optional Requirements</b>				
1	Anemometer	No		
2	Weather Monitoring system	No		
3	Wind speed/wind direction monitor	No		
4	Continuous Ambient Air Monitoring System, Fixed	Yes		
5	Continuous PM10 Analyzer	No		
6	Continuous Ambient Air Monitoring System, Mobile	No		
7	Continuous PM2.5 analyzer	No		
8	Ambient Nitrogen Oxides (NO-NO2-NOx Analyzer	No		
9	Ambient Ozone Analyzer	No		
10	Ambient BTEX Analyzer	No		

11	Multipoint Gas Calibration system	No		
12	Ambient Sulphur Dioxide analyzer	No		
13	Ambient Carbon Monoxide & Carbon dioxide analyzer	No		
14	Total Hydrocarbon analyzer	No		
15	Ambient Ammonia analyzer	No		
16	Zero Gas Generator	No		
17	Synthetic Air Cylinder	No		
18	Calibration Gas Cylinders, SO <sub>2</sub> , NO, CO, NH <sub>3</sub> , benzene and Toluene One each with stainless steel Regulators	No		
19	Continuous emission monitoring equipment	No		
20	19 inch Rack mounting system for air analyzers	No		
21	Dry Gas Meter	No		
22	Diesel Exhaust analyzer	Yes		
23	Exhaust CO/HC analyzer with Sampling Probe	Yes		
24	Automated Noise Monitoring System	Yes		
25	Integrating Sound level meter	No		
26	Continuous PM <sub>10</sub> & PM <sub>2.5</sub> Monitoring Analyzer TEOM system	No		
27	Top loading orifice kit for calibration of HVS	No		
28	Permeation tubes (SO <sub>2</sub> , NO-NO <sub>2</sub> -NO <sub>x</sub> , NH <sub>3</sub> , BTX)	No		

**C. List of Equipment required for processing of Environmental Samples:**

**a) Mandatory Requirements**

1	Accelerated Solvent Extraction (ASE) System	No		
2	Ammonia distillation assembly/TKN Analyzer	Yes		
3	Analytical Balance 4/5 digit & 6 digit (Digital)	Yes		
4	Aquarium for Toxicity bioassay test with complete accessories (*4 Nos)	Yes		
5	Autoclave (*2 Nos)	Yes		
6	Bacteriological Incubators Stainless steel (*2 Nos)	Yes		
7	Bio safety cabinets	No		
8	BOD Incubators (2 nos.)	Yes		

9	Centrifuge	No		
10	COD Digestion heated Blocks (2) with capacity 16 nos. or more	Yes		
11	Cyanide Distillation Assembly (3)	No		
12	Deep Freezer- Capacity 500 litre	Yes		
13	Laboratory Ball Mill Grinder	No		
14	Laboratory Grinder	No		
15	Laminar Flow bench for Microbiological analysis	Yes		
16	Magnetic Stirrer with heating system (*2 Nos)	No		
17	Mechanical Shaker	No		
18	Membrane Filtration assembly with vacuum pump (2 nos.)	No		
19	Microbial culture refrigerator	No		
20	Microwave Digester with 16 vessels/ Hot Plate	Yes		
21	Muffle Furnace (*1 Nos), Range 1200 C	Yes		
22	Phenol distillation assembly (3)	No		
23	Plate counter, Manual/Automatic	No		
24	Digestion Chambers/ Fume hood	No		
25	Digital Thermometer & Humidity meter- All lab area	No		
26	Dispensers (Various capacities ) up to 5, 10, 25 & 50 ml	No		
27	Filtration Assembly with vacuum pump	Yes		
28	Fluoride Distillation Assembly (3)	No		
29	Arsenic / Fluoride Glass Distillation assemblies	No		
30	Glass Double Distillation Assembly /Water Purification System	Yes		
31	Heating mantles (2 nos.)	No		
32	Hot plates (small, Medium and Large ) (*2 nos.)	Yes		
33	Thermo Hygrometer	No		
34	Imhoff Cone	No		



9	Dissolved Oxygen Meter (Bench model)	No		
10	Flame Photometer	Yes		
11	Flash Point Apparatus	No		
12	Gas Chromatograph Mass Spectrometer	No		
13	High Performance Liquid Chromatograph (HPLC)	No		
14	Inductively Coupled Plasma (ICP) Spectrometer-OES	No		
15	Ion Chromatograph Anion & Cations	No		
16	Methane and Non Methane (NMHC) Analyzer	No		
17	Microscope – 100x	No		
18	Microscope Binocular Research	No		
19	CO (NDIR based) Analyzer	No		
20	Nephelometer (Turbidity Meter)	Yes		
21	pH-Meter with combined electrode (3 point)- 2 nos.	Yes		
22	Specific ion Analyzer with ion selective electrodes	No		
23	Spectrophotometer Visible (Portable)	No		
24	TKN Analyzer semi-automatic with aluminum block digester	No		
25	UV-Vis Spectrophotometer	Yes		
26	Moisture Content Analyzer	No		
<b>b) Optional Requirements</b>				
1	Automatic Titration Assembly	No		
2	Carbon, Hydrogen, Nitrogen and Sulphur (CHNS) Elemental Analyzer	No		
3	EDXRF Analyzer/WDXRF Analyzer	No		
4	Fourier-transform infrared Spectrometer (FTIR)	No		
5	Flocculator ( Jar testing apparatus)	No		
6	Toxic Gas Analyzer	No		
7	Organic Halogen (AOX/TOX) Analyzer	No		
8	TOC Analyzer	No		
9	High Resolution Mass Spectrometer (HRGC-HRMS)	No		

4941

10	Inductively Coupled Plasma Mass (ICP-MS) Spectrometer	No		
11	X Ray Fluorescence (XRF) Spectrometer (Portable)	No		

Specific remarks, if any:

*liy*  
क्षेत्रीय कार्यालय  
म.प्र. प्रदूषण नियंत्रण बोर्ड  
पिन दयाल नगर, खालियार

## PART I: Facility available for monitoring of environmental parameters:

Parameters	Total Number of Parameters	Facility available for	Facility not available for	
<b>A. Sample Matrix / Group of Water and Wastewater</b>	<b>67</b>	<b>30</b>	<b>37</b>	<b>0</b>
(a) Physical Tests	8	8	0	0
(b) Inorganic Tests	34	14	20	0
(i) General & Non-metallic	15	12	3	0
(ii) Trace Metals Tests	19	2	17	0
(c) Organics (General) and Trace Organics Tests	20	3	17	0
Pesticides	15	0	15	0
Organochlorine Pesticides (OCPs) Tests	9	0	9	0
Organophosphorus Pesticides (OPPs) Tests	6	0	6	0
(d) Microbiological Tests	4	4	0	0
(e) Toxicological Tests	1	1	0	0
<b>B. Sample Matrix / Group of Solid / Solid Waste</b>	<b>15</b>	<b>0</b>	<b>15</b>	<b>0</b>

(a) Soil / Sediment / Compost Tests	7	0	7	0
(b) Hazardous Waste (Liquid / Slurry / Sludge / Solid / Semi-Solid) Tests	8	0	8	0
<b>C. Sample Matrix / Group of Analytes: Air</b>	<b>28</b>	<b>14</b>	<b>14</b>	
(a) Ambient Air	12	4	8	0
(b) Stack Gas / Stationary Source Emission	9	7	2	0
(c) Noise Level	2	2	0	0
(d) Meteorological Monitoring	5	1	4	0

**PART II: Details of Laboratory Infrastructure (Instruments and Equipment)**

Name of Instrument / Equipments	Total Numbers	Number of Available	Number of Not Available	
<b>Total</b>	<b>148</b>	<b>41</b>	<b>107</b>	<b>0</b>
<b>A. List of Instruments / Equipment for Sampling of Water, Wastewater and Soil / Hazardous Wastes</b>	<b>15</b>	<b>4</b>	<b>11</b>	
a) Mandatory Requirements	11	4	7	0
b) Optional Requirements	4	0	4	0
<b>B. List of Instruments / Equipment for Sampling of Ambient Air and Source Emission monitoring</b>	<b>50</b>	<b>15</b>	<b>35</b>	
a) Mandatory Requirements	22	11	11	0
b) Optional Requirements	28	4	24	0
<b>C. List of Equipment required for processing of Environmental Samples:</b>	<b>46</b>	<b>17</b>	<b>29</b>	
a) Mandatory Requirements	46	17	29	0
<b>D. Analytical Instruments at Environmental Laboratories</b>	<b>37</b>	<b>5</b>	<b>32</b>	
a) Mandatory Requirements	26	5	21	0
b) Optional Requirements	11	0	11	0