

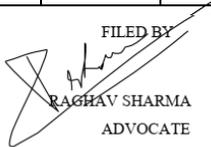
**BEFORE THE NATIONAL GREEN TRIBUNAL**  
**PRINCIPAL BENCH, NEW DELHI**  
**ORIGINAL APPLICATION NO. 693 OF 2023**

**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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**RAGHAV SHARMA**  
 ADVOCATE

**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”**

**REPLY ON BEHALF OF THE RESPONDENT NO. 13, PRINCIPAL SECRETARY, DEPARTMENT OF ENVIRONMENT AND FOREST**

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 Order dated 23.11.2023 directed as under:

*“12. The above respondents are directed to file their reports showing the sanctioned strength and working strength of staff in the concerned SPCBs/PCCs, CPCB the ratio of administrative, Ministerial and Technical staff in the SPCBs/PCCs, CPCB and the regulating and monitoring facilities which are available with the SPCBs/PCCs/CPCB. In respect of laboratories, the report will disclose the sanctioned strength and present working strength of staff, the infrastructure which is available in the labs and further need for equipment and infrastructure in those labs and the provisions made in laboratories for enforcement and monitoring of hotspots in critically polluted areas. The report should also include the availability of budget and its sources and expenditure in last two years (2020-2021 and 2021-2022)....”*

2. That with regards to the Information related to the Madhya Pradesh Pollution Control Board (hereinafter referred to as **MPPCB**) laboratories regarding accreditation/ recognitions it is submitted that the MPPCB is having Ten Regional laboratories located across the state and one Central laboratory located at H.Q. in Bhopal. Out of these ten laboratories eight are Regional laboratories presently accredited as per ISO 17025 and 01 Central laboratory Recognized under EPA, 1986. Accreditation under various ISO standards [ISO-17025 & 45001] and recognition under EPA[1986] described in **Annexure R-13/1**. Letter issued to the remaining Regional laboratories of the Board to initiate the process of accreditation and recognition **Annexure R-13/2**.
3. That the information related to Sanction strength and working strength of staff in MPPCB in terms of administrative, ministerial, Technical and scientific staff and their ratio the same is tabulated as follows:

	<b>SANCTION POST</b>	<b>WORKING STAFF</b>	<b>RATIO WORKING STAFF</b>	<b>VACANT POST</b>	<b>RATIO VACANT/SAN CTIONED STAFF</b>
[a] Administrative staff					
	18	17	94.44	01	5.56
[b] Ministerial staff [accounts/clerical/PR/Legal/IT sections]					
	618	232	37.54	386	62.46
[c] Technical staff					
	151	47	31.13	104	68.87
[d] Scientific staff					
	441	162		279	
<b>Total</b>	<b>1228</b>	<b>458</b>	<b>37.30</b>	<b>770</b>	<b>62.70</b>

Further it is necessary to mention that in addition to above about 217 personnel in various capacities like outsource, various projects are recruited on contractual basis supporting the working of Board.

4. That with regards to infrastructure facilities, the information is tabulated as follows:

<p>a) Monitoring facilities which are available in MPPCB.</p>	<p>[i] MPPCB has established 01 Central Laboratory at Bhopal and 10 Regional Laboratories across the M.P. State [Gwalior, Sagar, Ujjain, Indore, Rewa, Satna, Jabalpur, Singroulli, Mandideep and Shahdol] to carry out monitoring of pollutants as per the provisions laid down under following acts/rules:-</p> <p>[a] The Water [P&amp;C of Pollution]Act,1974  [b] The Air [P&amp;C of Pollution]Act,1981  [c] The Noise Pollution [R&amp;C] Rules , 2000  [d] The EPA[1986]  [e] HW [M,H&amp;TB] Rules,2016  [f] The Municipal Solid Waste [M&amp;H] Rules, 2000</p> <p>All Regional Laboratories are equipped to carry out the analysis for basic parameters of the collected samples of various matrix. Samples for analysis of certain parameters like pesticides, micro metals, fauna &amp; flora and hazardous waste are being send to Central Laboratory for analysis.</p>	<p>Monitoring facilities, manpower and requirements in various Regional Laboratories and Central laboratory of MPPCB is appended as <b>Annex R-13/4</b></p>
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<p>b) Infra structure which is available in the labs and further need for equipments.</p>	<p>Monitoring of various components across the state are being carried out by regional laboratories as per the monitoring packages duly approved by HO., Bhopal, this package includes monitoring of ambient air, noise, soil [in commercial/residential/industrial/silence zones], natural water, ground water covering all natural streams, rivers, ground water in industrial /commercial/residential areas across the state on defined frequency. In last financial year about 87 rivers/their tributaries, 100 ponds/lakes were monitored and analysed by regional laboratories, apart from this surface water, ground water monitoring was also carried out from 503 locations and air quality monitoring across the state with defined frequency.</p>	
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<p>c) Provisions made in laboratories for enforcement and monitoring of hotspots in critically polluted areas.</p>	<p>CPCB sponsored programs for monitoring of ambient air and natural water like NWMP [National Water Quality Monitoring Programme] at 242 locations for surface and ground water &amp; NAMP [ National Air Monitoring Programme] at 41 locations in 16 cities are also being carried out at the same time. The analytical data are uploaded on CPCB portal i.e. EAQDES and EWQDES.</p> <p>Monitoring of industrial discharge is being done as per requirement, as Zero Discharge Policy has been adopted in M.P. Monitoring of hazardous waste are also being done under prescribed rule. The collected samples are being analysed in respective regional laboratories &amp; Central Laboratory and analytical data is managed in MPPCB portal – <i>Narmada XGN</i>.</p> <p>The monitoring activities [ambient air and natural water] are now to be perform at micro level i. eupto district and sub district level, needs monitoring equipments and manpower. MPPCB has established 15 CAAQMS in major cities [Bhopal, Gwalior, Jabalpur, Indore, Sagar, Ujjain, Pithampur industrial area, Katni, Singroulli, Dewas and Mandideep industrial area] , 10 RTWQMS [ Narmada, Kshipra and Khan Rivers] and 04 RTNMS at Bhopal for real time analytical</p>	
--	--	--

	<p>data .</p> <p>[iii] Central Laboratory, Bhopal having advanced instrumentation facility , catering the requirement of analysis of advanced parameters for the samples received from respective regional laboratories.</p> <p>[iv] The present structure w.r.t instruments and manpower availability in different Regional laboratories and Central Laboratory and requirements is appended in <b>Annex R/13- 4.</b></p> <p>[v] Present scientific staff available in respective Regional Laboratories are also being deployed for monitoring of polluted areas, complaints, directions [from HO, Ministry and statutory bodies], special monitoring during festivals apart from routine monitoring job .</p>	
--	---	--

5. That with regards to Availability of budget and its sources and expenditure in last two years [2020-2021] and [2021-2022] the allocation of budget is as follows:

Sr.	HEAD	YEAR 2020/21		YEAR 2021-22	
		Budget allocation [Rs in lacs]	Expenditure [Rs in lacs]	Budget allocation [Rs in lacs]	Expenditure [Rs in lacs]
1	Administrative/ Establishment	3803.39	1525.32	4018.08	1473.67
2	Scientific/lab operations [ instrument purchase ,repair and other expenses]	515.00	543.01	655.00	456.34

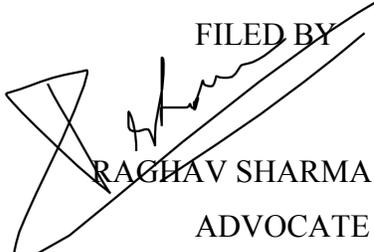
6. That the instant Reply is being filed by MP PCB in compliance of Order dated 23.11.2023. MP PCB further craves leave of this Hon'ble Tribunal to file a detailed reply and/or affidavit as and when the Hon'ble Tribunal directs or when the same is necessitated in the interest of justice. An affidavit in the support of the reply is annexed.

Date: 16.01.2024

NEW DELHI

MPPCB (R-13)

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Accreditation/ Recognitions status of MPPCB laboratories

Annex-1

S.No	Name of laboratory	Accreditation/recognitions			Remarks
		ISO 17025 [NABL]	ISO 45001	EPA[1986]	
1	Central lab, Bhopal	√	√	√	Letter No 303 dated 8/12/2023 issued to all regional laboratories to take initiatives to get their labs accredited / recognized in relevant IS standards and EPA recognitions
2	R.L*. Indore	√	√		
3	R.L. Ujjain	√	√		
4	R.L. Jabalpur	√			
5	R.L. Gwalior	√			
6	R.L. Satna	√			
7	R.L. Sagar	√			
8	R.L. Mandideep				
9	R.L. Rewa				
10	R.L. Shahdol	√			
11	R.L. Singroulli				

\*Regional Laboratory

Annex-2

M.P. POLLUTION CONTROL BOARD  
Paryawaran Parisar E-5, Arera Colony, Bhopal – 462016  
Ph-0755- 2464428, 2466191, 2421425. Fax-0755-2463742, Website-mppcb.org

No. 303 /C.L./MPPCB/2023

Date: 8/14/2023

To,  
Lab Incharge  
MPPCB

Indore/Ujjain/Jabalpur/Gwalior/Satna/Sagar/Mandideep/ Rewa/Shahdol/Singroulli

Subject- Accreditation of your lab as per [1] ISO:17025; [2] ISO 45001 and[3] EPA[1986].

Board is getting various directions by NGT , communications from CPCB and MoEFCC regarding actions to be taken by the Board to industries under EPA[1986] . In view of this ,it is necessary to have our labs recognised under EPA[1986]. Present status reveals that most of the Lab incharge of Board labs are not taking any serious initiatives to get their lab acciditated and recognized. Present status of accreditation and recognition of Board lab is as follows :-

S.No	Name of lab	Acciditaion / recognition		
		ISO 17025 [NABL]	ISO 45001 [OHSAS]	EPA[1986]
1	Central Lab, Bhopal	√	√	√
2	R.L. Indore	√	√	No action taken
3	R.L. Ujjain	√	√	In process of renewal
4	R.L. Jabalpur	√	No action taken	No action taken
5	R.L. Gwalior	In process	No action taken	No action taken
6	R.L. Satna	√	No action taken	No action taken
7	R.L. Sagar	√	No action taken	No action taken
8	R.L. Mandideep	No action taken	No action taken	No action taken
9	R.L. Rewa	No action taken	No action taken	No action taken
10	R.L. Shahdol	√	No action taken	No action taken
11	R.L. Singroulli	No action taken	No action taken	No action taken

Also, requested to go through the various directions/circulars issued by MoEFCC time to time regarding EPA recognition. Lab incharge also see the key parameters needs to be accridated under ISO .17025 which is important to take actions under EPA,1986. Kindly take immediate action to get the Board Labs accridated [as per ISO 17025 ; ISO 45001]and recognized [under EPA[1986]. and progress may be send to undersigned on regular basis.

[Dr Abhay Kumar Saxena]  
Senior Scientific Officer

Endt. No. 304 /C.L./MPPCB/2023

Date: 8/14/23

Copy to Regional Officer, M. P.Pollution Control Board .....for granting financial sanctions on time for smooth execution.

Ali Ros

[Dr Abhay Kumar Saxena]  
Senior Scientific Officer

Annex 3

**MADHYA PRADESH POLLUTION CONTROL BOARD**

Paryavaran Parisar, E-5, Arera Colony, Bhopal 462016

Fax No: +91-755-2463742 E-mail: it\_mppcb@rediffmail.com



Sr. 109/LEGAL/NGT (CZ)/PCB-2023

BHOPAL, DATE 08 JAN 2024

To,

Dr. Alok Saxena  
Chief Chemist & OIC of the Case,  
Central laboratory,  
MPPCB, Bhopal.

Subject: - NGT, Principle Bench case O.A. No. 693/2023 (News item appearing in Deccan Herald) dated 24.10.2023 titled "**Pollution Control Board are the weak Links**".

Ref: Letter No. 306 CL/ MPPCB/2023 dated 15.12.2023.

In reference to the case OA No. 693/2023 pending before the Hon'ble NGT, (PB) pertaining to "*1. Sanctioned strength and working strength of staff in the concerned SPCBs/PCCs, CPCB the ratio of administrative, Ministerial and Technical staff in the SPCBs/PCCs, CPCB and the regulating and monitoring facilities which are available with the SPCBs/PCCs/CPCB.*"

Please find attached herewith, the information regarding action taken by MPPCB to fill the vacant posts (**Annexure -A**) and information about total sanctioned, filled and vacant posts of officers/employees (**Annexure-B**) for necessary action.

Encl. As above.

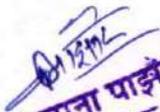
**Director Environment (Administration)**  
**M.P. Pollution Control Board**

Annexure - AACTION TAKEN BY MPPCB TO FILLED THE VACANT POSTS IN THE BOARD

Sr. No.	Name of the Department	Action taken by Board
1.	Madhya Pradesh Public Service Commission	On 11.06.2023 request letter was sent to fill up the Assistant Engineer (Environment) 10 posts and Assistant Engineer (Computer ) 1 posts. MPPSC stated that they cannot conduct recruitment on behalf of the Board.
2.	M.P. Online Limited, Bhopal	To fill up the Assistant Engineer (Environment) 17 posts and Scientist 5 posts on the basis of GATE and UGC Net score advertisement was published on 21.09.2019 by M.P. Online Bhopal. The same advertisement was rejected on account of directions by Environment Department, State of MP.
3.	M.P. Online Limited, Bhopal	<p>Advertisement dated 11.09.2023 was published for Assistant Engineer (Environment) on the basis of previous 3 years GATE Score. The Hon'ble Madhya Pradesh High Court in WP No. 24972/2023 (Shubanshu Tripathi v State of MP) vide order dated 29.09.2023 has directed that :-</p> <p>" In the interregnum, the petitioner is permitted to apply for the post of Assistant Engineer (Environment) wherein the respondents to consider the case of the petitioner without reference to he possessing a valid GATE score of previous three years 2021, 2022 and 2023. All further actions of the respondents will be subject to further orders of this Court. "</p> <p>The Board vide letter no. 2894 dated 04.10.2023 informed M.P. Online Limited to take further actions for the recruitment of the final decision of the cases i.e. W.P.No.24972/2023, (Shubhanshu Tripathi Vs. The State of M.P.) W.P.24764/2023 (Satyam Mishra Vs. State of M.P.), W.P.25580/2023 (Satish Kumar Chouksey Vs. State of M.P.) &amp; W.P.25604/2023 (Ajay Kumar Mishra Vs. State of M.P.) also sited before Hon'ble High Court, Jabalpur. In all these cases the reply of MPPCB has already been filed.</p>

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4.	Madhya Pradesh Professional Examination Board (MPPEB)	Board on 24.03.2022 requested the following to MPPEB:		
		<b>Sr.</b>	<b>Designation</b>	<b>Vacant Posts</b>
		1.	Assistant Engineer (Environment)	34
		2.	Assistant Engineer (Computer)	01
		3.	Assistant Legal Officer	02
		4.	Sub-Engineer	07
		5.	Chemist	21
		6.	Laboratory Assistant	17
		In above request, post of Sub Engineer 07, post of Chemist 17 & post of Laboratory Assistant 8 has been recruited during April,2023.		
5.	Madhya Pradesh Professional Examination Board/ M.P. Online Limited, Bhopal	M.P. Pollution Control Board had sent requirement of recruitment to M.P. Professional Examination Board vide letter dated 24/03/2022 for the following posts :		
		<b>S. No</b>	<b>Designation</b>	<b>No. of post</b>
		1.	Assistant Engineer (Environment)	34
				The process of the recruitment is stayed till final disposal of the Writ Petition by Hon'ble High Court of Madhya Pradesh in WP No. 24972/2023 and WP No. 24764/2023.
		2.	Assistant Engineer (Computer)	01
				Not recruited
		3.	Assistant Legal Officer	02
				Communication regarding recruitment recently from MPPEB is awaited.
		4.	Steno Grade-III	02
				Communication regarding recruitment recently from MPPEB is awaited.
		5.	Sub Engineer	07
				All the 18 posts have been filled

  
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		6	Chemist	21	Out of 21 posts, 17 posts are filled. Remaining post shall be filled after recapitate the MPPEB from the waiting list.
		7.	Laboratory Assistant	17	Out of 17 posts, 08 posts are filled. Remaining post shall be filled after recapitate the MPPEB from the waiting list.
		8.	LDC/Telephone Operator	02	Communication regarding recruitment recently from MPPEB is awaited.
		9.	Driver	02	Communication regarding recruitment recently from MPPEB is awaited.
		10.	Laboratory Attendant	07	Communication regarding recruitment recently from MPPEB is awaited.
		11.	Peon/Sweeper/ Guard	11	Communication regarding recruitment recently from MPPEB is awaited.

  
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## Annexure - B

**Information about total sanctioned, filled and vacant posts of officers/employees (Regular and Oursourced) working in Madhya Pradesh Pollution Control Board as on 01/12/2023**

No.	Designation	Sanctioned Post	Working	Ratio Working Staff	Vacant Post	Ratio Vacant/ Sanctioned Staff
1	2	3	4	5	6	7
<b>(A) Administrative Staff :</b>						
1	Director Environment (Administration)	1	1		0	
2	Administrative Officer	1	0		1	
3	Section Officer	1	1		0	
4	Superintendent	1	1		0	
5	Astt. Superintendent	2	2		0	
6	Upper Division Clerk	3	3		0	
7	Lower Division Clerk/Typist	2	2		0	
8	Daftari	1	1		0	
9	Peon	6	6		0	
Total :		18	17	94.44	1	5.56
<b>(B) Ministerial Staff :</b>						
<b>(i) Accounts Staff :</b>						
10	Finance Officer	1	0		1	
11	Section Officer (Audit & Budget)	3	1		2	
12	Section Officer	14	0		14	
13	Staff Officer	2	0		2	
14	Senior Auditor	1	0		1	
15	Sr. Accountant	20	2		18	
16	Accountant	32	13		19	
<b>(ii) Clerical Staff :</b>						
17	Stenographer Grade-1	7	6		1	
18	Stenographer Grade-2	13	5		8	
19	Stenographer Grade-3	21	2		19	
20	Upper Division Clerk	34	22		12	
21	Lower Division Clerk/Typist	89	49		40	
22	Supervisor Grade-1	1	0		1	
23	Supervisor Grade-2 (R.O. Jabalpur)	3	1		2	
24	Mechanic	1	0		1	
25	Driver	113	18		95	
26	Electrician/DG Set Operator	4	2		2	
27	Daftari	38	19		19	
28	Telephone Attendent	1	0		1	
29	Peon/Gatekeeper/ Sweeper	174	90		84	
<b>(iii) Public Relation Staff :</b>						
30	Contact Officer	1	0		1	
31	Librarian	1	0		1	
32	Astt. Public Relation Officer	2	1		1	
33	Publicity Assistant	2	0		2	
<b>(iv) Legal Cell Staff :</b>						
34	Legal Officer	1	0		1	

  
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No.	Designation	Sanctioned Post	Working	Ratio Working Staff	Vacant Post	Ratio Vacant/ Sanctioned Staff
1	2	3	4	5	6	7
35	Assistant Legal Officer	15	0		15	
36	Legal Assistant	15	0		15	
(v)	<b>IT Cell Staff :</b>					
37	Asstt. Engineer (Computer)	1	0		1	
38	Computer Programmer/Operator	4	1		3	
39	Data Assitant Grade-1	2	0		2	
40	Data Assitant Grade-2	2	0		2	
	Total :	618	232	37.54	386	62.46
(C)	<b>Technical Staff :</b>					
41	Director Environment (Technical)*	2	2		0	
42	Chief Engineer (Environment)	4	0		4	
43	Superintending Engineer (Environment)	13	8		5	
44	Superintending Engineer (Mines)	1	0		1	
45	Executive Engineer (Environment)	20	12		8	
46	Assistant Engineer (Environment)	85	4		81	
47	Sub-Engineer	18	18		0	
48	Chief Draftsman	1	0		1	
49	Draftsman	3	1		2	
50	Assistant Draftsman	3	1		2	
51	Tracer	1	1		0	
	Total :	151	47	31.13	104	68.87
(D)	<b>Scientific Staff :</b>					
52	Chief Scientific Officer	6	0		6	
53	Senior Scientific Officer	14	3		11	
54	Chief Chemist	22	6		16	
55	Scientist	89	26		63	
56	Environmental Geological Scientist	1	0		1	
57	Junior Scientist	41	31		10	
58	Chemist	143	37		106	
59	Lab. Assistant/Sampler	49	34		15	
60	Agriculture Assistant	1	1		0	
61	Lab. Attendent	75	24		51	
	Total :	441	162		279	
	<b>Total (A+B+C+D) :</b>	<b>1228</b>	<b>458</b>	<b>37.30</b>	<b>770</b>	<b>62.70</b>

\* One Director Environment is posted as OSD in Environment Department, Govt. of M.P., Bhopal

**(E) Outsource Staff :**

No.	Designation	Working Staff
1	Contract Engineer	19
2	Legal Assistant	3
3	Data Entry Operator	30
4	Sampler/Lab. Assistant	2
5	Driver	40

  
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No.	Designation	Sanctioned Post	Working	Ratio Working Staff	Vacant Post	Ratio Vacant/ Sanctioned Staff
1	2	3	4	5	6	7
6	Peon/Gatekeeper/Sweeper	70				
	<b>Total (E) :</b>	<b>164</b>				

## (F) Working Staff in various projects :

No.	Designation	Working Staff
1	Field Assistant	11
2	J.R.F.	4
3	J.S.A.	4
4	J.L.A.	26
5	Data Entry Operator	1
6	Helper	1
	<b>Total (F) :</b>	<b>47</b>

## (G) Working Staff in IT/ERC through Sedmap (Outsource)

No.	Designation	Working Staff
1	System & Database Architect	2
2	System Software and Database	3
3	Networking Support Engineer	1
	<b>Total (G) :</b>	<b>6</b>
	<b>G.Total (E+F+G) :</b>	<b>217</b>

  
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अधीक्षक



मध्य प्रदेश प्रदूषण नियंत्रण बोर्ड  
पर्यावरण परिसर, ई-5, अरेरा कालोनी, भोपाल- 462016 (म.प्र.)  
Tel: 0755-2464428, 2466191 Fax: 0755-2463742

ई-मेल द्वारा

क्रमांक/...../मॉ.शा./ सा.फा. 08/2023

भोपाल, दिनांक. 20/12/2023

प्रति,

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

विषय :- माननीय राष्ट्रीय हरित अधिकरण, प्रिंसिपल बैंच प्रकरण क्रमांक ओ.ए.  
693/2023 के सम्बन्ध में।

सन्दर्भ :- आपका पत्र क्रमांक/306/के.प्र., दिनांक 15.12.2023

उपरोक्त विषयान्तर्गत सन्दर्भित पत्र के तारतम्य में लेख है कि बोर्ड में 01 केन्द्रीय प्रयोगशाला तथा 10 क्षेत्रीय प्रयोगशालायें वर्तमान में प्रदूषण जांच का कार्य कर रही हैं। उपरोक्त बोर्ड की प्रयोगशालाओं की विस्तृत जानकारी संलग्न कर अग्रिम आवश्यक कार्यवाही हेतु प्रेषित है।

संलग्न:- उपरोक्तानुसार

(डॉ. अभय कुमार सक्सेना)  
वरिष्ठ वैज्ञानिक अधिकारी

**PROFORMA**

INFORMATION REQUIRED FOR COMPLIANCE OF NGT CASE NO. 693/2023 ORDER  
DATED 23.11.2023

**1. General**

- (i) Name of Regional Office : --
- (ii) Name of the Laboratory : Central Laboratory
- (iii) Address
- a) Postal : M.P.Pollution Control Board, Paryavaran Parisar,  
E-5, Arera Colony, Bhopal-16
- b) Telephone : 0755-2464428 Fax E-mail
- c) Fax : 0755-2463742
- d) E-mail : cl\_mppcb@rediffmail.com
- (iv) Year of establishment of  
Laboratory : 1990
- (v) Laboratory Incharge details
- a) Name and Designation : Dr. Alok Saxena, Chief Chemist
- b) Address : M.P.Pollution Control Board, Paryavaran Parisar,  
E-5, Arera Colony, Bhopal-16
- c) Telephone : 0755-2464428
- d) Fax : 0755-2463742
- e) E-mail : cl\_mppcb@rediffmail.com
- (vi) Name of accreditation body(s)/organization i.e. ISO, NABL, GLP, SPCB's, PCC's etc.  
from which the laboratory has been already recognized/accredited, give details.

S. No.	Name of the certification/recognition body/organization	Accreditation / recognition granted for the activities	Environmental Parameter covered	Validity up to
1.	CPCB	Provisions under EPA,1986	Physical,chemical Microbiology, toxicology, air Parameters [source & ambient. Micro Metrological parameters	20/07/2023
2	NABL	ISO -17025:2017	Water & waste water , Ambient air	03/07/2025
3.	Gazette notification dated 3/2/2008	MPPCB	Water & waste water/Air/HW/Noise/-soil/Vehicle exhaust	
4.	B.V.	OHSAS-18001	Occupational health and safety	18/09/2025

2. Infrastructural details of Laboratory: (please enclose brief lay out plan map of laboratory) with organizational chart and laboratory position in there to:

(i) Total floor space of the environmental laboratory (in sq. mtr): Approx 1000

- i. Water Laboratory = Approx 700 Sq. mtr
- ii. Biological & Microbiological Laboratory = Approx 150 Sq. mtr
- iii. Air Laboratory = Approx 100 Sq. mtr

d) Provide scanned photograph of above with layout plan. **Attached**

(ii) Details of major projects undertaken pertaining to environmental studies:

**Attached**

*[Please attach separate sheet, if space is insufficient]*

(iii) Which of the following type of analytical tests are being carried out in the laboratory [please mark Yes (√)/No (x)]:

<input type="radio"/> a) Physical	<input checked="" type="radio"/> (k) Hazardous waste Characterization
b) Inorganics general and nonmetallic√	l) Ambient air√
c) Inorganic (Trace metals) √	m) Source emission√
d) Organics (General) √	n) Air Toxics√
e) Trace Organics√	o) Hazardous Air Pollutants√
f) Microbiological√	p) Volatile Organic Carbon
g) Toxicity√	m) Noise measurement√
h) Biological√	<input checked="" type="radio"/> (n) Meteorological
i) Hazardous waste√	<input checked="" type="radio"/> (o) Vehicular emission/Auto exhaust
j) Soil, sludge, sediment√	

(iv) Laboratory scientists/chemist or officials are fully conversant for sampling, monitoring, preservation and transportation [please tick Yes(√)/No(x)].

(a) Water & wastewater√	(i) Hazardous Air Pollutants analysis√
(b) Hazardous waste√	<input checked="" type="radio"/> (j) Volatile Organic Carbon analysis <i>bc</i>
(c) Solid waste√	(k) Noise monitoring√
(d) Soil√	l) Meteorological monitoring√
(e) Municipal waste√	<input checked="" type="radio"/> (m) Source emission -NA
(f) Biomedical waste√	<input checked="" type="radio"/> (n) Auto exhaust monitoring-NA
(g) Ambient air/fugitive emission√	<input checked="" type="radio"/> (o) On line ambient air quality monitoring -NA ✓
(h) Air Toxics analysis√	

(v) Laboratory scientists/chemists or officials are capable of analyzing desired/ relevant parameters in various types of matrix [please tick [Yes(√)/No (x)]]

- a. Liquid Samples (water & wastewater) ✓
- b. Solid Samples (soil/mud/solid waste/sludge etc.) ✓
- c. Semi-solid samples (sludge/slurry) ✓
- d. Gaseous samples (Ambient air, source emission, vehicular emission) ✓

### 3. LIST OF PARAMETERS BEING ANALYSED FOR WATER & WASTE WATER & SOLID SAMPLES

#### A) Physical Tests : [Please mark Yes(✓)/No (x)]

S. No.	Mandatory parameter	S. No.	Secondary parameter
1.	Conductivity ✓	1.	Flocculation test (Jar test) ✓
2.	Colour ✓	2.	Odour x
3.	pH ✓	3.	Salinity ✓
4.	Fixed & volatile solids ✓	4.	Settleable solids ✓
5.	Total solids ✓	5.	Sludge volume index (SVI) ✓
6.	Total dissolved solids ✓		
7.	Total suspended solids ✓		
8.	Turbidity ✓		
9.	Temperature ✓		
10.	Velocity & discharge Measurement of industrial effluent stream ✓		

#### B) Inorganic [Please mark Yes (✓)/No (x)]

##### (i) General & Non-metallic

S. No.	Mandatory parameter	S. No.	Secondary parameter
1.	Acidity ✓	1.	Bromide
2.	Alkalinity ✓	2.	Carbon dioxide
3.	Ammonical nitrogen ✓	3.	Chlorine demand
4.	Chloride ✓	4.	Iodine
5.	Chlorine residual ✓	5.	Sulphite ✓
6.	Dissolved oxygen ✓	6.	Silica ✓
7.	Fluoride ✓	7.	Cyanide ✓
8.	Total hardness ✓	8.	Sulphide ✓
9.	Total kjehldal nitrogen (TKN) ✓		
10.	Nitrite nitrogen ✓		
11.	Nitrate nitrogen ✓		
12.	Phosphate ✓		
13.	Sulphate ✓		

##### (ii) Trace Metals [Please mark Yes(✓)/No (x)]

S. No.	Mandatory parameter	S. No.	Secondary parameter
1.	Boron (B) ✓	16	Arsenic (As) ✓
2.	Cadmium (Cd) ✓	17	Aluminium (Al) ✓
3.	Calcium (Ca) ✓	18	Beryllium (Be) ✓
4.	Chromium (Cr) Total ✓	19	Barium (Ba) ✓
5.	Chromium (Cr) Hexavalent ✓	20	Lithium (Li) ✓
6.	Copper (Cu) ✓	21	Manganese (Mn) ✓
7.	Iron (Fe) ✓	22	Selenium (Se) ✓
8.	Lead (Pb) ✓	23	Silver (Ag) ✓
9.	Magnesium (Mg) ✓	24	Strontium (Sr) ✓
10.	Mercury (Hg) ✓	25	Tin (Sn) ✓
11.	Nickel (Ni) ✓	26	Antimony (Sb) ✓
12.	Potassium (K) ✓	27	Cobalt (Co) ✓
13.	Sodium (Na) ✓	28	Vanadium (V) ✓
14.	Sodium absorption ratio (SAR) ✓		
15.	Zinc (Zn) ✓		

(C) **Organics (General) and Trace Organics** [Please mark Yes(✓)/No (x)]

S. No.	Mandatory parameter	S. No.	Secondary parameter
1.	Bio-chemical oxygen demand (BOD) ✓	6	Total organic carbon (TOC)
2.	Chemical oxygen demand (COD) ✓	7	Adsorbable organic halide (AOX)
3.	Oil & Grease ✓	8	Surfactants
4.	Phenol ✓	9	Tannin & lignin
5.	Pesticide (each)	10	Poly-chlorinated biphenyl (PCB's) each ✓
	(i) Organo-chlorine (BHC, DDT, Aldrin, Endosulphan) ✓	11	Polynuclear aromatic hydrocarbon (PAH) each ✓
	(ii) Organo nitrogen-phosphorous (Malathion, methyl parathion, Chloropyriphos) ✓	12	Organic Carbon (in solid) ✓
		13	Carbon/Nitrogen ratio ✓

(D) **Microbiological Tests** [Please mark Yes(✓)/No (x)]

S. No.	Mandatory parameter	S. No.	Secondary parameter
1.	Total Coliform ✓	5	Total plate count ✓
2.	Faecal Coliform ✓	6	Enterococcus ✓
3.	Faecal Streptococci ✓	7	Coliphage ✓
4.	E. Coli ✓		

(E) **Toxicological Tests** [Please mark Yes(✓)/No (x)]

S. No.	Mandatory parameter	S. No.	Secondary parameter
1.	Bioassay method for evaluation of toxicity using fish (90% survival of	1.	Bio-accumulation, bio magnification and bio-transformation studies ✓

fish after 96 hrs in 100% effluent) √	2.	Estimation of the effect at tissue level √
	3.	Measurement of toxicity using Daphnia or other organism √
	4.	Measurement of toxicity factor using zebra fish (dimensionless toxicity test) √

**F) Biological Tests [Please mark Yes(√)/No (x)]**

S. No.	Parameter	S. No.	Parameter
1.	Benthic organism identification and count √	5.	Saprobity Index √
2.	Macrophytic identification √	6.	Chlorophyll √
3.	Planktonic identification count √	7.	Primary productivity √
4.	Measurement of various diversity index √	8.	P/R Ratio √

**G) Characterization of Hazardous Waste [Please mark Yes(√)/No (x)]**

S. No.	Parameter
1.	Preparation of Leachate (TCLP extract/water extract) √
2.	Corrosivity √
3.	Ignibility (Flash point) √
4.	Reactivity √
5.	Toxicity √
6.	Measurement of heavy metals/pesticides in the waste/leachate √

**H) Soil/Sludge/Sediment and Solid Waste [Please mark Yes(√)/No (x)]**

S. No.	Mandatory parameter	S. No.	Secondary parameter
1.	Boron √	16.	Ammonia √
2.	Cation Exchange Capacity (CEC) √	17.	Bicarbonate √
3.	Electrical Conductivity (EC) √	18.	Calcium √
4.	Nitrogen available √	19.	Calcium carbonate √
5.	Organic carbon/matter (chemical method) √	20.	Chloride √
6.	pH √	21.	Colour √
7.	Phosphorous (available) √	22.	Exchangeable sodium percentage (ESP) √
8.	Phosphate (ortho) √	23.	Gypsum requirement
9.	Phosphate (total) √	24.	H. Acid
10.	Potassium √	25.	Heavy metal √
11.	SAR in soil extract √	26.	Magnesium √
12.	Sodium √	27.	Mechanical soil analysis
13.	Soil moisture √	28.	Nitrate √
14.	TKN √	29.	Nitrite √
15.	Calorific value √	30.	PAH √
		31.	Pesticide √
		32.	Potash (available)
		33.	Sulphate √
		34.	Sulphur √
		35.	TOC
		36.	Total water soluble salt
		37.	Water holding capacity

#### 4. LIST OF EQUIPMENT FOR WATER / WASTEWATER & SOLID SAMPLES

##### a) LIST OF EQUIPMENT GENERAL ANALYSIS

l) [Note: Please mark Yes (√)/No(x)]

S. No.	Equipment	Yes/No	Nos. available**
<b>BASIC EQUIPMENTS</b>			
1.	Ice Box/s* (2)	yes	10
2.	Filtration assembly* (1)	yes	03
3.	Heating Mantle	yes	02
4.	Stop watch	yes	01
5.	Hot air oven* (2)	yes	03
6.	Hot plate* (2)	yes	02
7.	Muffle furnace* (1)	yes	01
8.	Standard weight	yes	02
9.	Water bath	yes	01
10.	Thermometer/s* (4)	yes	10
11.	Refrigerator/s big size* 300 litres or above (2)	yes	04
<b>SPECIFIC EQUIPMENTS</b>			
1.	Autoclave* (1)	yes	01
2.	Bottom sampler	yes	01
3.	BOD Incubator* (1)	yes	02
4.	Centrifuge* (1)	yes	01
5.	Aquarium for bioassay test* (4)	yes	10
6.	COD Digester with aluminium heating blocks * (1)	yes	01
7.	Colony Counter	yes	01
8.	Depth Sampler	yes	01
9.	Digester with condensers	yes	01
10.	Digestion chamber* (1)	yes	01
11.	Dissolved oxygen sampler	NO	-
12.	Flocculator ( Jar testing apparatus)	yes	01
13.	Flow meter	yes	01
14.	Incubator for bacteriological test* (2)	yes	03
15.	Laminar flow* (1)	yes	02
16.	Magnetic Stirrer with hot plate* (2)	yes	02
17.	Mechanical Shaker *(1)	yes	01
18.	Microwave digester	yes	01
19.	TKN Analyzer semi automatic with aluminum block digester	yes	01
20.	Ultrasonic water bath	yes	01
21.	Vacuum pump* (1)	yes	02
22.	Water purification / distillation assembly* (1)	yes	03

23.	Ekman Dredge	yes	01
24.	Water sampler	yes	01
<b>S. No.</b>	<b>Equipment</b>	<b>Yes/No</b>	<b>Nos. available**</b>
25.	Oil & Grease sampler		
26.	Water Testing kit	yes	01
27.	Chloroscope for residual chlorine	yes	01
28.	Any other equipment (please attach details on separate sheet)		

## b) LIST OF INSTRUMENTS WATER/WASTE WATER ANALYSIS

S. No.	Name of instrument	Yes/No	Total Nos. **																												
<b>BASIC INSTRUMENTS</b>																															
1.	Analytical Balance +* (1) 1 mg	yes	04																												
2.	Conductivity Meter* (1)	yes	01																												
3.	Dissolved oxygen meter	NO	—																												
4.	pH Meter with combined glass electrode* (1)	yes	01																												
5.	Turbidity meter* (1)	yes	01																												
<b>SPECIFIC INSTRUMENTS</b>																															
1.	Alpha/Beta Radioactivity Counter	No	00																												
2.	Atomic Absorption Spectrophotometer (Flame) with the following cathode lamps + (√ available HCL)* (1)	yes	02																												
	<table border="0" style="width: 100%;"> <tr> <td>(i) Aluminium ✓</td> <td>(ii) Antimony ✓</td> </tr> <tr> <td>(iii) Arsenic ✓</td> <td>(iv) Barium ✓</td> </tr> <tr> <td>(v) Barium ✓</td> <td>(vi) Boron ✓</td> </tr> <tr> <td>(vii) Cadmium ✓</td> <td>(viii) Calcium ✓</td> </tr> <tr> <td>(ix) Chromium ✓</td> <td>(x) Copper ✓</td> </tr> <tr> <td>(xi) Iron ✓</td> <td>(xii) Lithium ✓</td> </tr> <tr> <td>(xiii) Lead ✓</td> <td>(xiv) Magnesium ✓</td> </tr> <tr> <td>(xv) Manganese ✓</td> <td>(xvi) Mercury ✓</td> </tr> <tr> <td>(xvii) Nickel ✓</td> <td>(xviii) Potassium *</td> </tr> <tr> <td>(xix) Selenium ✓</td> <td>(xx) Silver ✓</td> </tr> <tr> <td>(xxi) Sodium *</td> <td>(xxii) Strontium ✓</td> </tr> <tr> <td>(xxiii) Tin ✓</td> <td>(xxiv) Cobalt ✓</td> </tr> <tr> <td>(xxv) Vanadium ✓</td> <td>(xxvi) Zinc ✓</td> </tr> <tr> <td></td> <td>(xxvii) Other, pl. specify</td> </tr> </table>	(i) Aluminium ✓	(ii) Antimony ✓	(iii) Arsenic ✓	(iv) Barium ✓	(v) Barium ✓	(vi) Boron ✓	(vii) Cadmium ✓	(viii) Calcium ✓	(ix) Chromium ✓	(x) Copper ✓	(xi) Iron ✓	(xii) Lithium ✓	(xiii) Lead ✓	(xiv) Magnesium ✓	(xv) Manganese ✓	(xvi) Mercury ✓	(xvii) Nickel ✓	(xviii) Potassium *	(xix) Selenium ✓	(xx) Silver ✓	(xxi) Sodium *	(xxii) Strontium ✓	(xxiii) Tin ✓	(xxiv) Cobalt ✓	(xxv) Vanadium ✓	(xxvi) Zinc ✓		(xxvii) Other, pl. specify	By flame photometry	Rest of the metals performed by ICP-MS
(i) Aluminium ✓	(ii) Antimony ✓																														
(iii) Arsenic ✓	(iv) Barium ✓																														
(v) Barium ✓	(vi) Boron ✓																														
(vii) Cadmium ✓	(viii) Calcium ✓																														
(ix) Chromium ✓	(x) Copper ✓																														
(xi) Iron ✓	(xii) Lithium ✓																														
(xiii) Lead ✓	(xiv) Magnesium ✓																														
(xv) Manganese ✓	(xvi) Mercury ✓																														
(xvii) Nickel ✓	(xviii) Potassium *																														
(xix) Selenium ✓	(xx) Silver ✓																														
(xxi) Sodium *	(xxii) Strontium ✓																														
(xxiii) Tin ✓	(xxiv) Cobalt ✓																														
(xxv) Vanadium ✓	(xxvi) Zinc ✓																														
	(xxvii) Other, pl. specify																														
3.	Atomic Absorption Spectrophotometer with Graphite Furnace and Hydride Generation System	yes	02																												
4.	Organic Halogen Analyzer (AOX/TOX)	NO	00																												
5.	Binocular Microscope	yes	02																												
6.	Flame Photometer* (1)	yes	01																												
7.	Gas Chromatograph with following detector*** (1)	yes	02																												
	<ul style="list-style-type: none"> <li>- ECD-NPD</li> <li>- FID-TID</li> <li>- FPD</li> <li>- Other detector ECD &amp; FID</li> </ul>	yes	01																												
8.	Gas Chromatograph with Mass Spectrometer (GC-MS)	yes	02																												
9.	High Pressure Liquid Chromatograph (HPLC)	NO	00																												
10.	Ion Chromatograph	yes	01																												
11.	Inductively Coupled Plasma (ICP) Spectrometer	yes	01																												
12.	Mercury Analyzer Digital* (1)	yes	01																												
13.	Portable Analyzer Kit (DO, pH, Temp. Cond.)	yes	01																												
14.	Precision Balance weighing up to 1 mg* (water / air)	yes	01																												
15.	Rotary Evaporator* (1)	yes	01																												
16.	Spectrophotometer (Visible)* or Ultraviolet & visible* (1)	yes	02																												
17.	Stereo Microscope	yes	03																												
18.	Total Organic Carbon Analyzer	NO	00																												

19.	Any other instruments (Please enclose details on separate sheet)		
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**c) LIST OF SPECIFIC EQUIPMENTS/INSTRUMENTS FOR HAZARDOUS WASTE ANALYSIS**

[Note: Please mark Yes (√) /No (x)]

S. No.	Instruments	Nos. Available
1.	Bomb colorimeter	01
2.	Elemental analyzer	01
3.	Flash point apparatus	01
4.	Moisture content meter	01
5.	Rotary evaporator	01
6.	Toxicity characteristic leaching procedure (TCLP) extractor	02
7.	Toxic Gas analyzer	
8.	X-ray fluorescence (XRF) Spectrometer	—
9.	Zero head space extractor (ZHE)	02
10.	Any other equipment (please attach details on separate sheet)	

**d) MAINTENANCE CONTRACT STATUS OF IMPORTANT SOPHISTICATED INSTRUMENTS**

[Note: Please mark Yes (√)/No (x)]

S. No.	Name of the instrument	Repair job undertaken on Annual Maintenance contract / emergency call basis	Whether sufficient spares available
1.	AAS (Flame & Flameless)	Under AMC	yes
2.	AOX	Emergency call basis	yes
3.	Total Organic Carbon Analyzer	Emergency call basis	yes
4.	Gas Chromatograph	Under AMC	yes
5.	Water purification system	Under AMC	yes
6.	Analytical balance	Emergency call basis	yes
7.	Specific ion meter	Emergency call basis	yes
8.	Mercury analyzer	Under AMC	yes
9.	UV-Visible spectrophotometer	Under AMC	yes
10.	Alpha/Beta Radioactivity Counter	-	-
11.	Any other	-	-

**( e ) REFERENCE MATERIAL (RMS) AND CERTIFIED REFERENCE MATERIAL (CRMS)**

S. No.	Parameters	Availability of RMS/CRMS	
		(√/X)	Nos. of standards
1.	Trace Metals	√	
2.	Organo-chlorine pesticides	√	
3.	Organo-nitrogen phosphorous pesticides	√	
4.	Polychlorinated Biphenyls (PCB's)	X	
5.	Polycyclic aromatic hydrocarbon (PAH)	√	
6.	Benzene, Ethylene, Toluene & Xylene	√	
7.	Dioxins and Furans	X	
8.	Any other (please attach details on separate sheet)		

**f) LIST OF GLASS APPARATUS AND DISTILLATION ASSEMBLIES**

[Note: Please mark Yes (√)/No (x)]

S. No.	Particulars	Yes or No	Total nos. available
1.	Fluoride distillation assembly	yes	01
2.	Cyanide distillation assembly	yes	01
3.	Ammonia distillation assembly	yes	01
4.	Water distillation assembly	yes	01
5.	Soxhlet extraction assembly	yes	02
6.	Arsenic estimation assembly	yes	01
7.	Phenol distillation assembly	yes	01
8.	Any other (please enclose details on separate sheet)		

**(5) AIR QUALITY PARAMETERS**

Facilities available [Please mark Yes (√)/No (x)]

**A. Ambient Air / Fugitive Emissions**

S. No.	Group of parameter	Yes/No (√ / x)	Adopted method
<b>(i) Mandatory Parameters</b>			
1.	Nitrogen dioxide as NO <sub>2</sub>	√	IS :5182 P[6]2017
2.	Sulphur dioxide (SO <sub>2</sub> )	√	IS:5182P2]2017
3.	Total suspended particulate matter	√	Std method APHA[AIR]
4.	Respirable suspended particulate matter (PM <sub>10</sub> )	√	IS:5182P[23]2017
<b>(ii) Secondary Parameters</b>			
1.	Ammonia	√	Std method
2.	Carbon monoxide	√	IS:5182P[10]2014
3.	Chlorine	√	IS5182P[19]2014
4.	Fluoride	√	IS 5182P[13]2014
5.	Non methane hydrocarbon		IS 5182P[21]2017

6.	Lead	√	IS 5182P[22]2014
7.	Methane	√	Std method
8.	Ozone	√	Std method
9.	Benzene Toluene Xylene (BTX)	√	IS:5182 P11]2014
10.	Polycyclic aromatic hydrocarbon (PAH) Benzo- a- pyrine & others	√	IS :5182 P[12]2014
11.	PM <sub>2.5</sub>	√	CPCB Guidelines
12.	Volatile Organics Carbon	√	Std method

### B. Stack gases/source emission

S. No.	Group of parameter	Yes/No (√ / x)	Adopted method
<b>(i)</b>	<b>Mandatory Parameters</b>		
1.	Particulate matter	√	IS :11255P[1]2014
2.	Sulphur dioxide	√	IS:11255P[2]2014
3.	Velocity & flow	√	IS:11255P[3]2018
4.	Carbon dioxide	√	Standard method
5.	Carbon monoxide	√	Standard method
6.	Temperature	√	Standard method
7.	Oxygen	√	Standard method
8.	Oxides of nitrogen	√	IS:11255P[7]2017
<b>(ii)</b>	<b>Secondary Parameters</b>		
1.	Acid mist	√	Standard method
2.	Ammonia	√	IS:11255P[6]2014
3.	Chlorine	√	Standard method
4.	Fluoride (Particulate)	√	Standard method
5.	Fluoride (Gaseous)	√	IS:11255P[5]2014
6.	Hydro-chloric acid	√	Standard method
7.	Total Hydro carbon		Standard method
8.	Hydrogen Sulphide	√	IS:11255P[4]2017
9.	Carbon disulphide	√	IS:11255P[4]2017
10.	Mercaptan		

### C. Noise level

S. No.	Group of parameter	Yes/No	Adopted method
<b>(i)</b>	<b>Mandatory Parameters</b>		
1.	Noise level measurement (20 to 140 dba)	yes	IS code
2.	Ambient Noise & Source specific noise	Yes	IS code
<b>(i)</b>	<b>Mandatory Parameters</b>		
1.	Noise level measurement (20 to 140 dba)	Repeat	
2.	Ambient Noise & Source specific noise	Repeat	
3.	Any other (please attach details on separate sheet)	do can	

### C. Meteorological Monitoring

S. No.	Group of parameter	Yes/No	Adopted method
<b>(i)</b>	<b>Mandatory Parameters</b>		
1.	Ambient Temperature	√	Whether monitoring instrument
2.	Wind direction	√	--do--
3.	Wind speed	√	---do--
4.	Relative Humidity	√	--do--
<b>(ii)</b>	<b>Secondary Parameters (Minimum</b>		

	required at least one parameter)		
1.	Solar radiation	√	instrumentation
2.	Rain fall	√	---do--

### E. Vehicular Emission Monitoring

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Carbon monoxide	No	
2.	Smoke Density	No	
3.	Hydrocarbon	No	
(ii)	<b>Secondary Parameters (Optional)</b>		
1.	Oxides of Nitrogen	No	

Any other (please attach details on separate sheet)

## 6. LIST OF INSTRUMENTS REQUIRED FOR AIR MONITORING

### LIST OF EQUIPMENT/INSTRUMENTS

[Please mark Yes (√)/No (x)]

S. No.	Instrument	Yes/No	If yes, give Total Nos. **
1.	BTX analyzer (PID/FID detector)	yes	01
2.	BTX calibrator	-	
3.	Charcoal Tubes	-	
4.	CO Analyzer (Non-dispersive Infrared principle)	yes	01
5.	Detector Tubes with Pump of different pollutants (Please specify details)	Draggers tubes With detection tubes	01
6.	Dust analyzer (Beta Attenuation/TOEM)	04Y	04
7.	Exhaust CO/HC analyzer	yes	01
8.	Flue gas analyzer	yes	01
9.	Gas Chromatograph with Air sampling port, FID & PFPD detectors	Yes	02 [GC-MS]
10.	Handy sampler for gaseous monitoring* (2)		
11.	High Volume sampler with flow controller (4)		
12.	Low flow pump		
13.	Meteorological sensors with mast (WS, WD, Temp., Humidity)* (1)	yes	01
14.	Micro balance (Readability 1 µg)	yes	01
15.	Multi calibration system	-	
16.	Multi channel recorder	-	
17.	Multi calibration kit (portable)	-	
18.	Noise level meter* (2)	yes	02
19.	NO-NO <sub>2</sub> -Nox Analyzer (Chemiluminescence based)	Y	04
20.	Ozone analyzer (Ultraviolet)	Y	04
21.	Permeation tubes for calibration	Y	04
22.	RSPM sampler with flow controller/brush less motor + calibration kit* (4)	yes	10
23.	Smoke density meter	yes	01
24.	SO <sub>2</sub> Analyzer (Pulsed Fluorescence based)	Y	04
25.	Soap bubble meter CCA 2114-2	Y	01
26.	Stack monitoring kit with High Temp. Probes* (2)	yes	02
27.	Toddler Bags	yes	10
28.	Wet gas meter		

29.	Any other (please specify)		
-----	----------------------------	--	--

**LIST OF INFRASTRUCTURAL EQUIPMENT/ITEMS FOR AIR ANALYSIS**

[Please mark Yes (√)/No (x)]

S. No.	Item	Yes/No	If yes, give Total Nos.**
1.	Air conditioner (split type)	yes	18
2.	Air Conditioner (Window type)	yes	01
3.	Breathing apparatus <i>DHSAS unit</i>	<i>Yes</i>	
4.	Cold room for sample storage	yes	01
5.	Computer with printer	yes	12
6.	Constant voltage transformer	yes	02
7.	Face shield and helmet	yes	01
8.	Gas mask	yes	01
9.	Refrigerator (frost free, CFC free)	yes	04
10.	Tool Kit (Electrical & Mechanical)	yes	05
11.	Uninterrupted power supply (UPS) system	yes	05
12.	First aid box	yes	01
13.	Trolley for sample transportation	yes	01
14.	Fume Hood	yes	01
15.	Exhaust System	yes	05
16.	Fire Extinguisher	yes	16
17.	Electricity Generator	yes	01
18.	Gas Cylinder Trolleys	yes	01
19.	Any other (please specify)		

**(8) Budgetary information \***

SNo	Budget	[year 2022-23]	[year 2023-24]
1.	Sanctioned		
2.	Expenditure		

\* May be available with Account Section

**(9) Manpower Information**

SNo	Designation	Number of Posts in working	Remarks
1.	Chief Scientific Officer	Nil	
2.	Senior Scientific Officer	One	
3.	Chief Chemist	One	
4.	Scientist	Four	
5.	Jr Scientist	Two	
6.	Chemist	Four	
7.	Sampler	Nil	
8.	Laboratory assistant	One	
9.	Laboratory attendant	Two	
10.	Research Fellows	Two	
11.	Field assistant	Three	
12.	NAMP Staff	Nil <i>-1392</i>	
13.	NCAP Staff	Nil <i>-1996 01</i>	
14.	Contractual Staff	Five	
15.	Others	One	

Note: (if any other information )

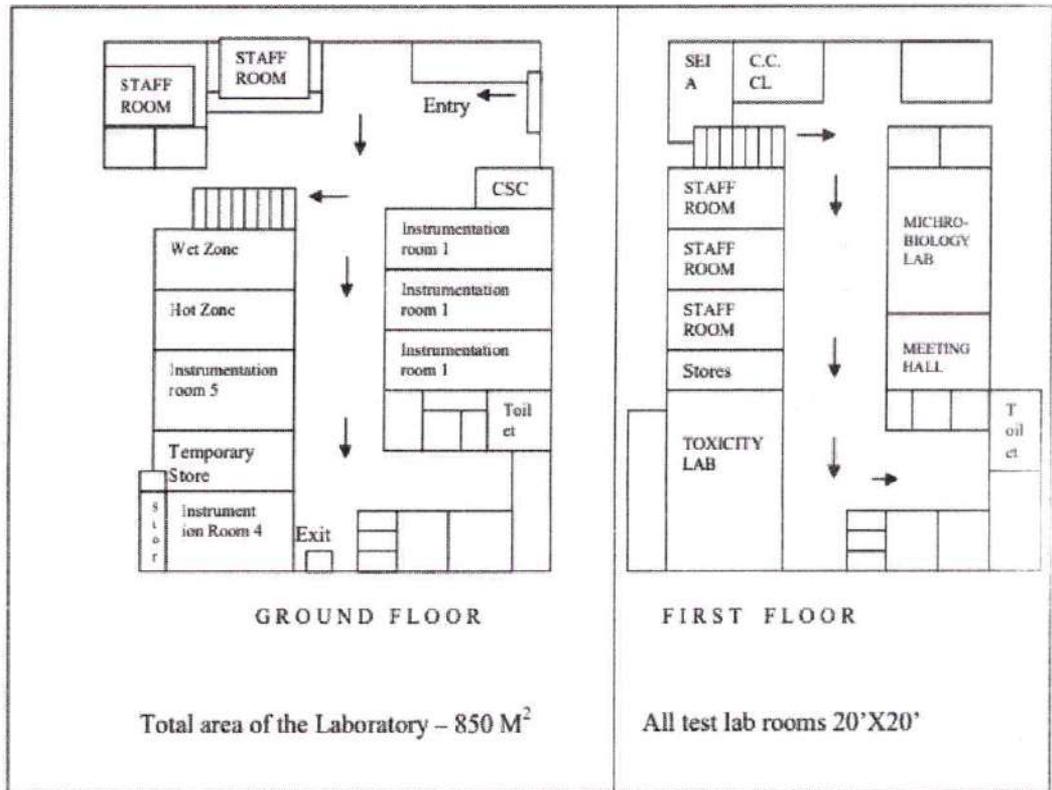
Bhopal

Dr. Alok Saxena  
Chief Chemist

Name of Place

Name, Designation & Signature of Laboratory In charge

Lay Out Plan  
Central Laboratory,  
Mp Pollution Control Board Bhopal



## Ongoing Projects

### i Comprehensive Environmental Monitoring of Dewas Industrial areas of MP

The existing tendency of industrialization and urbanization in developing countries has an enormous impact on natural and man-made environments. Environmental attitudes for suitable protection of environment are vital for next generations and it has attracted authorities' attention. In MP most of the industrial area are established before 20-25 years, In this regard, the MPPCB has proposed to undertake the comprehensive study to assess the environmental pollution of the industrial areas and results shall be depicted on maps using special tools. Environmental components proposed to be focused during this study are:

- Air Environment (Meteorology, Ambient Air Quality, Noise Levels, Traffic Pattern, etc.)
- Water Environment (Quality of Surface and Groundwater sources)
- Land Environment (Geology, Hydrogeology, Land use, Solid Waste generation and characteristics)
- Ecological Environment (Terrestrial and Aquatic Flora & Fauna)
- Socio-Economic Environment (Demographic profile, Occupational structure,.

Therefore in the year 2023-24 environmental study of Dewas industrial area is proposed to be undertaken.

### ii Bio-monitoring of Rivers of MP

Bio-monitoring is the introduction of biological variables for assessment of the structural and functional aspects of aquatic ecosystems Bio-monitoring can be used as a cost-effective means for supplementing the physico-chemical techniques. Biomonitoring can help in determining the impacts on aquatic ecosystem due to various reasons including the following:

- Non-availability of water in non-monsoon periods;
- Low oxygen conditions and eutrophication;
- High fecal coliforms content;
- Presence of heavy metals;
- Elimination of sensitive species.

Aquatic organisms are subject to pollutions in the stream as it flows by, day or night. Consequently, the health of the organisms reflects the quality of the water they live in. If the pollution levels reach a critical concentration, certain organisms will die, migrate away, or fail to reproduce, eventually leading to the disappearance of those species at the polluted site. Therefore in the year 2023-24 bio-monitoring of rivers of MP is proposed to be undertaken.

### iii Study on Toxicity of industrial effluent of MP :

Toxicity is one of the summary parameter which broadly gives information regarding nature of sample, which helps in decision making.

Fish is terminal member of aquatic food chain. Fishes are very sensitive to change in their environment. Therefore lethal effect of waste water is tested on fish. Standard procedure is adopted to observe the effect on fish after period of 48 hrs and 96 hrs. Toxicity test is a boon in water quality analysis wherein assessment and degree of pollution is estimated.

Toxicity on any waste is essentially a function of dose and length of exposure. The result of these test are used for establishing, predicting and deriving the maximum permissible concentration at which the toxicants may be present in the environment without damaging its biota. In the proposed study experiments on industrial waste on fishes is to be carried out.

### iv Study of surfactants in domestic sewer of Bhopal city:-

in domestic sewage . Surfactants are widely used in synthetic detergents, personnel care products [soap , shampoo, tooth paste] and house hold products [ laundry detergents, dishwashing liquids, spray cleaner etc]. Surfactants are comprises of four major types viz- anionic, cationic, non ionic and amphoteric . Research study reveals that linear chain material [Linear alkyl benzene sulfonate (LAS)] are more toxic than branched compounds [Branched alkyl benzene sulfonate(ABS)] , however the linear compound biodegrades far more quickly, making it the safer choice over time. It is biodegraded rapidly under aerobic conditions with a half-life of approximately 1–3 weeks; oxidative degradation initiates at the alkyl chain. Under anaerobic conditions it degrades very slowly or not at all, causing it to exist in high concentrations in sewage sludge.

Proposed study is undertaken to characterize the domestic sewage of major nallas of Bhopal city covering the habitat of house hold sectors, industrial sector, medical sector and commercial sector along with the inlet and outlet of major STPs of the city, to assess the quality of domestic waste water w.r.t physico-chemical parameters, metals and surfactants

**PROFORMA**

INFORMATION REQUIRED FOR COMPLIANCE OF NGT CASE NO. 693/2023 ORDER  
DTAED 23.11.2023

## 1. General

(i) Name of Regional Office : M.P.Pollution Control Board, Mandideep Distt.-  
Raisen (M.P)

(ii) Name of the Regional Laboratory : Mandideep Distt -Raisen (M.P)

## (iii) Address

a) Postal : Regional Office  
M.P.Pollution Control Board,  
Plot No. 28, C-Sector New Industrial Area  
Mandideep Distt.- Raisen (M.P)

b) Telephone : 07480-292564

c) Fax : \_\_\_\_\_

d) E-mail : rolabmandideep@gmail.com

(iv) Year of establishment of  
laboratory : 2021

(v) Laboratory Incharge details

a) Name and Designation P.C.Uchariya, Lab Incharge

b) Address : Regional Office  
M.P.Pollution Control Board,  
Plot No. 28, C-Sector New Industrial Area  
Mandideep Distt.- Raisen (M.P)

c) Telephone: 9424935067 Fax \_\_\_\_\_ E-mail rolabmandideep@gmail.com

- (vi) Name of accreditation body(s)/organization i.e. ISO, NABL, GLP, SPCB's, PCC's etc. from which the laboratory has been already recognized/accredited, give details.

S. No.	Name of the certification/recognition body/organization	Accreditation / recognition granted for the activities	Environmental Parameter covered	Validity up to
1	NA	NA	NA	NA

2. Infrastructural details of Laboratory: (please enclose brief lay out plan map of laboratory) with organizational chart and laboratory position in there to:

(i) Total floor space of the environmental laboratory (in sq. mtr): As per Enclosure-A

a) Water Laboratory = Sq. mtr

b) Biological & Microbiological Laboratory = Sq. mtr

c) Air Laboratory = Sq. mtr

d) Provide scanned photograph of above with layout plan.

(ii) Details of major projects undertaken pertaining to environmental studies:

*[Please attach separate sheet, if space is insufficient] - Nil*

(iii) Which of the following type of analytical tests are being carried out in the laboratory [please mark Yes (√)/No (x)]:

- |   |                                       |
|---|---------------------------------------|
| √a) Physical                            | x k) Hazardous waste Characterization |
| √b) Inorganics general and non metallic | √l) Ambient air                       |
| √c) Inorganic (Trace metals)            | √m) Source emission                   |
| √d) Organics (General)                  | x n) Air Toxics                       |
| x e) Trace Organics                     | x o) Hazardous Air Pollutants         |
| √f) Microbiological                     | x p) Volatile Organic Carbon          |
| x g) Toxicity                           | √m) Noise measurement                 |
| x h) Biological                         | √n) Meteorological                    |
| x i) Hazardous waste                    | √o) Vehicular emission/Auto exhaust   |
| x j) Soil, sludge, sediment             |                                       |

(iv) Laboratory scientists/chemist or officials are fully conversant for sampling, monitoring, preservation and transportation [please tick Yes(√)/No(x)].

- |                          |   |
|--------------------------|---|
| (a) Water & wastewater √ | (i) Hazardous Air Pollutants analysis x |
| (b) Hazardous waste x    | (j) Volatile Organic Carbon analysis x  |
| (c) Solid waste x        | (k) Noise monitoring √                  |

- (d) Soil x
- (e) Municipal waste x
- (f) Biomedical waste x
- (g) Ambient air/fugitive emission
- (h) Air Toxics analysis x
- (l) Meteorological monitoring x
- (m) Source emission
- (n) Auto exhaust monitoring x
- (o) On line ambient air quality monitoring

(v) Laboratory scientists/chemists or officials are capable of analyzing desired/ relevant parameters in various types of matrix [please tick [Yes()/No (x)]]

- a. Liquid Samples (water & wastewater) Yes()
- b. Solid Samples (soil/mud/solid waste/sludge etc.) No (x)
- c. Semi-solid samples (sludge/slurry) No (x)
- d. Gaseous samples (Ambient air, source emission, vehicular emission) Yes()

**3. LIST OF PARAMETERS BEING ANALYSED FOR WATER & WASTE WATER & SOLID SAMPLES**

A) Physical Tests : [Please mark Yes()/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Conductivity <input checked="" type="checkbox"/>	11.	Flocculation test (Jar test) x
2.	Colour x	12.	Odour <input checked="" type="checkbox"/>
3.	pH <input checked="" type="checkbox"/>	13.	Salinity x
4.	Fixed <input checked="" type="checkbox"/>	14.	Settleable solids x
5.	Total solids <input checked="" type="checkbox"/>	15.	Sludge volume index (SVI) x
6.	Total dissolved solids <input checked="" type="checkbox"/>		
7.	Total suspended solids <input checked="" type="checkbox"/>		
8.	Turbidity <input checked="" type="checkbox"/>		
9.	Temperature <input checked="" type="checkbox"/>		

10.	Velocity & discharge Measurement of industrial effluent stream x		
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B) Inorganic [Please mark Yes (✓)/No (x)]

(i) General & Non-metallic

S. No.	Parameter	S. No.	Parameter
✓ 1.	Acidity x	14.	Bromide x
2.	Alkalinity ✓	15.	Carbon dioxide x
3.	Ammonical nitrogen ✓	16.	Chlorine demand x
4.	Chloride ✓	17.	Iodine x
5.	Chlorine residual x	18.	Sulphite x
6.	Dissolved oxygen ✓	19.	Silica x
7.	Fluoride ✓	20.	Cyanide x
8.	Total hardness ✓	21.	Sulphide x
9.	Total kjehldal nitrogen (TKN)		
10.	Nitrite nitrogen ✓		
11.	Nitrate nitrogen ✓		
12.	Phosphate ✓		
13.	Sulphate ✓		

(ii) Trace Metals [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Boron (B) x	16.	Arsenic (As) x
2.	Cadmium (Cd) x	17.	Aluminium (Al) x
3.	Calcium (Ca) √	18.	Beryllium (Be) x
4.	Chromium (Cr) Total x	19.	Barium (Ba) x
5.	Chromium (Cr) Hexavalent x	20.	Lithium (Li) x
6.	Copper (Cu) x	21.	Manganese (Mn) x
7.	Iron (Fe) x	22.	Selenium (Se) x
8.	Lead (Pb) x	23.	Silver (Ag) x
9.	Magnesium (Mg) √	24.	Strontium (Sr) x
10.	Mercury (Hg) x	25.	Tin (Sn) x
11.	Nickel (Ni) x	26.	Antimony (Sb) x
12.	Potassium (K) √	27.	Cobalt (Co) x
13.	Sodium (Na) √	28.	Vanadium (V) x
14.	Sodium absorption ratio (SAR) x		
15.	Zinc (Zn) x		

[x Samples sent to Central Lab, Bhiwal for analysis of additional parameters]

(C) Organics (General) and Trace Organics [Please mark Yes(√)/No (x) and give details at Appendix J for Trace organics]

S. No.	Parameter	S. No.	Parameter
1.	Bio-chemical oxygen demand (BOD) √	6.	Total organic carbon (TOC) x
2.	Chemical oxygen demand (COD) √	7.	Adsorbable organic halide (AOX) x

3.	Oil & Grease x	8.	Surfactants x
4.	Phenol x	9.	Tannin & lignin x
5.	Pesticide (each) x	10.	Poly-chlorinated biphenyl (PCB's) each x
	(i) Organo-chlorine (BHC, DDT, Aldrin, Endosulphan)	11.	Polynuclear aromatic hydrocarbon (PAH) each x
	(ii) Organo nitrogen-phosphorous (Malathion, methyl parathion, Chloropyriphos)	12.	Organic Carbon (in solid) x
		13.	Carbon/Nitrogen ratio x

D) Microbiological Tests [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Total Coliform √	5.	Total plate count x
2.	Faecal Coliform √	6.	Enterococcus x
3.	Faecal Streptococci √	7.	Coliphage x
4.	E. Coli x		

E) Toxicological Tests [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent)	1.	Bio-accumulation, bio magnification and bio-transformation studies x
		2.	Estimation of the effect at tissue level x
		3.	Measurement of toxicity using Daphnia or other organism x
		4.	Measurement of toxicity factor using zebra fish (dimensionless toxicity test √

F) Biological Tests [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Benthic organism identification and count x	5.	Saprobity Index x
2.	Macrophytic identification x	6.	Chlorophyll x
3.	Planktonic identification count x	7.	Primary productivity x
4.	Measurement of various diversity index x	8.	P/R Ratio x

G) Characterization of Hazardous Waste [Please mark Yes(√)/No (x)]

S. No.	Parameter
1.	Preparation of Leachate (TCLP extract/water extract) x
2.	Corrosivity x
3.	Ignibility (Flash point) x
4.	Reactivity x
5.	Toxicity x
6.	Measurement of heavy metals/pesticides in the waste/leachate x

H) Soil/Sludge/Sediment and Solid Waste [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Boron x	16	Ammonia x
2.	Cation Exchange Capacity (CEC) x	17	Bicarbonate x
3.	Electrical Conductivity (EC) x	18	Calcium x

S. No.	Parameter	S. No.	Parameter
4.	Nitrogen available X	19	Calcium carbonate X
5.	Organic carbon/matter (chemical method) X	20	Chloride X
6.	pH X	21	Colour X
7.	Phosphorous (available) X	22	Exchangeable sodium percentage (ESP) X
8.	Phosphate (ortho) X	23	Gypsum requirement X
9.	Phosphate (total) X	24	H. Acid X
10.	Potassium X	25	Heavy metal X
11.	SAR in soil extract X	26	Magnesium X
12.	Sodium X	27	Mechanical soil analysis X
13.	Soil moisture X	28	Nitrate X
14.	TKN X	29	Nitrite X
15.	Calorific value X	30	PAH X
		31	Pesticide X
		32	Potash (available) X
		33	Sulphate X
		34	Sulphur X
		35	TOC X
		36	Total water soluble salt X
		37	Water holding capacity X

## 4. LIST OF INSTRUMENTS FOR WATER, WASTEWATER &amp; SOLID SAMPLES

## a) LIST OF EQUIPMENT GENERAL ANALYSIS

[Note: Please mark Yes (√)/No(x)]

S. No.	EQUIPMENT	Yes/No	Nos. available**
<b>BASIC EQUIPMENTS</b>			
1.	Ice Box/s* (2)	Yes	05
2.	Filtration assembly* (1)	No	
3.	Heating Mantle	No	
4.	Stop watch	No	
5.	Hot air oven* (2)	Yes	02
6.	Hot plate* (2)	No	
7.	Muffle furnace* (1)	Yes	01
8.	Standard weight	No	
9.	Water bath	No	
10.	Thermometer/s* (4)	Yes	02
11.	Refrigerator/s big size* 300 litres or above (2)	No	
<b>SPECIFIC EQUIPMENTS</b>			
1.	Autoclave* (1)	Yes	01
2.	Bottom sampler	No	
3.	BOD Incubator* (1)	Yes	02
4.	Centrifuge* (1)	Yes	
5.	Aquarium for bioassay test* (4)	Yes	06
6.	COD Digester with aluminium heating blocks * (1)	Yes	02
7.	Colony Counter	No	
8.	Depth Sampler	No	
9.	Digester with condensers	No	
10.	Digestion chamber* (1)	No	
11.	Dissolved oxygen sampler	No	
12.	Flocculator ( Jar testing apparatus)	No	
13.	Flow meter	No	
14.	Incubator for bacteriological test* (2)	Yes	02
15.	Laminar flow* (1)	Yes	01

S. No.	EQUIPMENT	Yes/No	Nos. available**
16.	Magnetic Stirrer with hot plate* (2)	No	
17.	Mechanical Shaker *(1)	No	
18.	Microwave digester	No	
19.	TKN Analyzer semi automatic with aluminum block digester	Yes	01
20.	Ultrasonic water bath	No	
21.	Vacuum pump* (1)	No	
22.	Water purification / distillation assembly* (1)	No	
23.	Ekman Dredge	No	
24.	Water sampler	No	
25.	Oil & Grease sampler	No	
26.	Water Testing kit	Yes	01
27.	Chloroscope for residual chlorine	No	
28.	Any other equipment (please attach details on separate sheet)	No	

## (b) LIST OF INSTRUMENTS WATER/WASTE WATER ANALYSIS

S. No.	Name of instrument	Yes/No	Total Nos. **
<b>BASIC INSTRUMENTS</b>			
1.	Analytical Balance +* (1) 1 mg	Yes	02
2.	Conductivity Meter* (1)	Yes	01
3.	Dissolved oxygen meter	No	
4.	pH Meter with combined glass electrode* (1)	Yes	01
5.	Turbidity meter* (1)	No	
<b>SPECIFIC INSTRUMENTS</b>			
1.	Alpha/Beta Radioactivity Counter	No	
2.	Atomic Absorption Spectrophotometer (Flame) with the following cathode lamps + (✓ available HCL)* (1)	No	
	(i) Aluminium	(ii) Antimony	
	(iii) Arsenic	(iv) Barium	
	(v) Barium	(vi) Boron	

	(vii) Cadmium	(viii) Calcium		
	(ix) Chromium	(x) Copper		
	(xi) Iron	(xii) Lithium		
	(xiii) Lead	(xiv) Magnesium		
	(xv) Manganese	(xvi) Mercury		
	(xvii) Nickel	(xviii) Potassium		
	(xix) Selenium	(xx) Silver		
	(xxi) Sodium	(xxii) Strontium		
	(xxiii) Tin	(xxiv) Cobalt		
	(xxv) Vanadium	(xxvi) Zinc (xxvii) Other, pl. specify		
3.	Atomic Absorption Spectrophotometer with Graphite Furnace and Hydride Generation System		No	
4.	Organic Halogen Analyzer (AOX/TOX)		No	
5.	Binocular Microscope		No	
6.	Flame Photometer* (1)		Yes	01
7.	Gas Chromatograph with following detector*++ (1)		No	
	- ECD-NPD		No	
	- FID-TID			
	- FPD			
	- Other detector			
8.	Gas Chromatograph with Mass Spectrometer (GC-MS)		No	
9.	High Pressure Liquid Chromatograph (HPLC)		No	
10.	Ion Chromatograph		No	
11.	Inductively Coupled Plasma (ICP) Spectrometer		No	
12.	Mercury Analyzer Digital* (1)		No	
13.	Portable Analyzer Kit (DO, pH, Temp. Cond.)		Yes	01
14.	Precision Balance weighing up to 1 mg* (water / air)		Yes	01
15.	Rotary Evaporator* (1)		No	
16.	Spectrophotometer (Visible)* or Ultraviolet & visible* (1)		Yes	01
17.	Stereo Microscope		No	
18.	Total Organic Carbon Analyzer		No	

19.	Any other instruments (Please enclose details on separate sheet)	No	
-----	--	----	--

**(c) LIST OF INSTRUMENTS FOR HAZARDOUS WASTE ANALYSIS**

S. No.	Instruments	Nos. Available
1.	Bomb colorimeter	00
2.	Elemental analyzer	00
3.	Flash point apparatus	00
4.	Moisture content meter	00
5.	Rotary evaporator	00
6.	Toxicity characteristic leaching procedure (TCLP) extractor	00
7.	Toxic Gas analyzer	00
8.	X-ray fluorescence (XRF) Spectrometer	00
9.	Zero head space extractor (ZHE)	00
10.	Any other equipment (please attach details on separate sheet)	00

**(d) LIST OF MAINTENANCE CONTRACT STATUS OF IMPORTANT SOPHISTICATED INSTRUMENTS [Note: Please mark Yes (√)/No (x)]**

S. No.	Name of the instrument	Repair job undertaken on Annual Maintenance contract / emergency call basis	Whether sufficient spares available
1.	AAS (Flame & Flameless)		No
2.	AOX		No
3.	Total Organic Carbon Analyzer		No
4.	Gas Chromatograph		No
5.	Water purification system		No
6.	Analytical balance	NA	Yes

7.	Specific ion meter		No
8.	Mercury analyzer		No
9.	UV-Visible spectrophotometer	Repair job on emergency call basis	Yes
10.	Alpha/Beta Radioactivity Counter		No
11.	Any other equipment (please attach details on separate sheet)		--

( e ) REFERENCE MATERIAL (RMS) AND CERTIFIED REFERENCE MATERIAL (CRMS)

S. No.	Parameters	Availability of RMS/CRMS	
		(√/X)	Nos. of standards
1.	Trace Metals	X	-
2.	Organo-chlorine pesticides	X	-
3.	Organo-nitrogen phosphorous pesticides	X	-
4.	Polychlorinated Biphenyls (PCB's)	X	-
5.	Polycyclic aromatic hydrocarbon (PAH)	X	-
6.	Benzene, Ethylene, Toluene & Xylene	X	-
7.	Dioxins and Furans	X	-
8.	Any other (please attach details on separate sheet)	X	-

f) LIST OF GLASS APPARATUS AND DISTILLATION ASSEMBLIES

[Note: Please mark Yes (√)/No (x)]

S. No.	Particulars	Yes or No	Total nos. available
1.	Fluoride distillation assembly	X	-
2.	Cyanide distillation assembly	X	-
3.	Ammonia distillation assembly	X	-

4.	Water distillation assembly	X	-
5.	Soxlet extraction assembly	X	-
6.	Arsenic estimation assembly	X	-
7.	Phenol distillation assembly	X	-
8.	Any other (please enclose details on separate sheet)	X	-

### (5) AIR QUALITY PARAMETERS

Facilities available [Please mark Yes (√)/No (x)]

#### A. Ambient Air / Fugitive Emissions

S. No.	Group of parameter	Yes/No (√ / x)	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Nitrogen dioxide as NO <sub>2</sub>	√	Lebis Publication
2.	Sulphur dioxide (SO <sub>2</sub> )	√	Lebis Publication
3.	Total suspended particulate matter	√	Lebis Publication
4.	Respirable suspended particulate matter (PM <sub>10</sub> )	√	Lebis Publication
(ii)	<b>Secondary Parameters</b>		
1.	Ammonia	x	
2.	Carbon monoxide	x	
3.	Chlorine	x	
4.	Fluoride	x	
5.	Non methane hydrocarbon	x	
6.	Lead	x	
7.	Methane	x	

8.	Ozone	x	
9.	Benzene Toluene Xylene (BTX)	x	
10.	Polycyclic aromatic hydrocarbon (PAH) Benzo-a-pyrine & others	x	
11.	PM <sub>2.5</sub>	√	Lebis Publication
12.	Volatile Organics Carbon	x	
13	Any other (please attach details on separate sheet)	x	

**B. Stack gases/source emission**

S. No.	Group of parameter	Yes/No (√ / x)	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Particulate matter	√	Lebis Publication
2.	Sulphur dioxide	√	Lebis Publication
3.	Velocity & flow	√	Lebis Publication
4.	Carbon dioxide	x	
5.	Carbon monoxide	x	
6.	Temperature	x	
7.	Oxygen	x	
8.	Oxides of nitrogen	√	Lebis Publication
(ii)	<b>Secondary Parameters</b>		
1.	Acid mist	x	
2.	Ammonia	x	
3.	Chlorine	x	
4.	Fluoride (Particulate)	x	
5.	Fluoride (Gaseous)	x	
6.	Hydro-chloric acid	x	

7.	Total Hydro carbon	x	
8.	Hydrogen Sulphide	x	
9.	Carbon disulphide	x	
10.	Mercaptan	x	
11	Any other (please attach details on separate sheet)	x	

### C. Noise level

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Noise level measurement (20 to 140 dba)	Yes	dB(A)
2.	Ambient Noise & Source specific noise	No	
3	Any other (please attach details on separate sheet)	No	

### D. Meteorological Monitoring

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Ambient Temperature	Yes	
2.	Wind direction	Yes	
3.	Wind speed	Yes	
4.	Relative Humidity	Yes	
(ii)	<b>Secondary Parameters (Minimum required at least one parameter)</b>		
1.	Solar radiation	Yes	
2.	Rain fall	Yes	

Any other (please attach details on separate sheet)

### E. Vehicular Emission Monitoring

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Carbon monoxide	Yes	
2.	Smoke Density	Yes	
3.	Hydrocarbon	Yes	
(ii)	<b>Secondary Parameters (Optional)</b>		
1.	Oxides of Nitrogen	No	

Any other (please attach details on separate sheet)

### 6. LIST OF INSTRUMENTS REQUIRED FOR AIR MONITORING

S. No.	Instrument	Yes/No	If yes, give Total Nos. **
1.	BTX analyzer (PID/FID detector)	Yes	01
2.	BTX calibrator	Yes	01
3.	Charcoal Tubes	Yes	12
4.	CO Analyzer (Non-dispersive Infrared principle)	No	
5.	Detector Tubes with Pump of different pollutants (Please specify details)	Yes	01
6.	Dust analyzer (Beta Attenuation/TOEN)	No	
7.	Exhaust CO/HC analyzer	Yes	01
8.	Flue gas analyzer	Yes	01
9.	Gas Chromatograph with Air sampling port, FID & PFPD detectors	Yes	01
10.	Handy sampler for gaseous monitoring* (2)	Yes	01
11.	High Volume sampler with flow controller (4)	No	
12.	Low flow pump	No	
13.	Meteorological sensors with mast (WS, WD, Temp., Humidity)* (1)	No	

14.	Micro balance (Readability 1 µg)	No	
15.	Multi calibration system	No	
16.	Multi channel recorder	No	
17.	Multi calibration kit (portable)	Yes	01
18.	Noise level meter* (2)	Yes	02
19.	NO-NO <sub>2</sub> -Nox Analyzer (Chemiluminescence based)	No	
20.	Ozone analyzer (Ultraviolet)	Yes	01
21.	Permeation tubes for calibration	No	
22.	RSPM sampler with flow controller/brush less motor + calibration kit* (4)	No	
23.	Smoke density meter	Yes	01
24.	SO <sub>2</sub> Analyzer (Pulsed Fluorescence based)	No	
25.	Soap bubble meter	No	
26.	Stack monitoring kit with High Temp. Probes* (2)	No	
27.	Toddler Bags	No	
28.	Wet gas meter	No	
29.	Any other (please specify)	No	

**(7) LIST OF INFRASTRUCTURAL EQUIPMENT/ITEMS FOR AIR ANALYSIS**

[Please mark Yes (√)/No (x)]

S. No.	Items	Yes/No	If yes, give Total Nos.**
1.	Air conditioner (split type)	Yes	01
2.	Air Conditioner (Window type)	No	
3.	Breathing apparatus	No	
4.	Cold room for sample storage	No	
5.	Computer with printer	Yes	01
6.	Constant voltage transformer	Yes	01
7.	Face shield and helmet	No	
8.	Gas mask	Yes	06
9.	Refrigerator (frost free, CFC free)	No	
10.	Tool Kit (Electrical & Mechanical)	Yes	04

11.	Uninterrupted power supply (UPS) system	Yes	03
12.	First aid box	Yes	02
13.	Trolley for sample transportation	Yes	02
14.	Fume Hood	No	
15.	Exhaust System	No	
16.	Fire Extinguisher	No	
17.	Electricity Generator	Yes	01
18.	Gas Cylinder Trolleys	yes	01
19.	Any other (please specify)	No	

**(8) Budgetary information**

SNo	Budget	[year 2022-23]	[year 2023-24]
1.	Sanctioned	-	-
2.	Expenditure	-	-

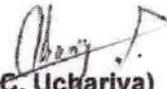
**(9) Manpower Information**

SNo	Designation	Number of Posts in working	Remarks (Required)
1.	Chief Scientific Officer	-	
2.	Senior Scientific Officer	01	
3.	Chief Chemist	01	
4.	Scientist	-	01
5.	Jr Scientist	02	
6.	Chemist	02	02
7.	Sampler	-	02
8.	Laboratory assistant	01	01
9.	Laboratory attendant	01	01
10.	Research Fellows	-	
11.	Field assistant	-	
12.	NAMP Staff	01	
13.	NCAP Staff	-	
14.	Contractual Staff	-	
15.	Others 1- Computer operator	-	02

**Note: (if any other information )**

1- **Vehicle-** Laboratory have only one Monitoring Vehicle. one more required vehicle for Laboratory so we can achieve the monitoring target according to monitoring package easily.

Name of Place - Mandideep

  
 (P.C. Uchariya)  
 Laboratory In charge

**PROFORMA**  
INFORMATION REQUIRED FOR COMPLIENCE OF NGT CASE NO. 693/2023 ORDER  
DTAED 23.11.2023

1. General

(i) Name of Regional Office : Regional Office Madhya Pradesh Pollution Control  
Board, Indore

(ii) Name of the Regional Laboratory : Regional Laboratory M. P. Pollution Control  
Board, Indore.

(iii) Address

a) Postal : Scheme Number 78 C , Aranya, Part 2  
Vijay Nagar , Indore

b) Telephone : 07312554337

c) Fax :

d) E-mail : regional.labindore@yahoo.com

(iv) Year of establishment of  
laboratory : 1977

(v) Laboratory Incharge details

a) Name and Designation : Dr. Saroj Shrivastav, Scientist

b) Address : Scheme Number 78 C, Aranya, Part 2  
Vijay Nagar, Indore

c) Telephone: 07312554337 E-mail regional.labindore@yahoo.com

(vi) Name of accreditation body(s)/organization i.e. ISO, NABL, GLP, SPCB's, PCC's etc. from which the laboratory has been already recognized/accredited, give details.

S. No.	Name of the certification/recognition body/organization	Accreditation / recognition granted for the activities	Environmental Parameter covered	Validity up to
1	NABL	General Requirement for The Competence of Testing & Calibration Laboratories	Water Analysis, 27	25.06.2024
2	OHSAS	Health and Safety	Air, Water, Soil and Waste Water Sample	30.10.2026
3	EPA Recognition			

2. Infrastructural details of Laboratory: (please enclose brief lay out plan map of laboratory) with organizational chart and laboratory position in there to:

(i) Total floor space of the environmental laboratory (in sq. mtr): 350 Sq. mtr

a) Water Laboratory = 150 Sq. mtr

b) Biological & Microbiological Laboratory = 100 Sq. mtr

c) Air Laboratory = 100 Sq. mtr

- d) Provide scanned photograph of above with layout plan.
- (ii) Details of major projects undertaken pertaining to environmental studies:  
[Please attach separate sheet, if space is insufficient]
- (iii) Which of the following type of analytical tests are being carried out in the laboratory [please mark Yes (✓)/No (x)]:
- |  |                                       |
|--|---------------------------------------|
| a) Physical ✓                            | k) Hazardous waste Characterization ✓ |
| b) Inorganics general and non metallic ✓ | l) Ambient air ✓                      |
| c) Inorganic (Trace metals) ✓            | m) Source emission ✓                  |
| d) Organics (General) ✓                  | n) Air Toxics ✓                       |
| e) Trace Organics ✓                      | o) Hazardous Air Pollutants ✓         |
| f) Microbiological ✓                     | p) Volatile Organic Carbon            |
| g) Toxicity ✓                            | m) Noise measurement ✓                |
| h) Biological ✓                          | n) Meteorological ✓                   |
| i) Hazardous waste ✓                     | o) Vehicular emission/Auto exhaust ✓  |
| j) Soil, sludge, sediment ✓              |                                       |

- (iv) Laboratory scientists/chemist or officials are fully conversant for sampling, monitoring, preservation and transportation [please tick Yes(✓)/No(x)].

- |                          |   |
|--------------------------|---|
| (a) Water & wastewater ✓ | (i) Hazardous Air Pollutants analysis ✓ |
| (b) Hazardous waste ✓    | (j) Volatile Organic Carbon analysis ✓  |
| (c) Solid waste ✓        | (k) Noise monitoring ✓                  |
| (d) Soil ✓               | (l) Meteorological monitoring ✓         |
| (e) Municipal waste ✓    | (m) Source emission ✓                   |
| (f) Biomedical waste ✓   | (n) Auto exhaust monitoring ✓           |

- (g) Ambient air/fugitive emission ✓
- (h) Air Toxics analysis ✓
- (v) Laboratory scientists/chemists or officials are capable of analyzing desired/ relevant parameters in various types of matrix [please tick Yes(✓)/No (x)]
  - (o) On line ambient air quality monitoring ✓
  - a. Liquid Samples (water & wastewater) ✓
  - b. Solid Samples (soil/mud/solid waste/sludge etc.) ✓
  - c. Semi-solid samples (sludge/slurry) ✓
  - d. Gaseous samples (Ambient air, source emission, vehicular emission) ✓

**3. LIST OF PARAMETERS BEING ANALYSED FOR WATER & WASTE WATER & SOLID SAMPLES**

A) Physical Tests : [Please mark Yes(✓)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Conductivity ✓	11.	Flocculation test (Jar test) ✓
2.	Colour ✓	12.	Odour ✓
3.	pH ✓	13.	Salinity ✓
4.	Fixed & volatile solids ✓	14.	Settleable solids ✓
5.	Total solids ✓	15.	Sludge volume index (SVI) ✓
6.	Total dissolved solids ✓		
7.	Total suspended solids ✓		
8.	Turbidity ✓		
9.	Temperature ✓		
10.	Velocity & discharge Measurement of industrial effluent stream ✓		

B) Inorganic [Please mark Yes (✓)/No (x)]

(i) General & Non-metallic

S. No.	Parameter	S. No.	Parameter
1.	Acidity ✓	14.	Bromide ✓
2.	Alkalinity ✓	15.	Carbon dioxide ✓
3.	Ammonical nitrogen ✓	16.	Chlorine demand ✓
4.	Chloride ✓	17.	Iodine ✓
5.	Chlorine residual ✓	18.	Sulphite x
6.	Dissolved oxygen ✓	19.	Silica ✓
7.	Fluoride ✓	20.	Cyanide ✓
8.	Total hardness ✓	21.	Sulphide x
9.	Total kjeldal nitrogen (TKN) ✓		
10.	Nitrite nitrogen ✓		
11.	Nitrate nitrogen ✓		
12.	Phosphate ✓		
13.	Sulphate ✓		

(ii) Trace Metals [Please mark Yes(✓)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Boron (B) ✓	16.	Arsenic (As) ✓
2.	Cadmium (Cd) ✓	17.	Aluminium (Al) x
3.	Calcium (Ca) ✓	18.	Beryllium (Be) x
4.	Chromium (Cr) Total ✓	19.	Barium (Ba) x
5.	Chromium (Cr) Hexavalent ✓	20.	Lithium (Li) x
6.	Copper (Cu) ✓	21.	Manganese (Mn)
7.	Iron (Fe) ✓	22.	Selenium (Se) x
8.	Lead (Pb) ✓	23.	Silver (Ag) x
9.	Magnesium (Mg) ✓	24.	Strontium (Sr) x
10.	Mercury (Hg) ✓	25.	Tin (Sn) ✓
11.	Nickel (Ni) ✓	26.	Antimony (Sb) ✓
12.	Potassium (K) ✓	27.	Cobalt (Co) ✓
13.	Sodium (Na) ✓	28.	Vanadium (V) ✓
14.	Sodium absorption ratio (SAR) ✓		
15.	Zinc (Zn) ✓		

(C) Organics (General) and Trace Organics [Please mark Yes(√)/No (x) and give details at Appendix J for Trace organics]

S. No.	Parameter	S. No.	Parameter
1.	Bio-chemical oxygen demand (BOD) √	6.	Total organic carbon (TOC) √
2.	Chemical oxygen demand (COD) √	7.	Adsorbable organic halide (AOX) x
3.	Oil & Grease √	8.	Surfactants √
4.	Phenol √	9.	Tannin & lignin x
5.	Pesticide (each) x	10.	Poly-chlorinated biphenyl (PCB's) each x
	(i) Organo-chlorine (BHC, DDT, Aldrin, Endosulphan) x	11.	Polynuclear aromatic hydrocarbon (PAH) each x
	(ii) Organo nitrogen-phosphorous (Malathion, methyl parathion, Chloropyriphos) x	12.	Organic Carbon (in solid) x
		13.	Carbon/Nitrogen ratio √

D) Microbiological Tests [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Total Coliform √	5.	Total plate count √
2.	Faecal Coliform √	6.	Enterococcus x
3.	Faecal Streptococci √	37.	Coliphage x
4.	E. Coli √		

E) Toxicological Tests [Please mark Yes(✓)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent) ✓	1.	Bio-accumulation, bio magnification and bio-transformation studies x
		2.	Estimation of the effect at tissue level x
		3.	Measurement of toxicity using Daphnia or other organism ✓
		4.	Measurement of toxicity factor using zebra fish (dimensionless toxicity test ✓)

F) Biological Tests [Please mark Yes(✓)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Benthic organism identification and count ✓	5.	Saprobity Index x
2.	Macrophytic identification ✓	6.	Chlorophyll x
3.	Planktonic identification count ✓	7.	Primary productivity x
4.	Measurement of various diversity index ✓	8.	P/R Ratio x

G) Characterization of Hazardous Waste [Please mark Yes(√)/No (x)]

S. No.	Parameter
1.	Preparation of Leachate (TCLP extract/water extract) √
2.	Corrosivity √
3.	Ignibility (Flash point) √
4.	Reactivity x
5.	Toxicity √
6.	Measurement of heavy metals/pesticides in the waste/leachate √

H) Soil/Sludge/Sediment and Solid Waste [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Boron √	16	Ammonia √
2.	Cation Exchange Capacity (CEC) x	17	Bicarbonate x
3.	Electrical Conductivity (EC) √	18	Calcium √
4.	Nitrogen available √	19	Calcium carbonate
5.	Organic carbon/matter (chemical method) √	20	Chloride √
6.	pH √	21	Colour √
7.	Phosphorous (available)	22	Exchangeable sodium percentage (ESP)
8.	Phosphate (ortho) √	23	Gypsum requirement x
9.	Phosphate (total) x	24	H. Acid x
10.	Potassium √	25	Heavy metal √
11.	SAR in soil extract √	26	Magnesium √

S. No.	Parameter	S. No.	Parameter
12.	Sodium ✓	27	Mechanical soil analysis x
13.	Soil moisture ✓	28	Nitrate ✓
14.	TKN ✓	29	Nitrite ✓
15.	Calorific value ✓	30	PAH x
		31	Pesticide x
		32	Potash (available)
		33	Sulphate ✓
		34	Sulphur x
		35	TOC ✓
		36	Total water soluble salt ✓
		37	Water holding capacity ✓

## 4. LIST OF INSTRUMENTS FOR WATER, WASTEWATER &amp; SOLID SAMPLES

## a) LIST OF EQUIPMENT GENERAL ANALYSIS

[Note: Please mark Yes (√)/No(x)]

S. No.	EQUIPMENT	Yes/No	Nos. available**
<b>BASIC EQUIPMENTS</b>			
1.	Ice Box/s* (2)		
2.	Filtration assembly* (1)	√	4
3.	Heating Mantle	√	1
4.	Stop watch	√	1
5.	Hot air oven* (2)	√	1
6.	Hot plate* (2)	√	2
7.	Muffle furnace* (1)	√	2
8.	Standard weight	√	1
9.	Water bath	√	1
10.	Thermometer/s* (4)	√	2
11.	Refrigerator/s big size* 300 litres or above (2)	√	4
		√	2
<b>SPECIFIC EQUIPMENTS</b>			
1.	Autoclave* (1)	√	1
2.	Bottom sampler	√	1
3.	BOD Incubator* (1)	√	2
4.	Centrifuge* (1)	√	1
5.	Aquarium for bioassay test* (4)	√	4
6.	COD Digester with aluminium heating blocks * (1)	√	2
7.	Colony Counter	x	-
8.	Depth Sampler	√	1
9.	Digester with condensers	√	1
10.	Digestion chamber* (1)	√	1
11.	Dissolved oxygen sampler	x	-
12.	Flocculator ( Jar testing apparatus)	x	-
13.	Flow meter	√	1

S. No.	EQUIPMENT	Yes/No	Nos. available**
14.	Incubator for bacteriological test* (2)	√	2
15.	Laminar flow* (1)	√	1
16.	Magnetic Stirrer with hot plate* (2)	√	1
17.	Mechanical Shaker *(1)	√	1
18.	Microwave digester	x	-
19.	TKN Analyzer semi automatic with aluminum block digester	√	1
20.	Ultrasonic water bath	√	1
21.	Vacuum pump* (1)	√	1
22.	Water purification / distillation assembly* (1)	√	1
23.	Ekman Dredge	√	1
24.	Water sampler	√	1
25.	Oil & Grease sampler	x	-
26.	Water Testing kit	√	1
27.	Chloroscope for residual chlorine	√	1

## (b) LIST OF INSTRUMENTS WATER/WASTE WATER ANALYSIS

S. No.	Name of instrument	Yes/No	Total Nos. **
<b>BASIC INSTRUMENTS</b>			
1.	Analytical Balance +* (1) 1 mg	√	1
2.	Conductivity Meter* (1)	√	1
3.	Dissolved oxygen meter	x	-
4.	pH Meter with combined glass electrode* (1)	√	1
5.	Turbidity meter* (1)	√	1
<b>SPECIFIC INSTRUMENTS</b>			
1.	Alpha/Beta Radioactivity Counter	x	-

2.	Atomic Absorption Spectrophotometer (Flame) with the following cathode lamps + (✓ available HCL)* (1)																														
	<table border="0"> <tr> <td>(i) Aluminium</td> <td>(ii) Antimony</td> </tr> <tr> <td>(iii) Arsenic ✓</td> <td>(iv) Barium</td> </tr> <tr> <td>(v) Barium</td> <td>(vi) Boron ✓</td> </tr> <tr> <td>(vii) Cadmium ✓</td> <td>(viii) Calcium ✓</td> </tr> <tr> <td>(ix) Chromium ✓</td> <td>(x) Copper ✓</td> </tr> <tr> <td>(xi) Iron ✓</td> <td>(xii) Lithium</td> </tr> <tr> <td>(xiii) Lead ✓</td> <td>(xiv) Magnesium</td> </tr> <tr> <td>(xv) Manganese ✓</td> <td>(xvi) Mercury ✓</td> </tr> <tr> <td>(xvii) Nickel ✓</td> <td>(xviii) Potassium</td> </tr> <tr> <td>(xix) Selenium</td> <td>(xx) Silver</td> </tr> <tr> <td>(xxi) Sodium</td> <td>(xxii) Strontium</td> </tr> <tr> <td>(xxiii) Tin ✓</td> <td>(xxiv) Cobalt ✓</td> </tr> <tr> <td>(xxv) Vanadium ✓</td> <td>(xxvi) Zinc ✓</td> </tr> <tr> <td></td> <td>(xxvii) Other, pl. specify</td> </tr> </table>	(i) Aluminium	(ii) Antimony	(iii) Arsenic ✓	(iv) Barium	(v) Barium	(vi) Boron ✓	(vii) Cadmium ✓	(viii) Calcium ✓	(ix) Chromium ✓	(x) Copper ✓	(xi) Iron ✓	(xii) Lithium	(xiii) Lead ✓	(xiv) Magnesium	(xv) Manganese ✓	(xvi) Mercury ✓	(xvii) Nickel ✓	(xviii) Potassium	(xix) Selenium	(xx) Silver	(xxi) Sodium	(xxii) Strontium	(xxiii) Tin ✓	(xxiv) Cobalt ✓	(xxv) Vanadium ✓	(xxvi) Zinc ✓		(xxvii) Other, pl. specify		
(i) Aluminium	(ii) Antimony																														
(iii) Arsenic ✓	(iv) Barium																														
(v) Barium	(vi) Boron ✓																														
(vii) Cadmium ✓	(viii) Calcium ✓																														
(ix) Chromium ✓	(x) Copper ✓																														
(xi) Iron ✓	(xii) Lithium																														
(xiii) Lead ✓	(xiv) Magnesium																														
(xv) Manganese ✓	(xvi) Mercury ✓																														
(xvii) Nickel ✓	(xviii) Potassium																														
(xix) Selenium	(xx) Silver																														
(xxi) Sodium	(xxii) Strontium																														
(xxiii) Tin ✓	(xxiv) Cobalt ✓																														
(xxv) Vanadium ✓	(xxvi) Zinc ✓																														
	(xxvii) Other, pl. specify																														
3.	Atomic Absorption Spectrophotometer with Graphite Furnace and Hydride Generation System	✓	1																												
4.	Organic Halogen Analyzer (AOX/TOX)	x	-																												
5.	Binocular Microscope	x	-																												
6.	Flame Photometer* (1)	✓	1																												
7.	Gas Chromatograph with following detector*++ (1)	x	-																												
	<ul style="list-style-type: none"> <li>- ECD-NPD</li> <li>- FID-TID</li> <li>- FPD</li> <li>- Other detector</li> </ul>	x	-																												
8.	Gas Chromatograph with Mass Spectrometer (GC-MS)	x	-																												
9.	High Pressure Liquid Chromatograph (HPLC)	x	-																												
10.	Ion Chromatograph	x	-																												
11.	Inductively Coupled Plasma (ICP) Spectrometer	x	-																												
12.	Mercury Analyzer Digital* (1)	x	-																												
13.	Portable Analyzer Kit (DO, pH, Temp. Cond.)	✓	1																												

14.	Precision Balance weighing up to 1 mg* (water / air)	√	1
15.	Rotary Evaporator* (1)	√	1
16.	Spectrophotometer (Visible)* or Ultraviolet & visible* (1)	√	2
17.	Stereo Microscope	x	-
18.	Total Organic Carbon Analyzer	x	-
19.	Any other instruments (Please enclose details on separate sheet)		

## (c) LIST OF INSTRUMENTS FOR HAZARDOUS WASTE ANALYSIS

S. No.	Instruments	Nos. Available
1.	Bomb calorimeter	1
2.	Elemental analyzer	-
3.	Flash point apparatus	1
4.	Moisture content meter	-
5.	Rotary evaporator	1
6.	Toxicity characteristic leaching procedure (TCLP) extractor	1
7.	Toxic Gas analyzer	-
8.	X-ray fluorescence (XRF) Spectrometer	-
9.	Zero head space extractor (ZHE)	-
10.	Any other equipment (please attach details on separate sheet)	

(d) LIST OF MAINTENANCE CONTRACT STATUS OF IMPORTANT SOPHISTICATED INSTRUMENTS [Note: Please mark Yes (√)/No (x)]

S. No.	Name of the instrument	Repair job undertaken on Annual Maintenance contract / emergency call basis	Whether sufficient spares available
1.	AAS (Flame & Flameless)	√	√
2.	AOX	x	x
3.	Total Organic Carbon Analyzer	x	x
4.	Gas Chromatograph	x	x
5.	Water purification system	√	√
6.	Analytical balance	√	√
7.	Specific ion meter	x	x
8.	Mercury analyzer	x	x
9.	UV-Visible spectrophotometer	√	√
10.	Alpha/Beta Radioactivity Counter	x	x
11.	Any other equipment (please attach details on separate sheet)	x	x

(e) REFERENCE MATERIAL (RMS) AND CERTIFIED REFERENCE MATERIAL (CRMS)

S. No.	Parameters	Availability of RMS/CRMS	
		(√/X)	Nos. of standards
1.	Trace Metals	x	-
2.	Organo-chlorine pesticides	x	-
3.	Organo-nitrogen phosphorous pesticides	x	-
4.	Polychlorinated Biphenyls (PCB's)	x	-
5.	Polycyclic aromatic hydrocarbon (PAH)	x	-
6.	Benzene, Ethylene, Toluene & Xylene	x	-
7.	Dioxins and Furans	x	-

8.	Any other (please attach details on separate sheet)		
----	---	--	--

f) **LIST OF GLASS APPARATUS AND DISTILLATION ASSEMBLIES**

[Note: Please mark Yes (√)/No (x)]

S. No.	Particulars	Yes or No	Total nos. available
1.	Fluoride distillation assembly	√	1
2.	Cyanide distillation assembly	√	1
3.	Ammonia distillation assembly	√	1
4.	Water distillation assembly	√	1
5.	Soxlet extraction assembly	√	1
6.	Arsenic estimation assembly	√	1
7.	Phenol distillation assembly	√	1
8.	Any other (please enclose details on separate sheet)		

(5) **AIR QUALITY PARAMETERS**

Facilities available [Please mark Yes (√)/No (x)]

A. *Ambient Air / Fugitive Emissions*

S. No.	Group of parameter	Yes/No (√/x)	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Nitrogen dioxide as NO <sub>2</sub>	√	As Per CPCB Manual
2.	Sulphur dioxide (SO <sub>2</sub> )	√	
3.	Total suspended particulate matter	√	

4.	Respirable suspended particulate matter (PM <sub>10</sub> )	√	
(II)	<b>Secondary Parameters</b>		
1.	Ammonia	√	
2.	Carbon monoxide	x	
3.	Chlorine	√	
4.	Fluoride	√	
5.	Non methane hydrocarbon	x	
6.	Lead	√	
7.	Methane	√	Methane Detector
8.	Ozone	√	
9.	Benzene Toluene Xylene (BTX)	x	
10.	Polycyclic aromatic hydrocarbon (PAH) Benzo-a-pyrine & others	x	
11.	PM <sub>2.5</sub>	√	
12.	Volatile Organics Carbon	x	
13.	Any other (please attach details on separate sheet)		

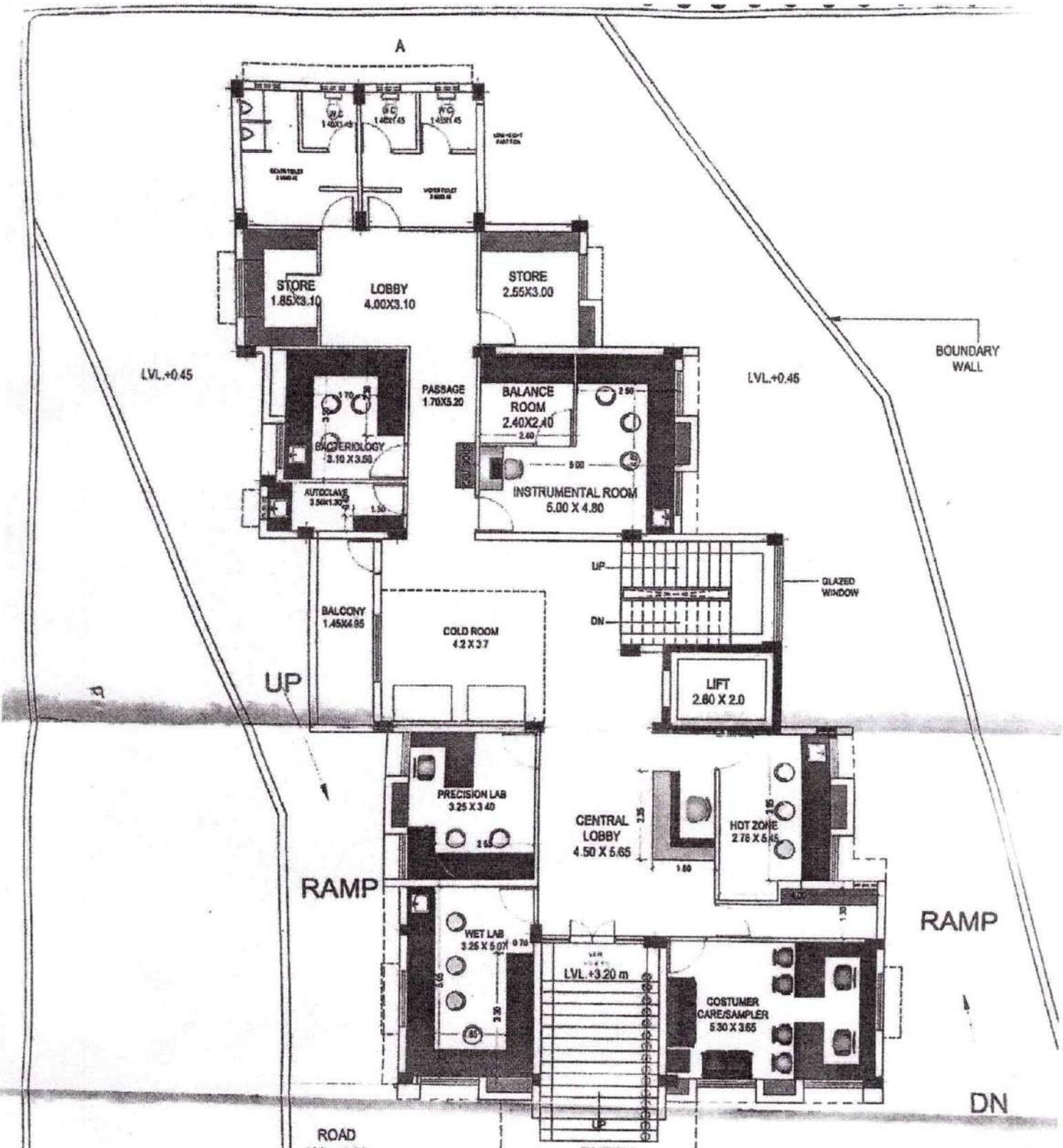
**B. Stack gases/source emission**

S. No.	Group of parameter	Yes/No (√/x)	Adopted method
(I)	<i>Mandatory Parameters</i>		
1.	Particulate matter	√	
2.	Sulphur dioxide	√	
3.	Velocity & flow	√	
4.	Carbon dioxide	√	Flue Gas Analyser
5.	Carbon monoxide	√	Flue Gas Analyser

6.	Temperature	√	
7.	Oxygen	√	
8.	Oxides of nitrogen	√	
(ii)	<b>Secondary Parameters</b>		
1.	Acid mist	√	
2.	Ammonia	√	
3.	Chlorine	√	
4.	Fluoride (Particulate)	√	
5.	Fluoride (Gaseous)	√	
6.	Hydro-chloric acid	√	
7.	Total Hydro carbon	x	
8.	Hydrogen Sulphide	√	
9.	Carbon disulphide	x	
10.	Mercaptan	x	
11.	Any other (please attach details on separate sheet)		

### C. Noise level

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Noise level measurement (20 to 140 dba)	√	
2.	Ambient Noise & Source specific noise	√	
3.	Any other (please attach details on separate sheet)		



STATEMENT OF AREAS	
PLOT AREA	= 768.00 SQ.M.
STILT PARKING AREA	= 288.83 SQ.M.
GROUND FLOOR AREA	= 324.78 SQ.M.
FIRST FLOOR AREA	= 297.39 SQ.M.
SECOND FLOOR AREA	= 297.39 SQ.M.
THIRD FLOOR AREA	= 297.39 SQ.M.
<b>TOTAL BUILT UP AREA</b>	<b>= 1506.80 SQ.M.</b>

NOTE : FLOORING TO BE DONE ACCORDING TO THE DRAWING OR AS THE INSTRUCTIONS OF ENGINEER- IN CHARGE.

DESIGNED BY: [Signature] ARCHITECTS

## D. Meteorological Monitoring

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Ambient Temperature	√	Weather Monitoring Station/ CAAQMS
2.	Wind direction	√	
3.	Wind speed	√	
4.	Relative Humidity	√	
(ii)	<b>Secondary Parameters (Minimum required at least one parameter)</b>		
1.	Solar radiation	√	
2.	Rain fall	√	

Any other (please attach details on separate sheet)

## E. Vehicular Emission Monitoring

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Carbon monoxide	√	COHC Analyser
2.	Smoke Density	√	
3.	Hydrocarbon	√	
(ii)	<b>Secondary Parameters (Optional)</b>		
1.	Oxides of Nitrogen	x	

Any other (please attach details on separate sheet)

## 6. LIST OF INSTRUMENTS REQUIRED FOR AIR MONITORING

S. No.	Instrument	Yes/No	If yes, give Total Nos. **
1	BTX analyzer (PID/FID detector)	√	1
2	BTX calibrator	√	1
3	Charcoal Tubes	√	
4	CO Analyzer (Non-dispersive Infrared principle)	√	1
5	Detector Tubes with Pump of different pollutants (Please specify details)	√	1
6	Dust analyzer (Beta Attenuation/TOEN)	√	1
7	Exhaust CO/HC analyzer		
8	Flue gas analyzer	√	1
9	Gas Chromatograph with Air sampling port, FID & PFPD detectors	√	1
10	Handy sampler for gaseous monitoring* (2)	√	1
11	High Volume sampler with flow controller (4)	√	2
12	Low flow pump	√	1
13	Meteorological sensors with mast (WS, WD, Temp., Humidity)* (1)	√	1
14	Micro balance (Readability 1 µg)		
15	Multi calibration system		
16	Multi channel recorder		
17	Multi calibration kit (portable)	√	1
18	Noise level meter* (2)	√	2
19	NO-NO <sub>2</sub> -Nox Analyzer (Chemiluminescence based)	√	1
20	Ozone analyzer (Ultraviolet)	√	1
21	Permeation tubes for calibration		
22	RSPM sampler with flow controller/brush less motor + calibration kit* (4)	√	1
23	Smoke density meter	√	1
24	SO <sub>2</sub> Analyzer (Pulsed Fluorescence based)	√	1

25	Soap bubble meter		
26	Stack monitoring kit with High Temp. Probes* (2)	√	1
27	Toddler Bags	√	1
28	Wet gas meter		
29	Any other (please specify)		

## (7) LIST OF INFRASTRUCTURAL EQUIPMENT/ITEMS FOR AIR ANALYSIS

[Please mark Yes (√)/No (x)]

S. No.	Items	Yes/No	If yes, give Total Nos.**
1.	Air conditioner (split type)	√	2
2.	Air Conditioner (Window type)	x	x
3.	Breathing apparatus	√	2
4.	Cold room for sample storage	√	1
5.	Computer with printer	√	3
6.	Constant voltage transformer		
7.	Face shield and helmet	√	5
8.	Gas mask	√	4
9.	Refrigerator (frost free, CFC free)	√	1
10.	Tool Kit (Electrical & Mechanical)	√	1
11.	Uninterrupted power supply (UPS) system		
12.	First aid box		
13.	Trolley for sample transportation	√	1
14.	Fume Hood		
15.	Exhaust System		
16.	Fire Extinguisher		
17.	Electricity Generator		
18.	Gas Cylinder Trolleys	√	1
19.	Any other (please specify)		

## (8) Budgetary information

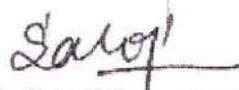
SNo	Budget	[year 2022-23]	[year 2023-24]
1.	Sanctioned		
2.	Expenditure		

## (9) Manpower information

SNo	Designation	Number of Posts in working	Remarks
1.	Chief Scientific Officer	0	
2.	Senior Scientific Officer	0	
3.	Chief Chemist	0	
4.	Scientist	4	
5.	Jr Scientist	1	
6.	Chemist	2	
7.	Sampler	1	
8.	Laboratory assistant	0	
9.	Laboratory attendant	1	
10.	Research Fellows	2	
11.	Field assistant	1	
12.	NAMP Staff	2	
13.	NCAP Staff	0	
14.	Contractual Staff	1	
15.	Others		

Note: (if any other information )

Name of Place :

  
 Dr. Saroj Shrivastav  
 (Scientist & Lab In-charge)

**PROFORMA**

INFORMATION REQUIRED FOR COMPLIANCE OF NGT CASE NO. 693/2023 ORDER  
DTAED 23.11.2023

## 1. General

(i) Name of Regional Office : Regional Office, M.P. Pollution Control Board,  
Ujjain (M.P.)

(ii) Name of the Regional Laboratory : Regional Laboratory, M.P. Pollution Control  
Board, Ujjain (M.P.)

## (iii) Address

a) Postal : 17, Bharatpuri, Ujjain

b) Telephone : 0734 - 2510984

c) Fax : Nil

d) E-mail : rlmppcbujjain@gmail.com

(iv) Year of establishment of  
laboratory : 1986

## (v) Laboratory Incharge details

a) Name and Designation : A. D. Sant (Senior Scientific Officer)

b) Address : Regional Laboratory, M.P. Pollution Control Board , 17, Bharatpuri , Ujjain (M.P.) 456010

c) Telephone:0734-2510984 Fax \_\_\_\_\_ E-mail : rlmppcbujjain@gmail.com

## (vi) Name of accreditation body(s)/organization i.e. ISO, NABL, GLP, SPCB's, PCC's etc. from which the laboratory has been already recognized/accredited, give details.

S. No.	Name of the certification/recognition body/organization	Accreditation / recognition granted for the activities	Environmental Parameter covered	Validity up to
1.	NABL	1. Surface water, Ground water, & Waste water,	(25) <b>Parameters:-</b> Temperature, pH, TS, TDS, TSS, FDS, Specific conductance, Turbidity, Total Alkalinity, Total Hardness, Calcium, Mg, Cl <sup>-</sup> , So <sub>4</sub> <sup>2-</sup> , Po <sub>4</sub> <sup>3-</sup> - P, NH <sub>3</sub> -N, Nitrogen Nitrate, Nitrogen Nitrite, DO, Na <sup>+</sup> , K <sup>+</sup> , BOD, COD, O&G,TKN, Fluoride	31/10/2023
2.	BS-OHSAS 18001 2007 BUREAU VERITAS	Providing Testing & Analysis of Air, Water, Soil and Waste Water Samples	Providing Testing & Analysis of Air, Water, Soil and Waste Water Samples	24/08/2026

2. Infrastructural details of Laboratory: (please enclose brief lay out plan map of laboratory) with organizational chart and laboratory position in there to:

(i) Total floor space of the environmental laboratory (in sq. mtr): \_\_\_\_\_

a) Water Laboratory = 261 Sq. mtr

b) Biological & Microbiological Laboratory = 15 Sq. mtr

c) Air Laboratory = 50 Sq. mtr

d) Provide scanned photograph of above with layout plan.

Photograph & Layout plan attached

(ii) Details of major projects undertaken pertaining to environmental studies:

*[Please attach separate sheet, if space is insufficient]*

- National Ambient Air Monitoring Programme (CPCB Aided Project )
- Monitoring of Indian Natural Resources(CPCB Aided Project )
- City Noise / vehicle/ Ambient air Monitoring (State Govt. Aided Project )
- Industrial (Source emission/Ambient air/ waste water monitoring Ujjain Region
- Trenching Ground ( Water/Ambient air ) Monitoring Ujjain Region
- Other Various Monitoring as per requirement of the Board.
- Study of Underground water quality in adjacent villages of River Chambal from village Piploda (Distt- Ujjain) to village – Tal (Distt- Ratlam).

(iii) Which of the following type of analytical tests are being carried out in the laboratory [please mark Yes (√)/No (x)]:

- |   |  |
|---|--|
| a) Physical(√)                            | k) Hazardous waste Characterization(x) |
| b) Inorganic general and non metallic (√) | l) Ambient air (√)                     |
| c) Inorganic (Trace metals) (√)           | m) Source emission (√)                 |
| d) Organics (General) (√)                 | n) Air Toxic (x)                       |

- |                               |  |
|-------------------------------|--|
| e) Trace Organics (x)         | o) Hazardous Air Pollutants (x)        |
| f) Microbiological (√)        | p) Volatile Organic Carbon (x)         |
| g) Toxicity (√)               | m) Noise measurement (√)               |
| h) Biological (√)             | n) Meteorological (√)                  |
| i) Hazardous waste (x)        | o) Vehicular emission/Auto exhaust (√) |
| j) Soil, sludge, sediment (√) |  |

(iv) Laboratory scientists/chemist or officials are fully conversant for sampling, monitoring, preservation and transportation [please tick Yes(√)/No(x)].

- |                                       |  |
|---------------------------------------|--|
| (a) Water & wastewater (√)            | (i) Hazardous Air Pollutants analysis (√)      |
| (b) Hazardous waste (√)               | (j) Volatile Organic Carbon analysis (√)       |
| (c) Solid waste (√)                   | (k) Noise monitoring (√)                       |
| (d) Soil (√)                          | (l) Meteorological monitoring (√)              |
| (e) Municipal waste (√)               | (m) Source emission (√)                        |
| (f) Biomedical waste (√)              | (n) Auto exhaust monitoring (√)                |
| (g) Ambient air/fugitive emission (√) | (o) On line ambient air quality Monitoring (√) |
| (h) Air Toxics analysis (√)           |  |

(v) Laboratory scientists/chemists or officials are capable of analyzing desired/ relevant parameters in various types of matrix [please tick [Yes(√)/No (x)]

- a. Liquid Samples (water & wastewater) (√)
- b. Solid Samples (soil/mud/solid waste/sludge etc.) (√)
- c. Semi-solid samples (sludge/slurry) (√)
- d. Gaseous samples (Ambient air, source emission, vehicular emission) (√)

### 3. LIST OF PARAMETERS BEING ANALYSED FOR WATER & WASTE WATER & SOLID SAMPLES

A) Physical Tests : [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Conductivity √	11.	Flocculation test (Jar test) x
2.	Colour √	12.	Odour √
3.	pH √	13.	Salinity √
4.	Fixed & volatile solids √	14.	Settleable solids √
5.	Total solids √	15.	Sludge volume index (SVI) x
6.	Total dissolved solids √		
7.	Total suspended solids √		
8.	Turbidity √		
9.	Temperature √		
10.	Velocity & discharge Measurement of industrial effluent stream √		

B) Inorganic [Please mark Yes (√)/No (x)]

(i) General & Non-metallic

S. No.	Parameter	S. No.	Parameter
1.	Acidity √	14.	Bromide x
2.	Alkalinity √	15.	Carbon dioxide √
3.	Ammonical nitrogen √	16.	Chlorine demand x
4.	Chloride √	17.	Iodine x
5.	Chlorine residual √	18.	Sulphite x
6.	Dissolved oxygen √	19.	Silica x
7.	Fluoride √	20.	Cyanide x

8.	Total hardness ✓	21.	Sulphide ✓
9.	Total kjehldal nitrogen (TKN) ✓		
10.	Nitrite nitrogen ✓		
11.	Nitrate nitrogen ✓		
12.	Phosphate ✓		
13.	Sulphate ✓		

(ii) Trace Metals [Please mark Yes(✓)/No (x)]

S. No.	Mandatory parameter	S. No.	Secondary parameter
1.	Boron (B) ✓	16.	Arsenic (As) ✓
2.	Cadmium (Cd) x	17.	Aluminium (Al) x
3.	Calcium (Ca) ✓	18.	Beryllium (Be) x
4.	Chromium (Cr) Total ✓	19.	Barium (Ba) x
5.	Chromium (Cr) Hexavalent ✓	20.	Lithium (Li) x
6.	Copper (Cu) ✓	21.	Manganese (Mn) ✓
7.	Iron (Fe) ✓	22.	Selenium (Se) ✓
8.	Lead (Pb) ✓	23.	Silver (Ag) x
9.	Magnesium (Mg) ✓	24.	Strontium (Sr) x
10.	Mercury (Hg) ✓	25.	Tin (Sn) ✓
11.	Nickel (Ni) ✓	26.	Antimony (Sb) ✓
12.	Potassium (K) ✓	27.	Cobalt (Co) ✓
13.	Sodium (Na) ✓	28.	Vanadium (V) ✓
14.	Sodium absorption ratio (SAR) ✓		
15.	Zinc (Zn) ✓		

(C) Organics (General) and Trace Organics [Please mark Yes(√)/No (x) and give details at Appendix J for Trace organics]

S. No.	Mandatory parameter	S. No.	Secondary parameter
1.	Bio-chemical oxygen demand (BOD) √	6.	Total organic carbon (TOC) √
2.	Chemical oxygen demand (COD) √	7.	Adsorbable organic halide (AOX) x
3.	Oil & Grease √	8.	Surfactants x
4.	Phenol x	9.	Tannin & lignin x
5.	Pesticide (each)	10.	Poly-chlorinated biphenyl (PCB's) each x
	(i) Organo-chlorine (BHC, DDT, Aldrin, Endosulphan) √	11.	Polynuclear aromatic hydrocarbon (PAH) each √
	(ii) Organo nitrogen-phosphorous (Malathion, methyl parathion, Chloropyriphos) √	12.	Organic Carbon (in solid) √
		13.	Carbon/Nitrogen ratio x

D) Microbiological Tests [Please mark Yes(√)/No (x)]

S. No.	Mandatory parameter	S. No.	Secondary parameter
1.	Total Coliform √	5.	Total plate count √
2.	Faecal Coliform √	6.	Enterococcus x
3.	Faecal Streptococci √	7.	Coliphage x
4.	E. Coli √		

E) Toxicological Tests [Please mark Yes (√)/No (x)]

S. No.	Mandatory parameter	S. No.	Secondary parameter
1.	Bioassay method for evaluation of toxicity using fish (90% survival of	1.	Bio-accumulation, bio magnification and bio-transformation studies x

fish after 96 hrs in 100% effluent)	√	2.	Estimation of the effect at tissue level x
		3.	Measurement of toxicity using Daphnia or other organism (x)
		4.	Measurement of toxicity factor using zebra fish (dimensionless toxicity test x

F) Biological Tests [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Benthic organism identification and count √	5.	Saprobity Index x
2.	Macrophytic identification √	6.	Chlorophyll √
3.	Planktonic identification count √	7.	Primary productivity x
4.	Measurement of various diversity index x	8.	P/R Ratio x

G) Characterization of Hazardous Waste [Please mark Yes(√)/No (x)]

S. No.	Parameter	
1.	Preparation of Leachate (TCLP extract/water extract)	x
2.	Corrosivity	√
3.	Ignibility (Flash point)	√
4.	Reactivity	x
5.	Toxicity	x
6.	Measurement of heavy metals/pesticides in the waste/ leachate	√

H) Soil/Sludge/Sediment and Solid Waste [Please mark Yes(√)/No (x)]

S. No.	Mandatory parameter	S. No.	Secondary parameter
1.	Boron √	16.	Ammonia x
2.	Cation Exchange Capacity (CEC) x	17.	Bicarbonate x
3.	Electrical Conductivity (EC) √	18.	Calcium √
4.	Nitrogen available x	19.	Calcium carbonate x
5.	Organic carbon/matter (chemical method) x	20.	Chloride √
6.	pH √	21.	Colour x
7.	Phosphorous (available) x	22.	Exchangeable sodium percentage (ESP) x
8.	Phosphate (ortho) x	23.	Gypsum requirement x
9.	Phosphate (total) x	24.	H. Acid x
10.	Potassium √	25.	Heavy metal √
11.	SAR in soil extract x	26.	Magnesium √
12.	Sodium √	27.	Mechanical soil analysis x
13.	Soil moisture √	28.	Nitrate x
14.	TKN √	29.	Nitrite x
15.	Calorific value √	30.	PAH √
		31.	Pesticide √
		32.	Potash (available) x
		33.	Sulphate √
		34.	Sulphur x
		35.	TOC √
		36.	Total water soluble salt √
		37.	Water holding capacity x

## 4. LIST OF INSTRUMENTS FOR WATER, WASTEWATER &amp; SOLID SAMPLES

## a) LIST OF EQUIPMENT GENERAL ANALYSIS

[Note: Please mark Yes (√)/No(x)]

S. No.	Equipment	Yes/No	Nos. available**
<b>BASIC EQUIPMENTS</b>			
1.	Ice Box/s* (2)	√	10
2.	Filtration assembly* (1)	√	01
3.	Heating Mantle	√	01
4.	Stop watch	√	01
5.	Hot air oven* (2)	√	03
6.	Hot plate* (2)	√	01
7.	Muffle furnace* (1)	√	01
8.	Standard weight	√	01
9.	Water bath	√	01
10.	Thermometer/s* (4)	√	04
11.	Refrigerator/s big size* 300 liters or above (2)	√	01
<b>SPECIFIC EQUIPMENTS</b>			
1.	Autoclave* (1)	√	02
2.	Bottom sampler	√	01
3.	BOD Incubator* (1)	√	02
4.	Centrifuge* (1)	√	01

S. No.	Equipment	Yes/No	Nos. available**
5.	Aquarium for bioassay test* (4)	√	04
6.	COD Digester with aluminium heating blocks * (1)	√	02
7.	Colony Counter	√	01
8.	Depth Sampler	√	01
9.	Digester with condensers	√	01
10.	Digestion chamber* (1)	√	01
11.	Dissolved oxygen sampler	√	01
12.	Flocculator ( Jar testing apparatus)	√	01
13.	Flow meter	√	01
14.	Incubator for bacteriological test* (2)	√	02
15.	Laminar flow* (1)	√	01
16.	Magnetic Stirrer with hot plate* (2)	√	02
17.	Mechanical Shaker *(1)	√	01
18.	Microwave digester	X	X
19.	TKN Analyzer semi automatic with aluminum block digester	√	01
20.	Ultrasonic water bath	X	X
21.	Vacuum pump* (1)	√	01
22.	Water purification / distillation assembly* (1)	√	01
23.	Ekman Dredge	√	01
24.	Water sampler	√	01
25.	Oil & Grease sampler	X	-
26.	Water Testing kit	X	X
27.	Chloroscope for residual chlorine	√	01
28.	Any other equipment (please attach details on separate sheet)	X	X

## (b) LIST OF INSTRUMENTS FOR WATER / WASTE WATER ANALYSIS

[Note: Please mark Yes (√)/No (x)]

S. No.	Name of instrument	Yes/No	Total Nos. **
<b>BASIC INSTRUMENTS</b>			
1.	Analytical Balance +* (1) 1 mg	√	02
2.	Conductivity Meter* (1)	√	01
3.	Dissolved oxygen meter	√	01 Online
4.	pH Meter with combined glass electrode* (1)	√	01
5.	Turbidity meter* (1)	√	01
<b>SPECIFIC INSTRUMENTS</b>			
1.	Alpha/Beta Radioactivity Counter		
2.	Atomic Absorption Spectrophotometer (Flame) with the following cathode lamps + (√ available HCL)* (1)	√	01
	(i) Aluminium	(ii) Antimony √	
	(iii) Arsenic √	(iv) Barium	
	(v) Barium x	(vi) Boron √	
	(vii) Cadmium x	(viii) Calcium √	
	(ix) Chromium √	(x) Copper √	
	(xi) Iron √	(xii) Lithium x	
	(xiii) Lead √	(xiv) Magnesium x	
	(xv) Manganese √	(xvi) Mercury x	
	(xvii) Nickel √	(xviii) Potassium x	
	(xix) Selenium √	(xx) Silver x	
	(xxi) Sodium	(xxii) Strontium x	
	(xxiii) Tin √	(xxiv) Cobalt √	
	(xxv) Vanadium √	(xxvi) Zinc √	
		(xxvii) Other, pl. specify	

3.	Atomic Absorption Spectrophotometer with Graphite Furnace and Hydride Generation System	√	01
4.	Organic Halogen Analyzer (AOX/TOX)	x	--
5.	Binocular Microscope	√	01
6.	Flame Photometer* (1)	√	02
7.	Gas Chromatograph with following detector*++ (1)	√	01
	- ECD-NPD - FID-TID - FPD - Other detector		
8.	Gas Chromatograph with Mass Spectrometer (GC-MS)	√	01
9.	High Pressure Liquid Chromatograph (HPLC)	X	
10.	Ion Chromatograph	X	
11.	Inductively Coupled Plasma (ICP) Spectrometer	X	
12.	Mercury Analyzer Digital* (1)	√	01
13.	Portable Analyzer Kit (DO, pH, Temp. Cond.)	X	
14.	Precision Balance weighing up to 1 mg* (water / air)	√	02
15.	Rotary Evaporator* (1)	√	01
16.	Spectrophotometer (Visible)* or Ultraviolet & visible* (1)	√	02
17.	Stereo Microscope	X	
18.	Total Organic Carbon Analyzer	√	01
19.	Any other instruments (Please enclose details on separate sheet)	x	--

## (c) LIST OF INSTRUMENTS FOR HAZARDOUS WASTE ANALYSIS

S. No.	Instruments	Nos. Available
1.	Bomb colorimeter √	01
2.	Elemental analyzer x	--

3.	Flash point apparatus <input checked="" type="checkbox"/>	01
4.	Moisture content meter <input checked="" type="checkbox"/>	--
5.	Rotary evaporator <input checked="" type="checkbox"/>	01
6.	Toxicity characteristic leaching procedure (TCLP) extractor <input checked="" type="checkbox"/>	--
7.	Toxic Gas analyzer <input checked="" type="checkbox"/>	--
8.	X-ray fluorescence (XRF) Spectrometer <input checked="" type="checkbox"/>	---
9.	Zero head space extractor (ZHE) <input checked="" type="checkbox"/>	---
10	Any other equipment (please attach details on separate sheet)	

**(d) LIST OF MAINTENANCE CONTRACT STATUS OF IMPORTANT SOPHISTICATED INSTRUMENTS** [Note: Please mark Yes () / No ()]

S. No.	Name of the instrument	Repair job undertaken on Annual Maintenance contract / emergency call basis	Whether sufficient spares available
1.	AAS (Flame & Flameless)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2.	AOX	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3.	Total Organic Carbon Analyzer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4.	Gas Chromatograph	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5.	Water purification system	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6.	Analytical balance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7.	Specific ion meter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8.	Mercury analyzer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9.	UV-Visible spectrophotometer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10.	Alpha/Beta Radioactivity Counter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
11.	Any other equipment (please attach details on separate sheet)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## ( e ) REFERENCE MATERIAL (RMS) AND CERTIFIED REFERENCE MATERIAL (CRMS)

S. No.	Parameters	Availability of RMS/CRMS	
		(√/X)	Nos. of standards
1.	Trace Metals	√	16
2.	Organo-chlorine pesticides	X	X
3.	Organo-nitrogen phosphorous pesticides	X	X
4.	Polychlorinated Biphenyls (PCB's)	X	X
5.	Polycyclic aromatic hydrocarbon (PAH)	X	X
6.	Benzene, Ethylene, Toluene & Xylene	x	x
7.	Dioxins and Furans	X	X
8	Any other equipment (please attach details on separate sheet)	x	x

## f) LIST OF GLASS APPARATUS AND DISTILLATION ASSEMBLIES

[Note: Please mark Yes (√)/No (x)]

S. No.	Particulars	Yes or No	Total nos. available
1.	Fluoride distillation assembly	X	--
2.	Cyanide distillation assembly	X	--
3.	Ammonia distillation assembly	X	--
4.	Water distillation assembly	√	01 Set
5.	Soxlet extraction assembly	√	01 Set
6.	Arsenic estimation assembly	X	--
7.	Phenol distillation assembly	X	--
8.	Any other (please enclose details on separate sheet)	x	--

**(5) AIR QUALITY PARAMETERS**

Facilities available [Please mark Yes (√)/No (x)]

A. *Ambient Air / Fugitive Emissions*

S. No.	Group of parameter	Yes/No (√ / x)	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Nitrogen dioxide as NO <sub>2</sub>	√	Jacob and Hochheiser
2.	Sulphur dioxide (SO <sub>2</sub> )	√	West and Gaeke
3.	Total suspended particulate matter	√	Gravimetric
4.	Respirable suspended particulate matter (PM <sub>10</sub> )	√	Gravimetric
(ii)	<b>Secondary Parameters</b>		
1.	Ammonia	√	Indophenol blue method
2.	Carbon monoxide	√	
3.	Chlorine	√	Methyle orange
4.	Fluoride	x	
5.	Non methane hydrocarbon	x	
6.	Lead	√	AAS
7.	Methane	x	
8.	Ozone	√	UV Photometric
9.	Benzene Toluene Xylene (BTX)	√	Online Analyser)
10.	Polycyclic aromatic hydrocarbon (PAH) Benzo-a-pyrine & others	√	Solvent Extraction followed Gas chromatography
11.	PM <sub>2.5</sub>	√	Gravimetric.
12.	Volatile Organics Carbon	x	---
13	Any other (Please attach details on separate sheet)		

## B. Stack gases/source emission

S. No.	Group of parameter	Yes/No (√ / x)	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Particulate matter	√	Gravimetric
2.	Sulphur dioxide	√	Titration
3.	Velocity & flow	√	Velocity meter
4.	Carbon dioxide	√	Flue gas Analyser
5.	Carbon monoxide	√	Flue gas Analyser
6.	Temperature	√	Thermocouple
7.	Oxygen	√	Flue gas Analyser
8.	Oxides of nitrogen	x	---
(ii)	<b>Secondary Parameters</b>		
1.	Acid mist	√	Titration
2.	Ammonia	x	Indophenol blue
3.	Chlorine	√	Methyl orange
4.	Fluoride (Particulate)	X	
5.	Fluoride (Gaseous)	√	
6.	Hydro-chloric acid	√	Titration
7.	Total Hydro carbon	X	
8.	Hydrogen Sulphide	√	Titration
9.	Carbon disulphide	√	Titration
10.	Mercaptan	x	
11	Any other (Please attach details on separate sheet)		

## C. Noise level

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Noise level measurement (20 to 140 dba)	√	Noise level Meter
2.	Ambient Noise & Source specific noise	√	Noise level Meter
3	Any other (Please attach details on separate sheet)		

## D. Meteorological Monitoring

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Ambient Temperature	√	Weather monitoring station
2.	Wind direction	√	Weather monitoring station
3.	Wind speed	√	Weather monitoring station
4.	Relative Humidity	√	Weather monitoring station
(ii)	<b>Secondary Parameters (Minimum required at least one parameter)</b>		
1.	Solar radiation	√	Weather monitoring station
2.	Rain fall	√	Weather monitoring station

Any other (please attach details on separate sheet)

## E. Vehicular Emission Monitoring

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Carbon monoxide	√	CO/HC Analyser
2.	Smoke Density	√	Smoke density meter
3.	Hydrocarbon	√	CO/HC Analyser
(ii)	<b>Secondary Parameters (Optional)</b>		
1.	Oxides of Nitrogen	x	

Any other (please attach details on separate sheet)

## 6. LIST OF INSTRUMENTS REQUIRED FOR AIR MONITORING

S. No.	Instrument	Yes/No	If yes, give Total Nos. **
1.	BTX analyzer (PID/FID detector)	X	---
2.	BTX calibrator	X	--
3.	Charcoal Tubes	X	---
4.	CO Analyzer (Non-dispersive Infrared principle)	√	01
5.	Detector Tubes with Pump of different pollutants (Please specify details)	X	---
6.	Dust analyzer (Beta Attenuation/TOEN)	X	---
7.	Exhaust CO/HC analyzer	√	02
8.	Flue gas analyzer	√	01
9.	Gas Chromatograph with Air sampling port, FID & PFPD detectors	x	---
10.	Handy sampler for gaseous monitoring* (2)	√	02
11.	High Volume sampler with flow controller (4)	x	--

12.	Low flow pump	x	--
13.	Meteorological sensors with mast (WS, WD, Temp., Humidity)* (1)	√	01
14.	Micro balance (Readability 1 µg)	x	--
15.	Multi calibration system	x	--
16.	Multi channel recorder	x	--
17.	Multi calibration kit (portable)	x	--
18.	Noise level meter* (2)	√	01
19.	NO-NO <sub>2</sub> -Nox Analyzer (Chemiluminescence based)	x	--
20.	Ozone analyzer (Ultraviolet)	x	--
21.	Permeation tubes for calibration	x	--
22.	RSPM sampler with flow controller/brush less motor + calibration kit* (4)	√	10
23.	Smoke density meter	√	02
24.	SO <sub>2</sub> Analyzer (Pulsed Fluorescence based)	x	--
25.	Soap bubble meter	x	--
26.	Stack monitoring kit with High Temp. Probes* (2)	√	02
27.	Toddler Bags	√	01
28.	Wet gas meter	x	--
29.	Any other (please specify)	x	--

**(7) LIST OF INFRASTRUCTURAL EQUIPMENT/ITEMS FOR AIR ANALYSIS**

[Please mark Yes (√)/No (x)]

S. No.	Items	Yes/No	If yes, give Total Nos.**
1.	Air conditioner (split type)	√	10
2.	Air Conditioner (Window type)	√	04
3.	Breathing apparatus	x	--
4.	Cold room for sample storage	√	01

5.	Computer with printer	√	05
6.	Constant voltage transformer	√	01
7.	Face shield and helmet	√	01
8.	Gas mask	√	01
9.	Refrigerator (frost free, CFC free)	√	01
10.	Tool Kit (Electrical & Mechanical)	√	10
11.	Uninterrupted power supply (UPS) system	√	05
12.	First aid box	√	01
13.	Trolley for sample transportation	√	01
14.	Fume Hood	√	01
15.	Exhaust System	√	04
16.	Fire Extinguisher	√	03
17.	Electricity Generator	√	01
18.	Gas Cylinder Trolleys	√	01
19.	Any other (please specify)	--	--

**(8) Budgetary information**

SNo	Budget	[year 2022-23]	[year 2023-24]
1.	Sanctioned	No	No
2.	Expenditure	NO	No

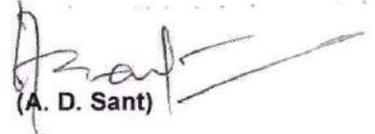
**(9) Manpower Information**

SNo	Designation	Number of Posts in working	Remarks
1.	Chief Scientific Officer	Nil	No Post
2.	Senior Scientific Officer	01	
3.	Chief Chemist	Nil	
4.	Scientist	02	
5.	Jr Scientist	02	
6.	Chemist	02	
7.	Sampler	02	
8.	Laboratory assistant	02	
9.	Laboratory attendant	01	

10.	Research Fellows	Nil	
11.	Field assistant	Nil	
12.	NAMP Staff	05	
13.	NCAP Staff	Nil	
14.	Contractual Staff	Nil	
15.	Others	Nil	

Note: (If any other information )

Ujjain



(A. D. Sant)

Senior Scientific Officer

Regional Laboratory

M.P. Pollution Control Board, Ujjain

Attachments

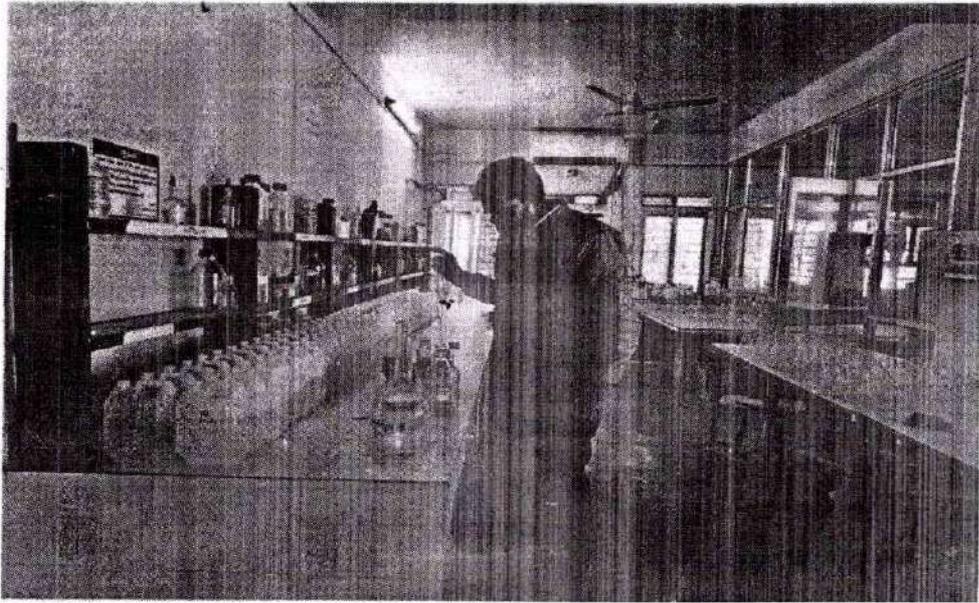


Figure 1 Water and Waste water Section

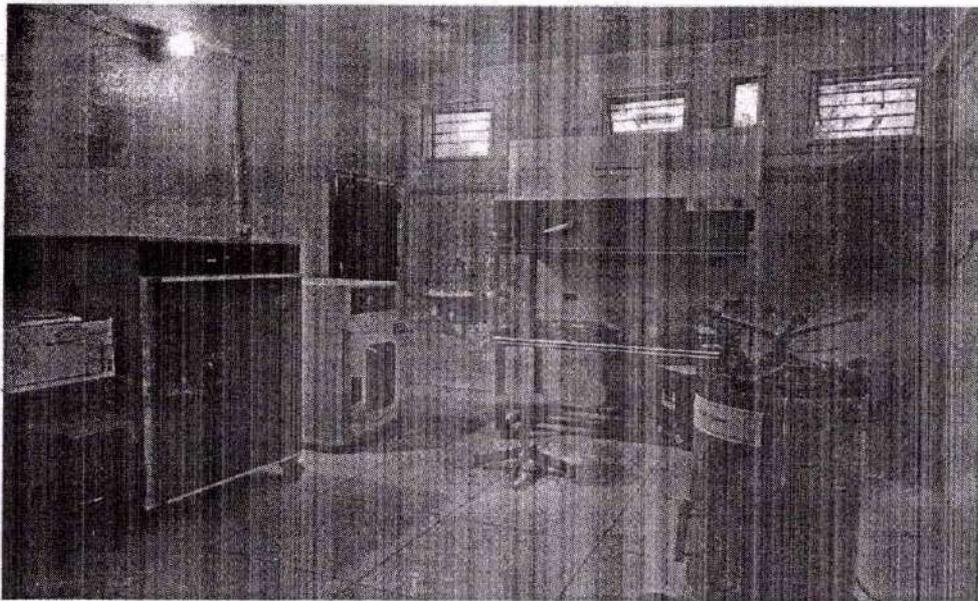


Figure 2 Microbiology Section

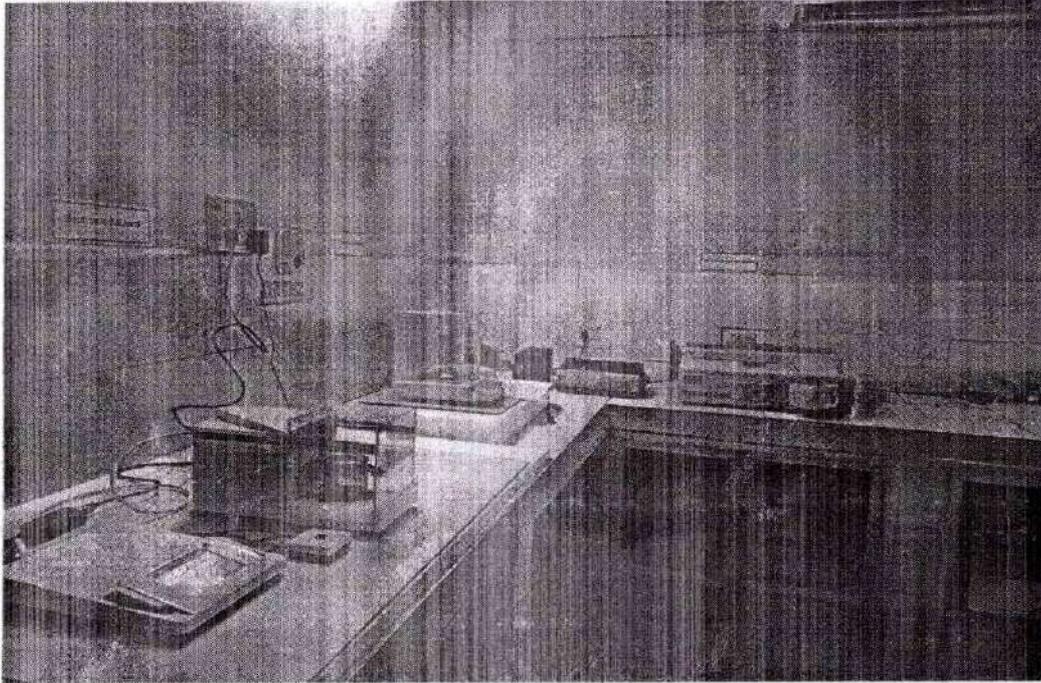


Figure 3 Instrumentation Section

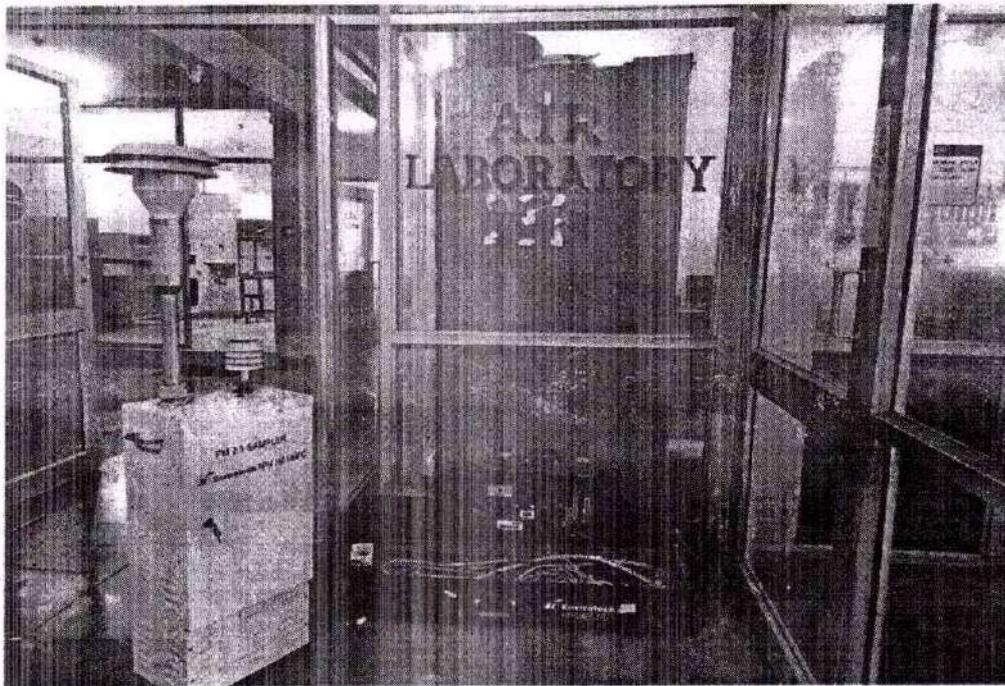


Figure 4 Air and Emission Testing Section

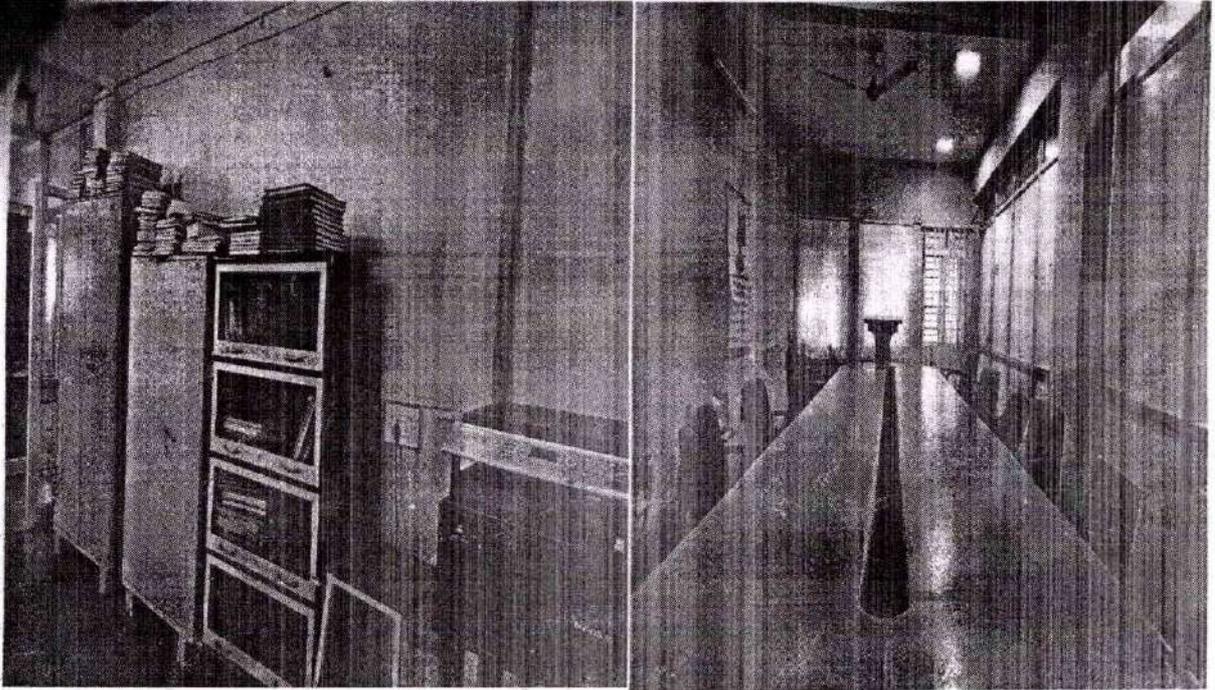


Figure 5 Library / Conference Room



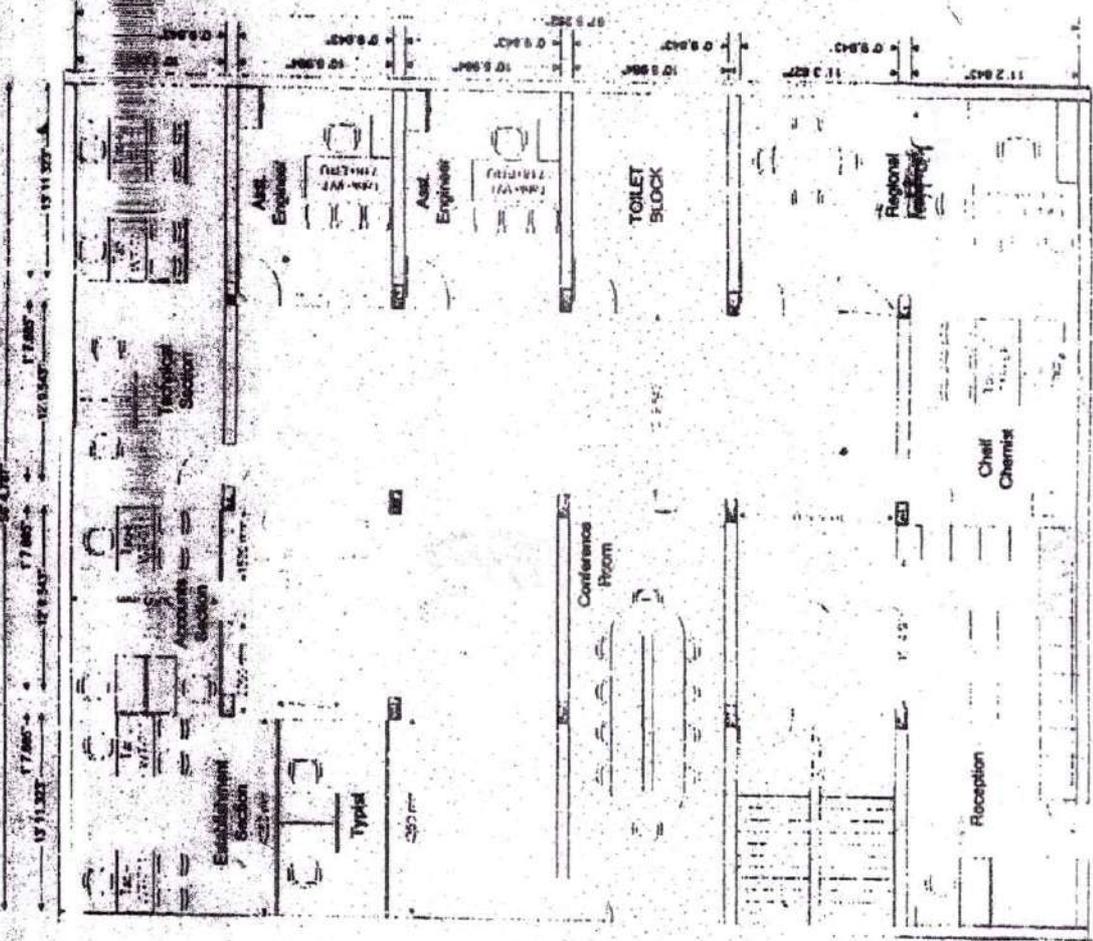
Figure 6 Outer View of the laboratory building




 भारतीय प्रयोगशाला  
 भारतीय प्रयोगशाला  
 अखिल भारत (ए.आर.)

59

ground floor  
 Regional office  
 vllain



**PROFORMA**

INFORMATION REQUIRED FOR COMPLIANCE OF NGT CASE NO. 693/2023 ORDER  
DTAED 23.11.2023

**I. General**

- (i) Name of Regional Office : Regional Office M.P. Pollution Control Board
- (ii) Name of the Regional Laboratory : Regional laboratory M.P. Pollution Control Board

**(iii) Address**

- a) Postal : Deen Dayal Nagar Housing Board Colony Gwalior  
(M.P.)  
PIN Code:- 474020

b) Telephone : 0751-2472020

c) Fax :-

d) E-mail : ropcb-gwalior@mp.gov.in

(iv) Year of establishment of  
laboratory : 1983

(v) Laboratory Incharge details



महाराष्ट्र प्रदूषण नियंत्रण बोर्ड  
दोबदयाल नगर, हाऊसिंग बोर्ड कालोनी, ग्वालियर  
ई-मेल - [board-gwalior@mp.gov.in](mailto:board-gwalior@mp.gov.in) Ph. 0751-2472020



क्रमांक 2928 /केकाप्रनिबो/ग्वा/2023

ग्वालियर, दिनांक 06/12/2023

प्रति,

डॉ. अभय कुमार सक्सेना,  
वरिष्ठ वैज्ञानिक अधिकारी,  
म.प्र. प्रदूषण नियंत्रण बोर्ड,  
भोपाल।

विषय:- राष्ट्रीय हरित अधिकरण में प्रचलित प्रकरण क्रमांक 693/2023 से संबंधित जानकारी भेजने बाबत।

संदर्भ:- आपका मेल दिनांक 06.12.2023

उपरोक्त विषयान्तर्गत राष्ट्रीय हरित अधिकरण में प्रचलित प्रकरण क्रमांक 693/2023 से संबंधित जानकारी निर्धारित प्रोफार्मा में तैयार कर आपकी ओर संलग्न कर प्रेषित है।

संलग्नक:- उपरोक्तानुसार।

( आर.आर.सिंह सेंगर )

क्षेत्रीय अधिकारी

a) Name and Designation : D.K.Sharma (Jr. Scientist)

b) Address : Regional laboratory M.P. Pollution Control Board  
Deen Dayal Nagar Housing Board Colony Gwalior  
(M.P.) PIN Code:- 474020

c) Telephone: 9425787398 Fax :- -- E-mail :- dksharma 7398@gmail.com

(vi) Name of accreditation body(s)/organization i.e. ISO, NABL, GLP, SPCB's, PCC's etc. from which the laboratory has been already recognized/accredited, give details.

S. No.	Name of the certification/recognition body/organization	Accreditation / recognition granted for the activities	Environmental Parameter covered	Validity up to
1.	NABL	Testing Laboratory	<b>Waste Water Parameter</b> (TH, TDS, SS, Chloride, BOD, COD, DO, Oil & Grease, Alkalinity, PH)  <b>Ground Water Parameter</b> (TH, TDS, SS, Chloride, BOD, Alkalinity)	Final Audit Conducted on 14-15 Oct. 2023, Accreditation certificate awaited
2.	SPCB's	Testing Laboratory	<b>General:</b> Colour, Odour, Temperature, pH, electrical conductivity (EC), dissolved oxygen (DO), Turbidity, Total dissolved solids (TDS),  <b>Nutrients:</b> Ammoniacal Nitrogen, Nitrate	SPCB lab Gazette Notified on dated 08-02-2008 by State gov <sup>t</sup> .

			nitrogen, Nitrite nitrogen, Total Phosphate  <b>Demand                  Parameters: BOD &amp;                  COD</b>  <b>Major ions: Na, K,                  Ca, Mg, Carbonates,                  Bicarbonates,                  Chloride, Sulphate</b>  <b>Other organic: F, B</b>  <b>Microbiological: TC                  &amp; FC</b>  <b>Air Monitoring                  Parameter (RSPM                  Pm<sub>10</sub>, &amp; PM<sub>2.5</sub>,                  SO<sub>2</sub>, NO<sub>x</sub> and Pm in                  Stack. )</b>
--	--	--	---

2. Infrastructural details of Laboratory: (please enclose brief lay out plan map of laboratory) with organizational chart and laboratory position in there to:

(i) Total floor space of the environmental laboratory (in sq. mtr):

- a) Water Laboratory = Approx. 60 approxSq. mtr
- b) Biological & Microbiological Laboratory = Approx. 37 Sq. mtr
- c) Air Laboratory = Approx. 44 Sq. mtr
- d) Provide scanned photograph of above with layout plan.

(ii) Details of major projects undertaken pertaining to environmental studies:

*[Please attach separate sheet, if space is insufficient]*

(iii) Which of the following type of analytical tests are being carried out in the laboratory [please mark Yes (✓)/No (x)]:

- |   |  |
|---|--|
| a) Physical :- Yes                              | k) Hazardous waste Characterization :-<br>No |
| b) Inorganics general and non metallic:-<br>Yes | l) Ambient air:- Yes                         |
| c) Inorganic (Trace metals):- No                | m) Source emission:- Yes                     |
| d) Organics (General):- Yes                     | n) Air Toxics:- Yes                          |
| e) Trace Organics:- No                          | o) Hazardous Air Pollutants:- No             |
| f) Microbiological:- Yes                        | p) Volatile Organic Carbon:- No              |
| g) Toxicity:- No                                | m) Noise measurement:- Yes                   |
| h) Biological :- Yes                            | n) Meteorological:- No                       |
| i) Hazardous waste:- No                         | o) Vehicular emission/Auto exhaust:-<br>Yes  |
| j) Soil, sludge, sediment:- No                  |  |

(iv) Laboratory scientists/chemist or officials are fully conversant for sampling, monitoring, preservation and transportation [please tick Yes(✓)/No(x)].

- |  |  |
|--|--|
| (a) Water & wastewater:-<br>Yes            | (i) Hazardous Air Pollutants analysis:- No         |
| (b) Hazardous waste:-No                    | (j) Volatile Organic Carbon analysis:-No           |
| (c) Solid waste:-No                        | (k) Noise monitoring:-yes                          |
| (d) Soil:-Yes                              | (l) Meteorological monitoring:-NO                  |
| (e) Municipal waste:- Yes                  | (m) Source emission:-yes                           |
| (f) Biomedical waste:-Yes                  | (n) Auto exhaust monitoring:-Yes                   |
| (g) Ambient air/fugitive<br>emission:- Yes | (o) On line ambient air quality monitoring:-<br>NO |
| (h) Air Toxics analysis:-No                |  |

Laboratory scientists/chemists or officials are capable of analyzing desired/ relevant parameters in various types of matrix [please tick [Yes(√)/No (x)]

- a. Liquid Samples (water & wastewater):-Yes
- b. Solid Samples (soil/mud/solid waste/sludge etc.): -No
- c. Semi-solid samples (sludge/slurry):-No
- d. Gaseous samples (Ambient air, source emission, vehicular emission):-Yes

### 3. LIST OF PARAMETERS BEING ANALYSED FOR WATER & WASTE WATER & SOLID SAMPLES

A) Physical Tests : [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Conductivity:-Yes	11.	Flocculation test (Jar test):-No
2.	Colour:-Yes	12.	Odour:-Yes
3.	pH:-Yes	13.	Salinity:-No
4.	Fixed & volatile solids:-Yes	14.	Settleable solids:-Yes
5.	Total solids:-Yes	15.	Sludge volume index (SVI):-No
6.	Total dissolved solids:-Yes		
7.	Total suspended solids:-Yes		
8.	Turbidity:-Yes		
9.	Temperature:-Yes		
10.	Velocity & discharge Measurement of industrial effluent stream:-No		

B) Inorganic [Please mark Yes (√)/No (x)]

(i) General & Non-metallic

S. No.	Parameter	S. No.	Parameter
1.	Acidity:-Yes	14.	Bromide:-No
2.	Alkalinity:-Yes	15.	Carbon dioxide:-No
3.	Ammonical nitrogen:-Yes	16.	Chlorine demand:-No
4.	Chloride:-Yes	17.	Iodine:-No
5.	Chlorine residual:-Yes	18.	Sulphite:-No
6.	Dissolved oxygen:-Yes	19.	Silica:-No
7.	Fluoride:-Yes	20.	Cyanide:-No
8.	Total hardness:-Yes	21.	Sulphide:-No
9.	Total kjehldal nitrogen (TKN) :-Yes		
10.	Nitrite nitrogen:-Yes		
11.	Nitrate nitrogen:-Yes		
12.	Phosphate:-Yes		
13.	Sulphate:-Yes		

Trace Metals [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Boron (B) :-Yes	16.	Arsenic (As) :-No
2.	Cadmium (Cd) :-No	17.	Aluminium (Al) :-No
3.	Calcium (Ca):-Yes	18.	Beryllium (Be) :-No
4.	Chromium (Cr) Total:-Yes	19.	Barium (Ba) :-No
5.	Chromium (Cr) Hexavalent:-Yes	20.	Lithium (Li) :-No
6.	Copper (Cu) :-No	21.	Manganese (Mn) :-No
7.	Iron (Fe) :-Yes	22.	Selenium (Se) :-No
8.	Lead (Pb) :-No	23.	Silver (Ag) :-No
9.	Magnesium (Mg):-Yes	24.	Strontium (Sr) :-No
10.	Mercury (Hg) :-No	25.	Tin (Sn) :-No
11.	Nickel (Ni) :-No	26.	Antimony (Sb) :-No
12.	Potassium (K):-Yes	27.	Cobalt (Co) :-No
13.	Sodium (Na):-Yes	28.	Vanadium (V) :-No
14.	Sodium absorption ratio (SAR) :- No		
15.	Zinc (Zn) :-No		

(C) Organics (General) and Trace Organics [Please mark Yes(√)/No (x) and give details at Appendix J for Trace organics]

S. No.	Parameter	S. No.	Parameter
1.	Bio-chemical oxygen demand (BOD):Yes	6.	Total organic carbon (TOC):-No

2.	Chemical oxygen demand (COD):- Yes	7.	Adsorbable organic halide (AOX):-No
3.	Oil & Grease:-Yes	8.	Surfactants:-No
4.	Phenol:-No	9.	Tannin & lignin:-No
5.	Pesticide (each):-No	10.	Poly-chlorinated biphenyl (PCB's) each:-No
	(i) Organo-chlorine (BHC, DDT, Aldrin, Endosulphan):	11.	Polynuclear aromatic hydrocarbon (PAH) each:-No
	(ii) Organo nitrogen-phosphorous (Malathion, methyl parathion, Chloropyriphos)	12.	Organic Carbon (in solid) :-No
		13.	Carbon/Nitrogen ratio:-No

D) Microbiological Tests [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Total Coliform:-Yes	5.	Total plate count:-No
2.	Faecal Coliform:-Yes	6.	Enterococcus:-No
3.	Faecal Streptococci:-No	37.	Coliphage:-NO
4.	E. Coli:-No		

E) Toxicological Tests [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent):- No	1.	Bio-accumulation, bio magnification and bio-transformation studies
		2.	Estimation of the effect at tissue level
		3.	Measurement of toxicity using Daphnia or other organism
		4.	Measurement of toxicity factor using zebra fish (dimensionless toxicity test

Biological Tests [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Benthic organism identification and count:-No	5.	Saprobity Index:-No
2.	Macrophytic identification:-No	6.	Chlorophyll :-No
3.	Planktonic identification count:-No	7.	Primary productivity:-No
4.	Measurement of various diversity index:-No	8.	P/R Ratio:-No

G) Characterization of Hazardous Waste [Please mark Yes(√)/No (x)]

S. No.	Parameter
1.	Preparation of Leachate (TCLP extract/water extract) :-No
2.	Corrosivity:-No
3.	Ignibility (Flash point) :-No
4.	Reactivity:-No
5.	Toxicity:-No
6.	Measurement of heavy metals/pesticides in the waste/leachate:-No

H) Soil/Sludge/Sediment and Solid Waste [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Boron:-No	16	Ammonia:-No
2.	Cation Exchange Capacity (CEC) :-No	17	Bicarbonate:-No

S. No.	Parameter	S. No.	Parameter
3.	Electrical Conductivity (EC) :-No	18	Calcium:-No
4.	Nitrogen available:-No	19	Calcium carbonate:-No
5.	Organic carbon/matter (chemical method) :-No	20	Chloride:-No
6.	pH:-No	21	Colour:-No
7.	Phosphorous (available) :-No	22	Exchangeable sodium percentage (ESP) :-No
8.	Phosphate (ortho) :-No	23	Gypsum requirement:-No
9.	Phosphate (total) :-No	24	H. Acid:-No
10.	Potassium:-No	25	Heavy metal:-No
11.	SAR in soil extract:-No	26	Magnesium:-No
12.	Sodium:-No	27	Mechanical soil analysis:-No
13.	Soil moisture:-No	28	Nitrate:-No
14.	TKN:-No	29	Nitrite:-No
15.	Calorific value:-No	30	PAH:-No
		31	Pesticide:-No
		32	Potash (available) :-No
		33	Sulphate:-No
		34	Sulphur:-No
		35	TOC:-No
		36	Total water soluble salt:-No
		37	Water holding capacity:-No

## 4. LIST OF INSTRUMENTS FOR WATER, WASTEWATER & SOLID SAMPLES

### 1) LIST OF EQUIPMENT GENERAL ANALYSIS

[Note: Please mark Yes (√)/No(x)]

S. No.	EQUIPMENT	Yes/No	Nos. available**
<b>BASIC EQUIPMENTS</b>			
1.	Ice Box/s* (2)	yes	04
2.	Filtration assembly* (1)	yes	01
3.	Heating Mantle	No	-
4.	Stop watch	No	
5.	Hot air oven* (2)	yes	02
6.	Hot plate* (2)	yes	02
7.	Muffle furnace* (1)	yes	02
8.	Standard weight	yes	02
9.	Water bath	yes	01
10.	Thermometer/s* (4)	yes	06
11.	Refrigerator/s big size* 300 litres or above (2)	yes	01
<b>SPECIFIC EQUIPMENTS</b>			
1.	Autoclave* (1)	yes	02
2.	Bottom sampler	No	-
3.	BOD Incubator* (1)	yes	03
4.	Centrifuge* (1)	No	-
5.	Aquarium for bioassay test* (4)	No	-
6.	COD Digester with aluminium heating blocks * (1)	yes	02
7.	Colony Counter	No	-
8.	Depth Sampler	No	-
9.	Digester with condensers	yes	01
10.	Digestion chamber* (1)	No	-
11.	Dissolved oxygen sampler	No	-
12.	Flocculator ( Jar testing apparatus)	No	-

S. No.	EQUIPMENT	Yes/No	Nos. available**
13.	Flow meter	No	-
14.	Incubator for bacteriological test* (2)	yes	02
15.	Laminar flow* (1)	yes	01
16.	Magnetic Stirrer with hot plate* (2)	yes	01
17.	Mechanical Shaker *(1)	No	-
18.	Microwave digester	No	-
19.	TKN Analyzer semi automatic with aluminum block digester	No	-
20.	Ultrasonic water bath	No	-
21.	Vacuum pump* (1)	yes	01
22.	Water purification / distillation assembly* (1)	yes	01
23.	Ekman Dredge	No	-
24.	Water sampler	No	-
25.	Oil & Grease sampler	No	-
26.	Water Testing kit	No	-
27.	Chloroscope for residual chlorine	No	-
28.	Any other equipment (please attach details on separate sheet)	-	-

## (b) LIST OF INSTRUMENTS WATER/WASTE WATER ANALYSIS

S. No.	Name of instrument	Yes/No	Total Nos. **
<b>BASIC INSTRUMENTS</b>			
1.	Analytical Balance +* (1) 1 mg	yes	01
2.	Conductivity Meter* (1)	yes	01
3.	Dissolved oxygen meter	No	-
4.	pH Meter with combined glass electrode* (1)	yes	01
5.	Turbidity meter* (1)	yes	01
<b>SPECIFIC INSTRUMENTS</b>			
1.	Alpha/Beta Radioactivity Counter	No	-
2.	Atomic Absorption Spectrophotometer (Flame) with the following cathode lamps + (✓ available HCL)* (1)	No	-

(i) Aluminium	(ii) Antimony		
(iii) Arsenic	(iv) Barium		
(v) Barium	(vi) Boron		
(vii) Cadmium	(viii) Calcium		
(ix) Chromium	(x) Copper		
(xi) Iron	(xii) Lithium		
(xiii) Lead	(xiv) Magnesium		
(xv) Manganese	(xvi) Mercury		
(xvii) Nickel	(xviii) Potassium		
(xix) Selenium	(xx) Silver		
(xxi) Sodium	(xxii) Strontium		
(xxiii) Tin	(xxiv) Cobalt		
(xxv) Vanadium	(xxvi) Zinc		
	(xxvii) Other, pl. specify		
3.	Atomic Absorption Spectrophotometer with Graphite Furnace and Hydride Generation System	No	-
4.	Organic Halogen Analyzer (AOX/TOX)	No	-
5.	Binocular Microscope	No	-
6.	Flame Photometer* (1)	yes	01
7.	Gas Chromatograph with following detector*++ (1)	No	-
	- ECD-NPD		
	- FID-TID		
	- FPD		
	- Other detector		
8.	Gas Chromatograph with Mass Spectrometer (GC-MS)	No	-
9.	High Pressure Liquid Chromatograph (HPLC)	No	-
10.	Ion Chromatograph	No	-
11.	Inductively Coupled Plasma (ICP) Spectrometer	No	-
12.	Mercury Analyzer Digital* (1)	No	-
13.	Portable Analyzer Kit (DO, pH, Temp. Cond.)	No	-
14.	Precision Balance weighing up to 1 mg* (water / air)	yes	01
15.	Rotary Evaporator* (1)	No	-

16.	Spectrophotometer (Visible)* or Ultraviolet & visible* (1)	yes	01
17.	Stereo Microscope	No	-
18.	Total Organic Carbon Analyzer	No	-
19.	Any other instruments (Please enclose details on separate sheet)	-	-

## (c) LIST OF INSTRUMENTS FOR HAZARDOUS WASTE ANALYSIS

S. No.	Instruments	Nos. Available
1.	Bomb colorimeter	No
2.	Elemental analyzer	No
3.	Flash point apparatus	No
4.	Moisture content meter	No
5.	Rotary evaporator	No
6.	Toxicity characteristic leaching procedure (TCLP) extractor	No
7.	Toxic Gas analyzer	No
8.	X-ray fluorescence (XRF) Spectrometer	No
9.	Zero head space extractor (ZHE)	No
10.	Any other equipment (please attach details on separate sheet)	No

## (d) LIST OF MAINTENANCE CONTRACT STATUS OF IMPORTANT SOPHISTICATED INSTRUMENTS [Note: Please mark Yes (√)/No (x)]

S. No.	Name of the instrument	Repair job undertaken on Annual Maintenance contract / emergency call basis	Whether sufficient spares available
1.	AAS (Flame & Flameless)	No	-
2.	AOX	No	-
3.	Total Organic Carbon Analyzer	No	-

4.	Gas Chromatograph	No	-
5.	Water purification system	No	-
6.	Analytical balance	No	-
7.	Specific ion meter	No	-
8.	Mercury analyzer	No	-
9.	UV-Visible spectrophotometer	No	-
10.	Alpha/Beta Radioactivity Counter	No	-
11.	Any other equipment (please attach details on separate sheet)	No	-

**(e) REFERENCE MATERIAL (RMS) AND CERTIFIED REFERENCE MATERIAL (CRMS)**

S. No.	Parameters	Availability of RMS/CRMS	
		(√/X)	Nos. of standards
1.	Trace Metals	No	-
2.	Organo-chlorine pesticides	No	-
3.	Organo-nitrogen phosphorous pesticides	No	-
4.	Polychlorinated Biphenyls (PCB's)	No	-
5.	Polycyclic aromatic hydrocarbon (PAH)	No	-
6.	Benzene, Ethylene, Toluene & Xylene	No	-
7.	Dioxins and Furans	No	-
8.	Any other (please attach details on separate sheet)	No	-

**f) LIST OF GLASS APPARATUS AND DISTILLATION ASSEMBLIES**

[Note: Please mark Yes (√)/No (x)]

S. No.	Particulars	Yes or No	Total nos. available

	Fluoride distillation assembly	No	-
2.	Cyanide distillation assembly	No	-
3.	Ammonia distillation assembly	No	-
4.	Water distillation assembly	yes	01
5.	Soxlet extraction assembly	yes	01
6.	Arsenic estimation assembly	No	-
7.	Phenol distillation assembly	No	-
8.	Any other (please enclose details on separate sheet)	No	-

### (5) AIR QUALITY PARAMETERS

Facilities available [Please mark Yes (✓)/No (x)]

#### A. Ambient Air / Fugitive Emissions

S. No.	Group of parameter	Yes/No (✓/x)	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Nitrogen dioxide as NO <sub>2</sub>	yes	Jacob & Hochheiser modified method
2.	Sulphur dioxide (SO <sub>2</sub> )	yes	Modified west & gaeke method
3.	Total suspended particulate matter	yes	Gravimetric method
4.	Respirable suspended particulate matter (PM <sub>10</sub> )	yes	Gravimetric method
(ii)	<b>Secondary Parameters</b>		
1.	Ammonia	No	
2.	Carbon monoxide	No	
3.	Chlorine	No	
4.	Fluoride	No	

	Non methane hydrocarbon	No	
	Lead	No	
7.	Methane	yes	Methane detector
8.	Ozone	No	
9.	Benzene Toluene Xylene (BTX)	No	
10.	Polycyclic aromatic hydrocarbon (PAH) Benzo-a-pyrine & others	No	
11.	PM <sub>2.5</sub>	yes	Gravimetric method
12.	Volatile Organics Carbon	No	
13	Any other (please attach details on separate sheet)	No	

**B. Stack gases/source emission**

S. No.	Group of parameter	Yes/No (√ / x)	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Particulate matter	yes	
2.	Sulphur dioxide	yes	
3.	Velocity & flow	yes	
4.	Carbon dioxide	yes	Flue Gas Analyser
5.	Carbon monoxide	yes	Flue Gas Analyser
6.	Temperature	yes	Flue Gas Analyser
7.	Oxygen	yes	Flue Gas Analyser
8.	Oxides of nitrogen	yes	Flue Gas Analyser
(ii)	<i>Secondary Parameters</i>		
1.	Acid mist	No	
2.	Ammonia	No	
3.	Chlorine	No	
4.	Fluoride (Particulate)	No	

*Ch*

5.	Fluoride (Gaseous)	No	
6.	Hydro-chloric acid	No	
7.	Total Hydro carbon	No	
8.	Hydrogen Sulphide	No	
9.	Carbon disulphide	No	
10.	Mercaptan	No	
11	Any other (please attach details on separate sheet)	No	

### C. Noise level

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Noise level measurement (20 to 140 dba)	yes	Sound level Meter
2.	Ambient Noise & Source specific noise	yes	Sound level Meter
3	Any other (please attach details on separate sheet)	-	

### D. Meteorological Monitoring

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Ambient Temperature	yes	CAAQMS
2.	Wind direction	yes	CAAQMS
3.	Wind speed	yes	CAAQMS
4.	Relative Humidity	yes	CAAQMS
(ii)	<b>Secondary Parameters (Minimum required at least one parameter)</b>	No	

1.	Solar radiation		
2.	Rain fall		

Any other (please attach details on separate sheet)

### E. Vehicular Emission Monitoring

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Carbon monoxide	yes	COHC Analyser
2.	Smoke Density	yes	
3.	Hydrocarbon	yes	
(ii)	<b>Secondary Parameters (Optional)</b>	No	
1.	Oxides of Nitrogen	-	

Any other (please attach details on separate sheet)

### 6. LIST OF INSTRUMENTS REQUIRED FOR AIR MONITORING

S. No.	Instrument	Yes/No	If yes, give Total Nos. **
1.	BTX analyzer (PID/FID detector)	yes	01
2.	BTX calibrator	yes	01
3.	Charcoal Tubes	yes	01
4.	CO Analyzer (Non-dispersive Infrared principle)	yes	01
5.	Detector Tubes with Pump of different pollutants (Please specify details)	yes	01
6.	Dust analyzer (Beta Attenuation/TOEN)	yes	01
7.	Exhaust CO/HC analyzer	yes	01
8.	Flue gas analyzer	yes	01
9.	Gas Chromatograph with Air sampling port, FID & PFPD detectors	yes	01
10.	Handy sampler for gaseous monitoring* (2)	yes	01

11.	High Volume sampler with flow controller (4)	yes	04
12.	Low flow pump	yes	01
13.	Meteorological sensors with mast (WS, WD, Temp., Humidity)* (1)	yes	01
14.	Micro balance (Readability 1 µg)	yes	01
15.	Multi calibration system	yes	01
16.	Multi channel recorder	yes	01
17.	Multi calibration kit (portable)	yes	01
18.	Noise level meter* (2)	yes	02
19.	NO-NO <sub>2</sub> -Nox Analyzer (Chemiluminescence based)	yes	01
20.	Ozone analyzer (Ultraviolet)	yes	01
21.	Permeation tubes for calibration	yes	01
22.	RSPM sampler with flow controller/brush less motor + calibration kit* (4)	yes	04
23.	Smoke density meter	yes	01
24.	SO <sub>2</sub> Analyzer (Pulsed Fluorescence based)	yes	01
25.	Soap bubble meter	yes	01
26.	Stack monitoring kit with High Temp. Probes* (2)	yes	02
27.	Toddler Bags	yes	01
28.	Wet gas meter	yes	01
29.	Any other (please specify)		

**(7) LIST OF INFRASTRUCTURAL EQUIPMENT/ITEMS FOR AIR ANALYSIS**

[Please mark Yes (√)/No (x)]

S. No.	Items	Yes/No	If yes, give Total Nos.**
1.	Air conditioner (split type)	yes	04
2.	Air Conditioner (Window type)	No	-
3.	Breathing apparatus	yes	02
4.	Cold room for sample storage	yes	01
5.	Computer with printer	yes	04
6.	Constant voltage transformer		
7.	Face shield and helmet	yes	05

*[Handwritten signature]*

8.	Gas mask	yes	06
9.	Refrigerator (frost free, CFC free)	yes	01
10.	Tool Kit (Electrical & Mechanical)	yes	01
11.	Uninterrupted power supply (UPS) system	yes	01
12.	First aid box		
13.	Trolley for sample transportation	yes	01
14.	Fume Hood	yes	01
15.	Exhaust System		
16.	Fire Extinguisher		
17.	Electricity Generator		
18.	Gas Cylinder Trolleys	yes	01
19.	Any other (please specify)		

**(8) Budgetary information**

SNo	Budget	[year 2022-23]	[year 2023-24]
1.	Sanctioned		
2.	Expenditure		

**(9) Manpower Information**

SNo	Designation	Number of Posts in working	Remarks
1.	Chief Scientific Officer	0	
2.	Senior Scientific Officer	0	
3.	Chief Chemist	0	
4.	Scientist	0	
5.	Jr Scientist	02	
6.	Chemist	03	
7.	Sampler	03	
8.	Laboratory assistant	0	
9.	Laboratory attendant	0	
10.	Research Fellows	0	
11.	Field assistant	0	
12.	NAMP Staff	0	
13.	NCAP Staff	0	
14.	Contractual Staff	0	
15.	Others	0	

Note: (if any other information )



  
D.K. SHARMA

JR. SCIENTIST

Name of Place

GWALIOR

Name, Designation & Signature of Laboratory In charge

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**PROFORMA**INFORMATION REQUIRED FOR COMPLIANCE OF NGT CASE NO. 693/2023 ORDER  
DTAED 23.11.2023

## 1. General

(i) Name of Regional Office : M.P. Pollution Control Board, Jabalpur

(ii) Name of the Regional Laboratory : Regional Laboratory Jabalpur

## (iii) Address

a) Postal : Regional Office, M.P. Pollution Control Board  
Scheme No. 05, Plot No. 455/456  
Vijay Nagar, Jabalpur (M.P.), Pin Code-482002

b) Telephone : 0761-4042780

c) Fax : 0761-4042780

d) E-mail : romppcbjbp@rediffmail.com

(iv) Year of establishment of  
laboratory : 1978

## (v) Laboratory Incharge details

a) Name and Designation : T. S. Banerjee, Scientist

b) Address : Scheme No. 05, Plot No. 455/456  
Vijay Nagar, Jabalpur (M.P.), Pin Code-482002c) Telephone:- 0761-4042780 Fax:- 0761-4042780  
E-mail:- romppcbjbp@rediffmail.com

- (vi) Name of accreditation body(s)/organization i.e. ISO, NABL, GLP, SPCB's, PCC's etc. from which the laboratory has been already recognized/accredited, give details.

S. No.	Name of the certification/recognition body/organization	Accreditation / recognition granted for the activities	Environmental Parameter covered	Validity up to
	NABL as per ISO/IEC 17025-2017	Water and Waste Water testing	Ammonical Nitrogen as NH <sub>3</sub> , BOD, Boron, COD, Dissolved Oxygen, Fluoride, Nitrogen Nitrate, Nitrogen Nitrite, Oil & Grease, pH, Phosphate as PO <sub>4</sub> , Residual Chlorine as Cl <sub>2</sub> , Specific Conductance, Sulphate as SO <sub>4</sub> , Total Dissolved Solid, Total Suspended Solid, Acidity as CaCO <sub>3</sub> , Alkalinity as CaCO <sub>3</sub> , Calcium Hardness as CaCO <sub>3</sub> , Chloride as Cl, Magnesium Hardness, Potassium as K, Sodium as Na, Temperature, Total Hardness as CaCO <sub>3</sub> , Turbidity,	Renewal of Accreditation Audit due on 16- 17 dec 2023

2. Infrastructural details of Laboratory: (please enclose brief lay out plan map of laboratory) with organizational chart and laboratory position in there to:

(i) Total floor space of the environmental laboratory (in sq. mtr): 140.66 .

- a) Water Laboratory = 110.66 Sq. mtr
- b) Biological & Microbiological Laboratory = 30 Sq. mtr
- c) Air Laboratory = 16 Sq. mtr

d) Provide scanned photograph of above with layout plan. *Annex 1*

(ii) Details of major projects undertaken pertaining to environmental studies:

*[Please attach separate sheet, if space is insufficient]*

(iii) Which of the following type of analytical tests are being carried out in the laboratory [please mark Yes ((√))/No (x)]:

- |  |   |
|--|---|
| a) Physical (√)                            | k) Hazardous waste Characterization (x) |
| b) Inorganics general and non metallic (√) | l) Ambient air (√)                      |
| c) Inorganic (Trace metals) (√)            | m) Source emission (√)                  |
| d) Organics (General) (x)                  | n) Air Toxics (√)                       |
| e) Trace Organics (x)                      | o) Hazardous Air Pollutants (x)         |
| f) Microbiological (√)                     | p) Volatile Organic Carbon (x)          |
| g) Toxicity (√)                            | m) Noise measurement (√)                |
| h) Biological (√)                          | n) Meteorological (x)                   |
| i) Hazardous waste (x)                     | o) Vehicular emission/Auto exhaust (√)  |
| j) Soil, sludge, sediment (x)              |   |

(iv) Laboratory scientists/chemist or officials are fully conversant for sampling, monitoring, preservation and transportation [please tick Yes((√))/No(x)].

- |                                       |  |
|---------------------------------------|--|
| (a) Water & wastewater (√)            | (i) Hazardous Air Pollutants analysis (x)      |
| (b) Hazardous waste (x)               | (j) Volatile Organic Carbon analysis (√)       |
| (c) Solid waste (x)                   | (k) Noise monitoring (√)                       |
| (d) Soil (x)                          | (l) Meteorological monitoring (x)              |
| (e) Municipal waste (√)               | (m) Source emission (√)                        |
| (f) Biomedical waste (x)              | (n) Auto exhaust monitoring (x)                |
| (g) Ambient air/fugitive emission (√) | (o) On line ambient air quality monitoring (x) |
| (h) Air Toxics analysis (√)           |  |

(v) Laboratory scientists/chemists or officials are capable of analyzing desired/ relevant parameters in various types of matrix [please tick [Yes((√))/No (x)]]

- a. Liquid Samples (water & wastewater) (√)
- b. Solid Samples (soil/mud/solid waste/sludge etc.) (x)

- c. Semi-solid samples (sludge/slurry) (x)
- d. Gaseous samples (Ambient air, source emission, vehicular emission) (√)

### 3. LIST OF PARAMETERS BEING ANALYSED FOR WATER & WASTE WATER & SOLID SAMPLES

#### A) Physical Tests : [Please mark Yes((√))/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Conductivity (√)	11.	Flocculation test (Jar test)
2.	Colour (√)	12.	Odour (√)
3.	pH (√)	13.	Salinity (x)
4.	Fixed & volatile solids (√)	14.	Settleable solids (x)
5.	Total solids (√)	15.	Sludge volume index (SVI) (x)
6.	Total dissolved solids (√)		
7.	Total suspended solids (√)		
8.	Turbidity (√)		
9.	Temperature (√)		
10.	Velocity & discharge Measurement of industrial effluent stream (x)		

#### B) Inorganic [Please mark Yes ((√))/No (x)]

##### (i) General & Non-metallic

S. No.	Parameter	S. No.	Parameter
1.	Acidity (√)	14.	Bromide (x)
2.	Alkalinity (√)	15.	Carbon dioxide (x)
3.	Ammonical nitrogen (√)	16.	Chlorine demand (x)
4.	Chloride (√)	17.	Iodine (x)

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5.	Chlorine residual (√)	18.	Sulphite (x)
6.	Dissolved oxygen (√)	19.	Silica (x)
7.	Fluoride (√)	20.	Cyanide (x)
8.	Total hardness (√)	21.	Sulphide (x)
9.	Total kjehdal nitrogen (TKN) (√)		
10.	Nitrite nitrogen (√)		
11.	Nitrate nitrogen (√)		
12.	Phosphate (√)		
13.	Sulphate (√)		

## (ii) Trace Metals [Please mark Yes((√))/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Boron (B) (√)	16.	Arsenic (As) (√)
2.	Cadmium (Cd) x	17.	Aluminium (Al) (x)
3.	Calcium (Ca) (√)	18.	Beryllium (Be) (x)
4.	Chromium (Cr) Total (√)	19.	Barium (Ba) (x)
5.	Chromium (Cr) Hexavalent (√)	20.	Lithium (Li) (x)
6.	Copper (Cu) (√)	21.	Manganese (Mn) (√)
7.	Iron (Fe) (√)	22.	Selenium (Se) (x)
8.	Lead (Pb) (√)	23.	Silver (Ag) (x)
9.	Magnesium (Mg) (√)	24.	Strontium (Sr) (x)
10.	Mercury (Hg) (√)	25.	Tin (Sn) (x)
11.	Nickel (Ni) (√)	26.	Antimony (Sb) (x)
12.	Potassium (K) (√)	27.	Cobalt (Co) (√)
13.	Sodium (Na) (√)	28.	Vanadium (V) (x)
14.	Sodium absorption ratio (SAR) (√)		
15.	Zinc (Zn) (√)		

- (C) Organics (General) and Trace Organics [Please mark Yes((√))/No (x) and give details at Appendix J for Trace organics]

S. No.	Parameter	S. No.	Parameter
1.	Bio-chemical oxygen demand (BOD) (√)	6.	Total organic carbon (TOC) (x)
2.	Chemical oxygen demand (COD) (√)	7.	Adsorbable organic halide (AOX) (x)
3.	Oil & Grease (√)	8.	Surfactants (x)
4.	Phenol (x)	9.	Tannin & lignin (x)
5.	Pesticide (each) (x)	10.	Poly-chlorinated biphenyl (PCB's) each (x)
	(i) Organo-chlorine (BHC, DDT, Aldrin, Endosulphan) (x)	11.	Polynuclear aromatic hydrocarbon (PAH) each (x)
	(ii) Organo nitrogen-phosphorous (Malathion, methyl parathion, Chloropyriphos) (x)	12.	Organic Carbon (in solid) (x)
		13.	Carbon/Nitrogen ratio (x)

- D) Microbiological Tests [Please mark Yes((√))/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Total Coliform (√)	5.	Total plate count (x)
2.	Faecal Coliform (√)	6.	Enterococcus (x)
3.	Faecal Streptococci (√)	37.	Coliphage (x)
4.	E. Coli (x)		

- E) Toxicological Tests [Please mark Yes((√))/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent)	1.	Bio-accumulation, bio magnification and bio-transformation studies
		2.	Estimation of the effect at tissue level

		3.	Measurement of toxicity using Daphnia or other organism
		4.	Measurement of toxicity factor using zebra fish (dimensionless toxicity test (√))

F) Biological Tests [Please mark Yes((√))/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Benthic organism identification and count (x)	5.	Saprobity Index (x)
2.	Macrophytic identification (x)	6.	Chlorophyll (x)
3.	Planktonic identification count (x)	7.	Primary productivity (x)
4.	Measurement of various diversity index (x)	8.	P/R Ratio (x)

G) Characterization of Hazardous Waste [Please mark Yes((√))/No (x)]

S. No.	Parameter
1.	Preparation of Leachate (TCLP extract/water extract) (x)
2.	Corrosivity (x)
3.	Ignibility (Flash point) (x)
4.	Reactivity (x)
5.	Toxicity (x)
6.	Measurement of heavy metals/pesticides in the waste/leachate (x)

H) Soil/Sludge/Sediment and Solid Waste [Please mark Yes((√))/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Boron (x)	16	Ammonia (x)
2.	Cation Exchange Capacity (CEC) (x)	17	Bicarbonate (x)

S. No.	Parameter	S. No.	Parameter
3.	Electrical Conductivity (EC) (x)	18	Calcium (x)
4.	Nitrogen available (x)	19	Calcium carbonate (x)
5.	Organic carbon/matter (chemical method) (x)	20	Chloride (x)
6.	pH (x)	21	Colour (x)
7.	Phosphorous (available) (x)	22	Exchangeable sodium percentage (ESP) (x)
8.	Phosphate (ortho) (x)	23	Gypsum requirement (x)
9.	Phosphate (total) (x)	24	H. Acid (x)
10.	Potassium (x)	25	Heavy metal (x)
11.	SAR in soil extract (x)	26	Magnesium (x)
12.	Sodium (x)	27	Mechanical soil analysis (x)
13.	Soil moisture (x)	28	Nitrate (x)
14.	TKN (x)	29	Nitrite (x)
15.	Calorific value (x)	30	PAH (x)
		31	Pesticide (x)
		32	Potash (available) (x)
		33	Sulphate (x)
		34	Sulphur (x)
		35	TOC (x)
		36	Total water soluble salt (x)
		37	Water holding capacity (x)

#### 4. LIST OF INSTRUMENTS FOR WATER, WASTEWATER & SOLID SAMPLES

##### a) LIST OF EQUIPMENT GENERAL ANALYSIS

[Note: Please mark Yes ((√))/No(x)]

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S. No.	EQUIPMENT	Yes/No	Nos. available**
<b>BASIC EQUIPMENTS</b>			
1.	Ice Box/s* (2)	(√)	06
2.	Filtration assembly* (1)	(√)	1
3.	Heating Mantle	(x)	
4.	Stop watch	(x)	
5.	Hot air oven* (2)	(√)	1
6.	Hot plate* (2)	(√)	1
7.	Muffle furnace* (1)	(√)	1
8.	Standard weight	(√)	1
9.	Water bath	(√)	1
10.	Thermometer/s* (4)	(√)	4
11.	Refrigerator/s big size* 300 litres or above (2)	(√)	1
<b>SPECIFIC EQUIPMENTS</b>			
1.	Autoclave* (1)	(√)	1
2.	Bottom sampler	(x)	
3.	BOD Incubator* (1)	(√)	1
4.	Centrifuge* (1)	(x)	
5.	Aquarium for bioassay test* (4)	(√)	1
6.	COD Digester with aluminium heating blocks * (1)	(√)	1
7.	Colony Counter	(x)	
8.	Depth Sampler	(x)	
9.	Digester with condensers	(√)	19
10.	Digestion chamber* (1)	(x)	
11.	Dissolved oxygen sampler	(x)	
12.	Flocculator ( Jar testing apparatus)	(x)	
13.	Flow meter	(x)	
14.	Incubator for bacteriological test* (2)	(√)	2
15.	Laminar flow* (1)	(√)	2
16.	Magnetic Stirrer with hot plate* (2)	(x)	
17.	Mechanical Shaker *(1)	(x)	

S. No.	EQUIPMENT	Yes/No	Nos. available**
18.	Microwave digester	(x)	
19.	TKN Analyzer semi automatic with aluminum block digester	<del>(x)</del> ✓	1
20.	Ultrasonic water bath	(x)	
21.	Vacuum pump* (1)	(√)	1
22.	Water purification / distillation assembly* (1)	(√)	1
23.	Ekman Dredge	(x)	
24.	Water sampler	(x)	
25.	Oil & Grease sampler	(x)	
26.	Water Testing kit	(x)	
27.	Chloroscope for residual chlorine	(√)	1
28.	Any other equipment (please attach details on separate sheet)	(x)	

**(b) LIST OF INSTRUMENTS WATER/WASTE WATER ANALYSIS**

S. No.	Name of instrument	Yes/No	Total Nos. **
<b>BASIC INSTRUMENTS</b>			
1.	Analytical Balance +* (1) 1 mg	(√)	2
2.	Conductivity Meter* (1)	(√)	1
3.	Dissolved oxygen meter	(x)	
4.	pH Meter with combined glass electrode* (1)	(√)	1
5.	Turbidity meter* (1)	(√)	1
<b>SPECIFIC INSTRUMENTS</b>			
1.	Alpha/Beta Radioactivity Counter	(x)	
2.	Atomic Absorption Spectrophotometer (Flame) with the following cathode lamps + ((√) available HCL)* (1)		
	(i) Aluminium	(ii) Antimony	
	(iii) Arsenic ✓	(iv) Barcellium	
	(v) Barium	(vi) Boron	
	(vii) Cadmium	(viii) Calcium	
	(ix) Chromium ✓	(x) Copper ✓	

	(xi) Iron ✓	(xii) Lithium		
	(xiii) Lead ✓	(xiv) Magnesium		
	(xv) Manganese	(xvi) Mercury *		
	(xvii) Nickel ✓	(xviii) Potassium		
	(xix) Selenium	(xx) Silver		
	(xxi) Sodium	(xxii) Strontium		
	(xxiii) Tin	(xxiv) Cobalt		
	(xxv) Vanadium	(xxvi) Zinc ✓		
		(xxvii) Other, pl. specify		
3.	Atomic Absorption Spectrophotometer with Graphite Furnace and Hydride Generation System		(x)	
4.	Organic Halogen Analyzer (AOX/TOX)		(x)	
5.	Binocular Microscope		(x)	
6.	Flame Photometer* (1)		(√)	1
7.	Gas Chromatograph with following detector*++ (1)		(x)	
	- ECD-NPD		(x)	
	- FID-TID			
	- FPD			
	- Other detector			
8.	Gas Chromatograph with Mass Spectrometer (GC-MS)		(x)	
9.	High Pressure Liquid Chromatograph (HPLC)		(x)	
10.	Ion Chromatograph		(x)	
11.	Inductively Coupled Plasma (ICP) Spectrometer		(x)	
12.	Mercury Analyzer Digital* (1)		(x)	
13.	Portable Analyzer Kit (DO, pH, Temp. Cond.)		(x)	
14.	Precision Balance weighing up to 1 mg* (water / air)		(x)	
15.	Rotary Evaporator* (1)		(x)	
16.	Spectrophotometer (Visible)* or Ultraviolet & visible* (1)		(√)	1
17.	Stereo Microscope		(x)	
18.	Total Organic Carbon Analyzer		(x)	
19.	Any other instruments (Please enclose details on separate sheet)		(x)	

## (c) LIST OF INSTRUMENTS FOR HAZARDOUS WASTE ANALYSIS

S. No.	Instruments	Nos. Available
1.	Bomb colorimeter	-
2.	Elemental analyzer	-
3.	Flash point apparatus	-
4.	Moisture content meter	-
5.	Rotary evaporator	-
6.	Toxicity characteristic leaching procedure (TCLP) extractor	-
7.	Toxic Gas analyzer	-
8.	X-ray fluorescence (XRF) Spectrometer	-
9.	Zero head space extractor (ZHE)	-
10.	Any other equipment (please attach details on separate sheet)	-

**(d) LIST OF MAINTENANCE CONTRACT STATUS OF IMPORTANT SOPHISTICATED INSTRUMENTS [Note: Please mark Yes ((√))/No (x)]**

S. No.	Name of the instrument	Repair job undertaken on Annual Maintenance contract / emergency call basis	Whether sufficient spares available
1.	AAS (Flame & Flameless)	(√)	(√)
2.	AOX	(x)	(x)
3.	Total Organic Carbon Analyzer	(x)	(x)
4.	Gas Chromatograph	(x)	(x)
5.	Water purification system	(x)	(x)
6.	Analytical balance	(x)	(x)
7.	Specific ion meter	(x)	(x)
8.	Mercury analyzer	(x)	(x)
9.	UV-Visible spectrophotometer	(x)	(x)
10.	Alpha/Beta Radioactivity Counter	(x)	(x)
11.	Any other equipment (please attach details on separate sheet)	(x)	(x)

## (e) REFERENCE MATERIAL (RMS) AND CERTIFIED REFERENCE MATERIAL (CRMS)

S. No.	Parameters	Availability of RMS/CRMS	
		((√)/X)	Nos. of standards
1.	Trace Metals	X	
2.	Organo-chlorine pesticides	X	
3.	Organo-nitrogen phosphorous pesticides	X	
4.	Polychlorinated Biphenyls (PCB's)	X	
5.	Polycyclic aromatic hydrocarbon (PAH)	X	
6.	Benzene, Ethylene, Toluene & Xylene	X	
7.	Dioxins and Furans	X	
8.	Any other (please attach details on separate sheet)	X	

## f) LIST OF GLASS APPARATUS AND DISTILLATION ASSEMBLIES

[Note: Please mark Yes ((√))/No (x)]

S. No.	Particulars	Yes or No	Total nos. available
1.	Fluoride distillation assembly	(x)	
2.	Cyanide distillation assembly	(x)	
3.	Ammonia distillation assembly	(x)	
4.	Water distillation assembly	(√)	1
5.	Soxlet extraction assembly	(x)	
6.	Arsenic estimation assembly	(x)	
7.	Phenol distillation assembly	(x)	
8.	Any other (please enclose details on separate sheet)	(x)	

## (5) AIR QUALITY PARAMETERS

Facilities available [Please mark Yes ((√))/No (x)]

## A. Ambient Air / Fugitive Emissions

S. No.	Group of parameter	Yes/No ((√) / x)	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Nitrogen dioxide as NO <sub>2</sub>	(√)	As Per CPCB Guidelines
2.	Sulphur dioxide (SO <sub>2</sub> )	(√)	As Per CPCB Guidelines
3.	Total suspended particulate matter	(x)	
4.	Respirable suspended particulate matter (PM <sub>10</sub> )	(√)	As Per CPCB Guidelines
(ii)	<b>Secondary Parameters</b>		
1.	Ammonia	(√)	As Per CPCB Guidelines
2.	Carbon monoxide	(√)	As Per CPCB Guidelines
3.	Chlorine	(x)	
4.	Fluoride	(x)	
5.	Non methane hydrocarbon	(x)	
6.	Lead	(√)	As Per CPCB Guidelines
7.	Methane	(x)	
8.	Ozone	(√)	As Per CPCB Guidelines
9.	Benzene Toluene Xylene (BTX)	(x)	
10.	Polycyclic aromatic hydrocarbon (PAH) Benzo-a-pyrine & others	(x)	
11.	PM <sub>2.5</sub>	(√)	As Per CPCB Guidelines
12.	Volatile Organics Carbon	(x)	
13.	Any other (please attach details on separate sheet)	(x)	

## B. Stack gases/source emission

S. No.	Group of parameter	Yes/No ((√) / x)	Adopted method

(i)	<i>Mandatory Parameters</i>		
1.	Particulate matter	(√)	As Per CPCB Guidelines
2.	Sulphur dioxide	(x)	
3.	Velocity & flow	(x)	
4.	Carbon dioxide	(x)	
5.	Carbon monoxide	(x)	
6.	Temperature	(√)	As Per CPCB Guidelines
7.	Oxygen	(x)	
8.	Oxides of nitrogen	(x)	
(ii)	<i>Secondary Parameters</i>		
1.	Acid mist	(x)	
2.	Ammonia	(x)	
3.	Chlorine	(x)	
4.	Fluoride (Particulate)	(x)	
5.	Fluoride (Gaseous)	(x)	
6.	Hydro-chloric acid	(x)	
7.	Total Hydro carbon	(x)	
8.	Hydrogen Sulphide	(x)	
9.	Carbon disulphide	(x)	
10.	Mercaptan	(x)	
11.	Any other (please attach details on separate sheet)	(x)	

### C. Noise level

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Noise level measurement (20 to 140 dba)	(√)	As Per CPCB Guidelines
2.	Ambient Noise & Source specific noise	(x)	

3	Any other (please attach details on separate sheet)	(x)	
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D. Meteorological Monitoring

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Ambient Temperature	(x)	
2.	Wind direction	(x)	
3.	Wind speed	(x)	
4.	Relative Humidity	(x)	
(ii)	<b>Secondary Parameters (Minimum required at least one parameter)</b>		
1.	Solar radiation	(x)	
2.	Rain fall	(x)	
Any other (please attach details on separate sheet)			

E. Vehicular Emission Monitoring

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Carbon monoxide	(√)	As Per CPCB Guidelines
2.	Smoke Density	(x)	
3.	Hydrocarbon	(√)	As Per CPCB Guidelines
(ii)	<b>Secondary Parameters (Optional)</b>		
1.	Oxides of Nitrogen	(x)	

Any other (please attach details on separate sheet)

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## 6. LIST OF INSTRUMENTS REQUIRED FOR AIR MONITORING

S. No.	Instrument	Yes/No	If yes, give Total Nos. "
1.	BTX analyzer (PID/FID detector)	(x)	
2.	BTX calibrator	(x)	
3.	Charcoal Tubes	(x)	
4.	CO Analyzer (Non-dispersive Infrared principle)	(√)	1
5.	Detector Tubes with Pump of different pollutants (Please specify details)	(x)	
6.	Dust analyzer (Beta Attenuation/TOEN)	(x)	
7.	Exhaust CO/HC analyzer	(x)	
8.	Flue gas analyzer	(√)	1
9.	Gas Chromatograph with Air sampling port, FID & PFPD detectors	(x)	
10.	Handy sampler for gaseous monitoring* (2)	(x)	
11.	High Volume sampler with flow controller (4)	(√)	10
12.	Low flow pump	(x)	
13.	Meteorological sensors with mast (WS, WD, Temp., Humidity)* (1)	(x)	
14.	Micro balance (Readability 1 µg)	(x)	
15.	Multi calibration system	(x)	
16.	Multi channel recorder	(x)	
17.	Multi calibration kit (portable)	(x)	
18.	Noise level meter* (2)	(√)	2
19.	NO-NO <sub>2</sub> -Nox Analyzer (Chemiluminescence based)	(x)	
20.	Ozone analyzer (Ultraviolet)	(x)	
21.	Permeation tubes for calibration	(x)	
22.	RSPM sampler with flow controller/brush less motor + calibration kit* (4)	(x)	
23.	Smoke density meter	(x)	
24.	SO <sub>2</sub> Analyzer (Pulsed Fluorescence based)	(x)	
25.	Soap bubble meter	(x)	

26.	Stack monitoring kit with High Temp. Probes* (2)	(√)	
27.	Toddler Bags	(x)	
28.	Wet gas meter	(x)	
29.	Any other (please specify)	(x)	

**(7) LIST OF INFRASTRUCTURAL EQUIPMENT/ITEMS FOR AIR ANALYSIS**  
 [Please mark Yes ((√))/No (x)]

S. No.	Items	Yes/No	If yes, give Total Nos.**
1.	Air conditioner (split type)	(√)	5
2.	Air Conditioner (Window type)	(x)	
3.	Breathing apparatus	(x)	
4.	Cold room for sample storage	(√)	1
5.	Computer with printer	(√)	8
6.	Constant voltage transformer	(x)	
7.	Face shield and helmet	(x)	
8.	Gas mask	(x)	
9.	Refrigerator (frost free, CFC free)	(√)	1
10.	Tool Kit (Electrical & Mechanical)	(√)	1
11.	Uninterrupted power supply (UPS) system	(√)	1
12.	First aid box	(√)	1
13.	Trolley for sample transportation	(√)	1
14.	Fume Hood	(√)	1
15.	Exhaust System	(x)	
16.	Fire Extinguisher	(√)	2
17.	Electricity Generator	(√)	1
18.	Gas Cylinder Trolleys	(√)	1
19.	Any other (please specify)	(x)	

**(8) Budgetary information**

SNo	Budget	[year 2022-23]	[year 2023-24]
1.	Sanctioned		

2.	Expenditure	13535404	12736808
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## (9) Manpower Information

SNo	Designation	Number of Posts in working	Remarks
1.	Chief Scientific Officer	-	
2.	Senior Scientific Officer	-	
3.	Chief Chemist	-	
4.	Scientist	2	
5.	Jr Scientist	4	
6.	Chemist	3	
7.	Sampler	6	
8.	Laboratory assistant	-	
9.	Laboratory attendant	3	
10.	Research Fellows	-	
11.	Field assistant	-	
12.	NAMP Staff	2	
13.	NCAP Staff	-	
14.	Contractual Staff	-	
15.	Others	-	

Note: (if any other information )

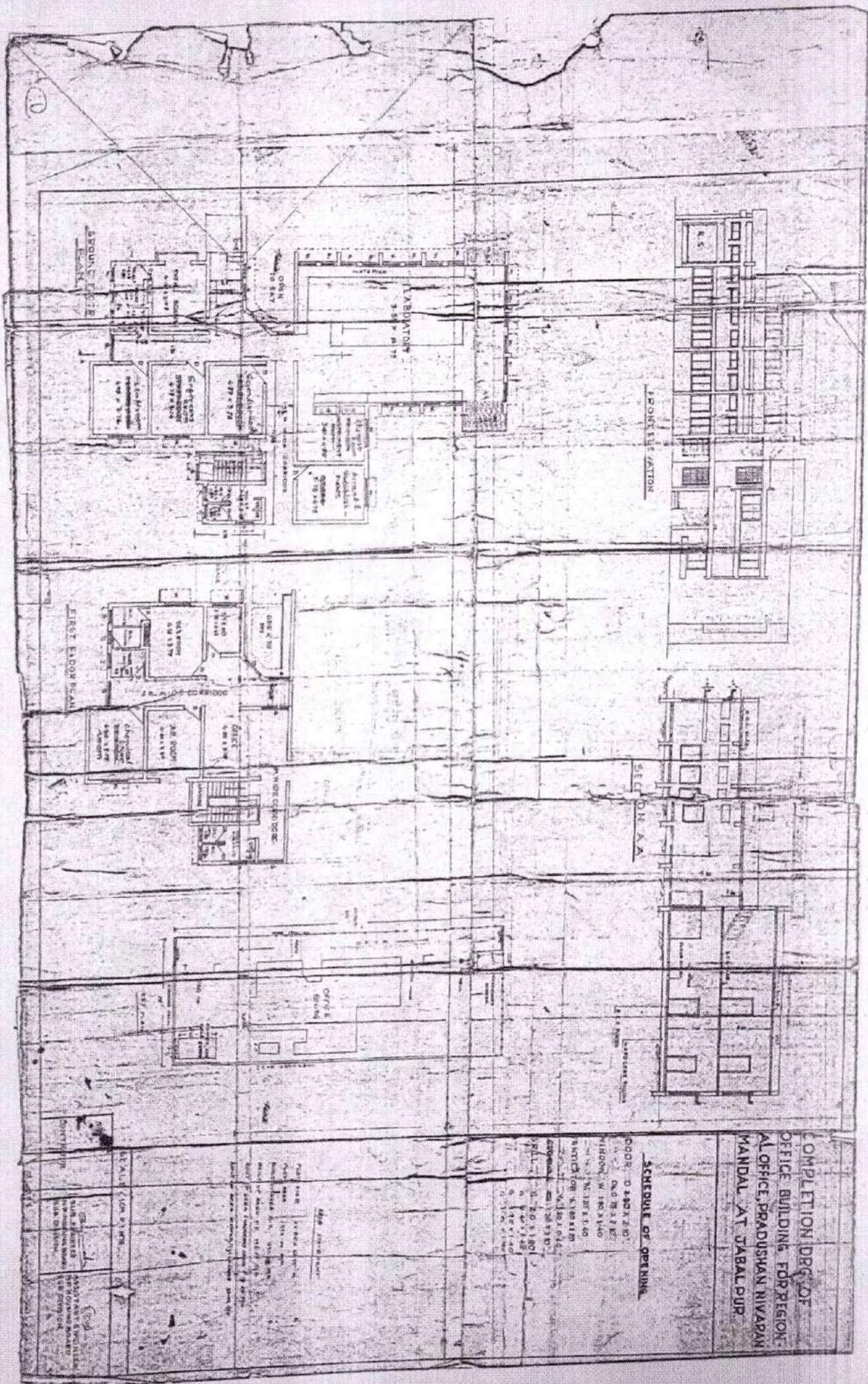
Name of Place

Jabalpur

Name, Designation & Signature of Laboratory In charge

*[Signature]* 13/12/2023

**Laboratory Incharge**  
ROMPPCB, Jabalpur



COMPLETION DRAWING OF  
OFFICE BUILDING FOR REGIONAL  
OFFICE, PRADUSHAN NIVARAN  
MANDAL AT TIBALPUR

SCHEDULE OF OPENING

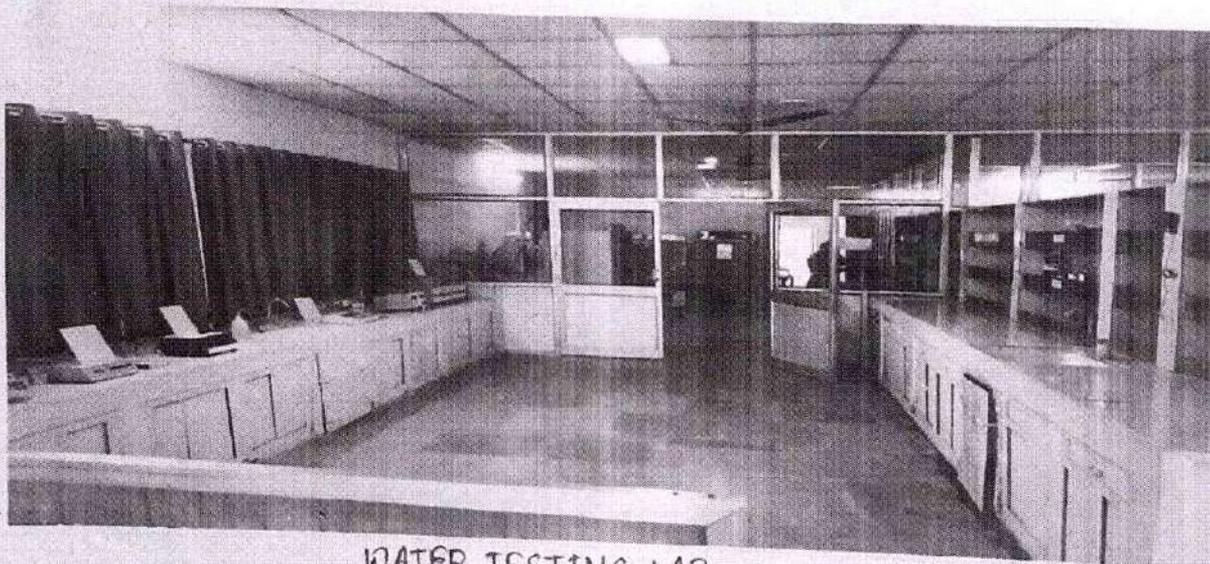
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3	...	...
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Notes and specifications for the building project, including details about materials, construction methods, and other technical requirements. The text is dense and includes various engineering and architectural notations.

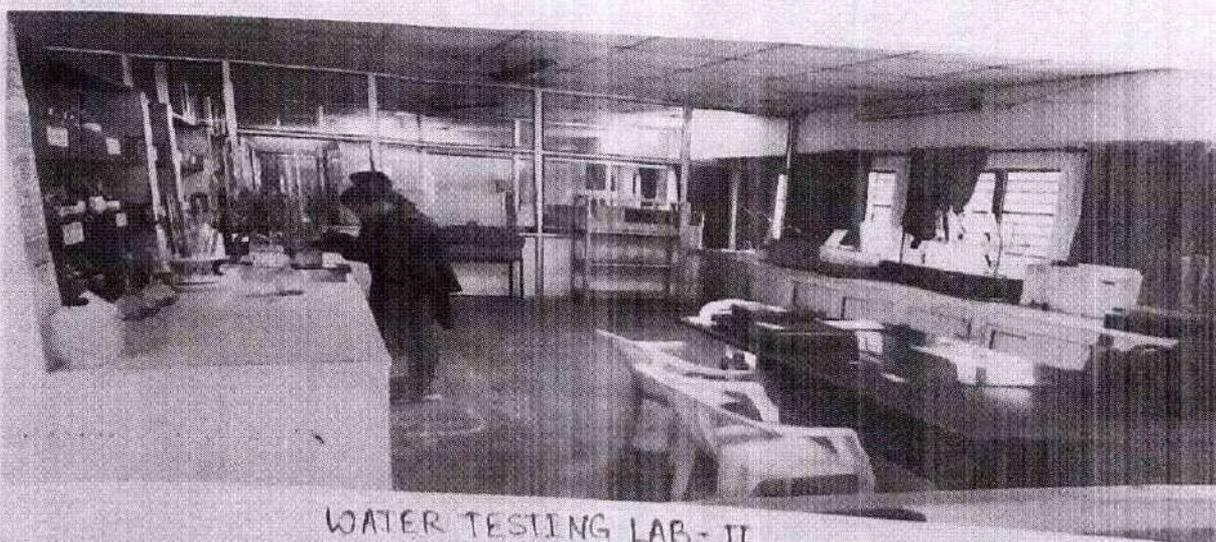
27



MICROBIOLOGY LAB

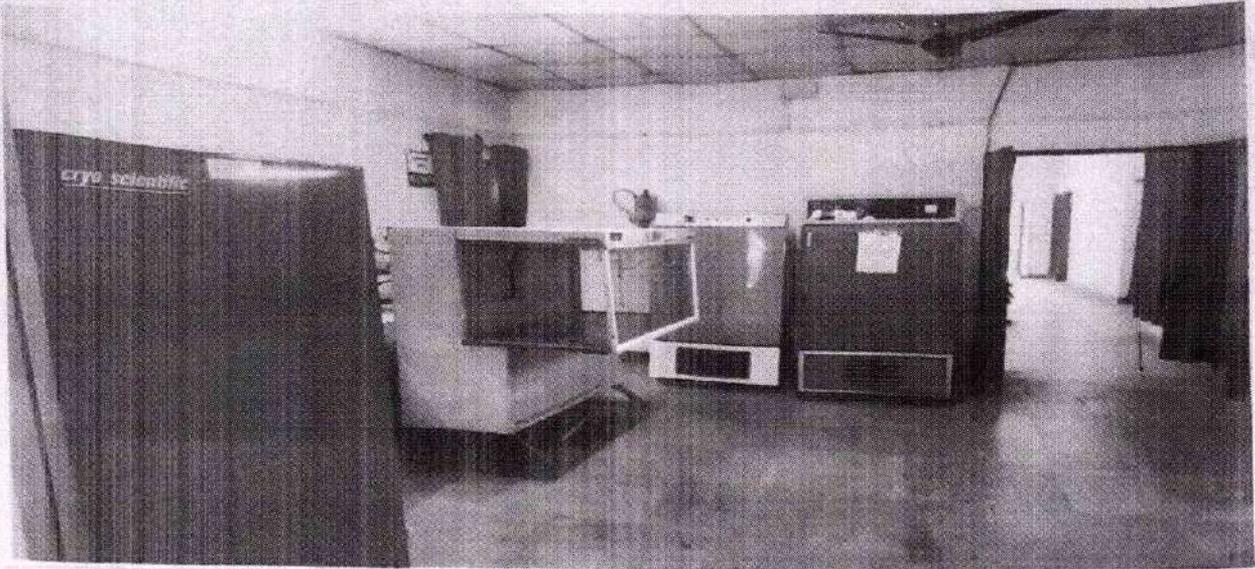


WATER TESTING LAB - I

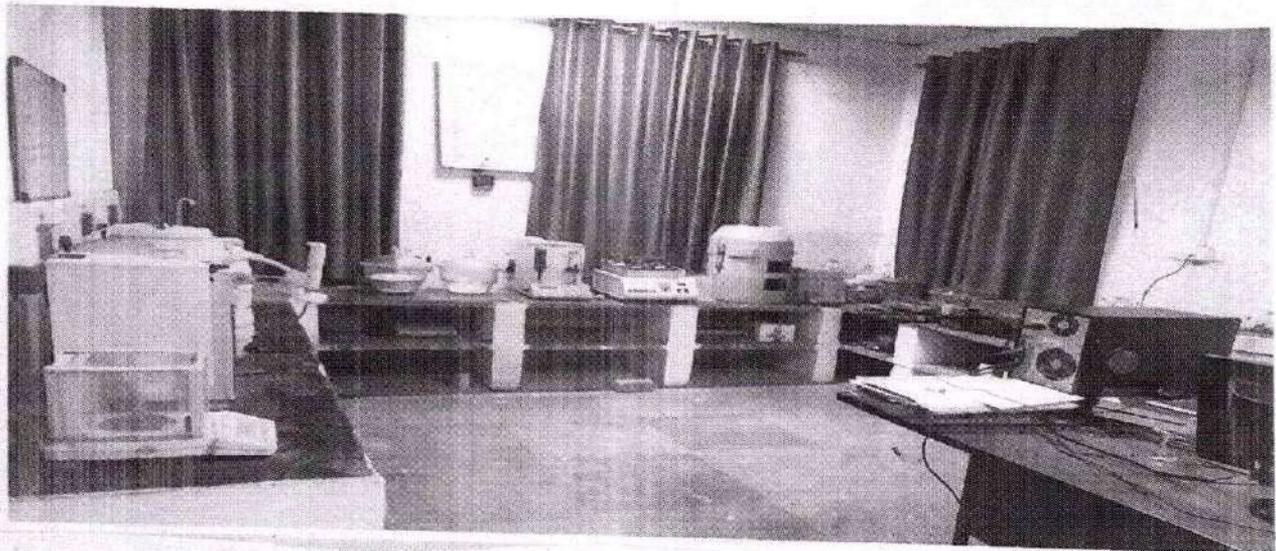


WATER TESTING LAB - II

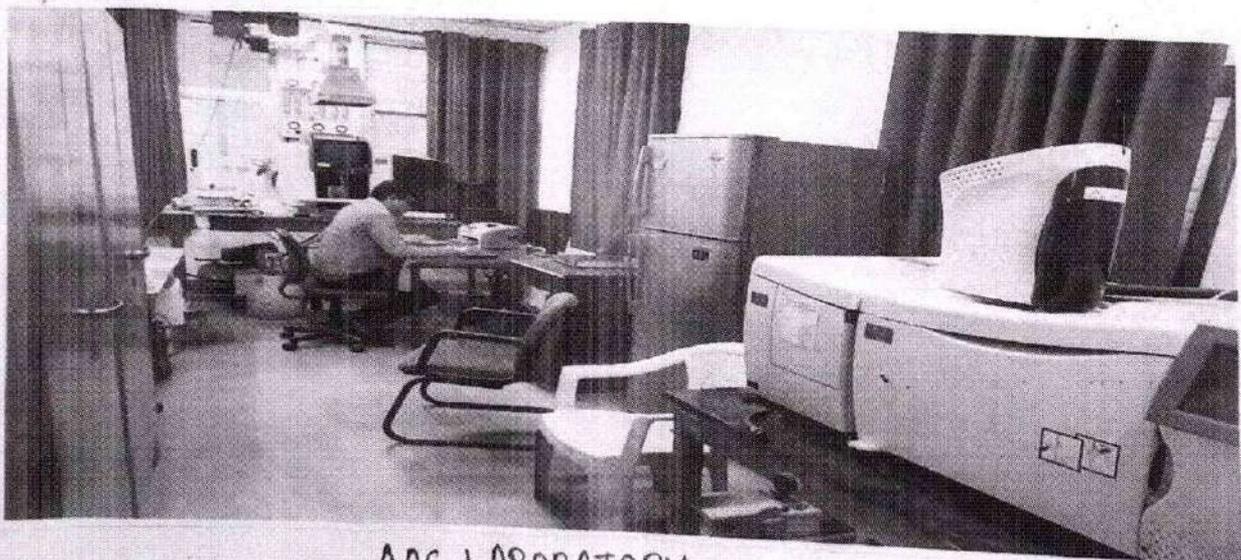
209  
REGIONAL LABORATORY MPPCB JABALPUR



BOD INSTRUMENT & OTHERS



INSTRUMENTATION LAB



AAS LABORATORY



**Regional Office**  
**M. P. Pollution Control Board, Sagar**

Housing Board Colony, Deen Dayal Nagar Sagar, (M.P.)-470004, email-romppcb\_sagar@redoffmail.com

**PROFORMA**

INFORMATION REQUIRED FOR COMPLIANCE OF NGT CASE NO. 693/2023 ORDER  
DTAED 23.11.2023

1. General

- (i) Name of Regional Office : Regional Office, M.P. Pollution Control Board,  
Sagar
- (ii) Name of the Regional Laboratory : Regional Laboratory, M.P. Pollution Control Board  
Sagar
- (iii) Address
- a) Postal : Housing Board Colony, Deen Dayal Nagar  
Sagar, Pin 470004 (M.P.)
- b) Telephone : 07582-299162
- c) Fax : \_\_\_\_\_
- d) E-mail : romppcb\_sagar@rediffmail.com
- (iv) Year of establishment of  
laboratory : 1992
- (v) Laboratory Incharge details
- a) Name and Designation : Dr. R. K. Jain, Chief Chemist
- b) Address : Regional Office, M.P. Pollution Control Board,  
Sagar

c) Telephone: 07582-299162 Fax ---

E-mail romppcb\_sagar@rediffmail.com

- (vi) Name of accreditation body(s)/organization i.e. ISO, NABL, GLP, SPCB's, PCC's etc. from which the laboratory has been already recognized/accredited, give details.

S. No.	Name of the certification/recognition body/organization	Accreditation / recognition granted for the activities	Environmental Parameter covered	Validity up to
1	NABL Accreditation	Water parameters	pH, Conductivity, Turbidity and Chloride	11/10/2023 Again applying

2. Infrastructural details of Laboratory: (please enclose brief lay out plan map of laboratory) with organizational chart and laboratory position in there to:

(i) Total floor space of the environmental laboratory (in sq. mtr): \_\_\_\_\_

a) Water Laboratory = 44.59 Sq. mtr

b) Biological & Microbiological Laboratory = - Sq. mtr

c) Air Laboratory = 22.29 Sq. mtr

d) Provide scanned photograph of above with layout plan.

(ii) Details of major projects undertaken pertaining to environmental studies:

*[Please attach separate sheet, if space is insufficient]*

(iii) Which of the following type of analytical tests are being carried out in the laboratory [please mark Yes (√)/No (x)]:

a) Physical √

k) Hazardous waste Characterization

b) Inorganics general and non metallic √

l) Ambient air √

c) Inorganic (Trace metals)

m) Source emission √

- |                           |                                      |
|---------------------------|--------------------------------------|
| d) Organics (General) ✓   | n) Air Toxics                        |
| e) Trace Organics         | o) Hazardous Air Pollutants          |
| f) Microbiological ✓      | p) Volatile Organic Carbon           |
| g) Toxicity               | m) Noise measurement ✓               |
| h) Biological             | n) Meteorological ✓                  |
| i) Hazardous waste        | o) Vehicular emission/Auto exhaust ✓ |
| j) Soil, sludge, sediment |                                      |

(iv) Laboratory scientists/chemist or officials are fully conversant for sampling, monitoring, preservation and transportation [please tick Yes(✓)/No(x)].

- |                                     |  |
|-------------------------------------|--|
| (a) Water & wastewater ✓            | (i) Hazardous Air Pollutants analysis      |
| (b) Hazardous waste                 | (j) Volatile Organic Carbon analysis       |
| (c) Solid waste                     | (k) Noise monitoring ✓                     |
| (d) Soil                            | (l) Meteorological monitoring ✓            |
| (e) Municipal waste                 | (m) Source emission ✓                      |
| (f) Biomedical waste                | (n) Auto exhaust monitoring ✓              |
| (g) Ambient air/fugitive emission ✓ | (o) On line ambient air quality monitoring |
| (h) Air Toxics analysis             |  |

(v) Laboratory scientists/chemists or officials are capable of analyzing desired/ relevant parameters in various types of matrix [please tick [Yes(✓)/No (x)]

- Liquid Samples (water & wastewater) Yes
- Solid Samples (soil/mud/solid waste/sludge etc.) No
- Semi-solid samples (sludge/slurry) No
- Gaseous samples (Ambient air, source emission, vehicular emission) Yes

### 3. LIST OF PARAMETERS BEING ANALYSED FOR WATER & WASTE WATER & SOLID SAMPLES

A) Physical Tests : [Please mark Yes(✓)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Conductivity ✓	11.	Flocculation test (Jar test)
2.	Colour ✓	12.	Odour ✓
3.	pH ✓	13.	Salinity
4.	Fixed & volatile solids ✓	14.	Settleable solids
5.	Total solids ✓	15.	Sludge volume index (SVI)
6.	Total dissolved solids ✓		
7.	Total suspended solids ✓		
8.	Turbidity ✓		
9.	Temperature ✓		
10.	Velocity & discharge Measurement of industrial effluent stream		

B) Inorganic [Please mark Yes (✓)/No (x)]

(i) General & Non-metallic

S. No.	Parameter	S. No.	Parameter
1.	Acidity ✓	14.	Bromide
2.	Alkalinity ✓	15.	Carbon dioxide
3.	Ammonical nitrogen ✓	16.	Chlorine demand
4.	Chloride ✓	17.	Iodine
5.	Chlorine residual ✓	18.	Sulphite
6.	Dissolved oxygen ✓	19.	Silica
7.	Fluoride ✓	20.	Cyanide
8.	Total hardness ✓	21.	Sulphide

9.	Total kjehldal nitrogen (TKN) ✓		
10.	Nitrite nitrogen ✓		
11.	Nitrate nitrogen ✓		
12.	Phosphate ✓		
13.	Sulphate ✓		

(ii) Trace Metals [Please mark Yes(✓)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Boron (B) ✓	16.	Arsenic (As)
2.	Cadmium (Cd)	17.	Aluminium (Al)
3.	Calcium (Ca) ✓	18.	Beryllium (Be)
4.	Chromium (Cr) Total	19.	Barium (Ba)
5.	Chromium (Cr) Hexavalent	20.	Lithium (Li)
6.	Copper (Cu)	21.	Manganese (Mn)
7.	Iron (Fe) ✓	22.	Selenium (Se)
8.	Lead (Pb)	23.	Silver (Ag)
9.	Magnesium (Mg) ✓	24.	Strontium (Sr)
10.	Mercury (Hg)	25.	Tin (Sn)
11.	Nickel (Ni)	26.	Antimony (Sb)
12.	Potassium (K) ✓	27.	Cobalt (Co)
13.	Sodium (Na) ✓	28.	Vanadium (V)
14.	Sodium absorption ratio (SAR) ✓		
15.	Zinc (Zn)		

(C) Organics (General) and Trace Organics [Please mark Yes(✓)/No (x) and give details at Appendix J for Trace organics]

S. No.	Parameter	S. No.	Parameter
1.	Bio-chemical oxygen demand (BOD) ✓	6.	Total organic carbon (TOC)
2.	Chemical oxygen demand (COD) ✓	7.	Adsorbable organic halide (AOX)
3.	Oil & Grease ✓	8.	Surfactants
4.	Phenol	9.	Tannin & lignin
5.	Pesticide (each)	10.	Poly-chlorinated biphenyl (PCB's) each
	(i) Organo-chlorine (BHC, DDT, Aldrin, Endosulphan)	11.	Polynuclear aromatic hydrocarbon (PAH) each
	(ii) Organo nitrogen-phosphorous (Malathion, methyl parathion, Chloropyriphos)	12.	Organic Carbon (in solid)
		13.	Carbon/Nitrogen ratio

D) Microbiological Tests [Please mark Yes(✓)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Total Coliform ✓	5.	Total plate count
2.	Faecal Coliform ✓	6.	Enterococcus
3.	Faecal Streptococci ✓	7.	Coliphage
4.	E. Coli ✓		

E) Toxicological Tests [Please mark Yes(✓)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Bioassay method for evaluation of toxicity using fish (90% survival of	1.	Bio-accumulation, bio magnification and bio-transformation studies

fish after 96 hrs in 100% effluent)	2.	Estimation of the effect at tissue level
	3.	Measurement of toxicity using Daphnia or other organism
	4.	Measurement of toxicity factor using zebra fish (dimensionless toxicity test)

F) Biological Tests [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Benthic organism identification and count	5.	Saprobity Index
2.	Macrophytic identification	6.	Chlorophyll
3.	Planktonic identification count	7.	Primary productivity
4.	Measurement of various diversity index	8.	P/R Ratio

G) Characterization of Hazardous Waste [Please mark Yes(√)/No (x)]

S. No.	Parameter
1.	Preparation of Leachate (TCLP extract/water extract)
2.	Corrosivity
3.	Ignibility (Flash point)
4.	Reactivity
5.	Toxicity
6.	Measurement of heavy metals/pesticides in the waste/leachate

H) Soil/Sludge/Sediment and Solid Waste [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Boron	16	Ammonia
2.	Cation Exchange Capacity (CEC)	17	Bicarbonate
3.	Electrical Conductivity (EC)	18	Calcium
4.	Nitrogen available	19	Calcium carbonate
5.	Organic carbon/matter (chemical method)	20	Chloride
6.	pH	21	Colour
7.	Phosphorous (available)	22	Exchangeable sodium percentage (ESP)
8.	Phosphate (ortho)	23	Gypsum requirement
9.	Phosphate (total)	24	H. Acid
10.	Potassium	25	Heavy metal
11.	SAR in soil extract	26	Magnesium
12.	Sodium	27	Mechanical soil analysis
13.	Soil moisture	28	Nitrate
14.	TKN	29	Nitrite
15.	Calorific value	30	PAH
		31	Pesticide
		32	Potash (available)
		33	Sulphate
		34	Sulphur
		35	TOC
		36	Total water soluble salt
		37	Water holding capacity

#### 4. LIST OF INSTRUMENTS FOR WATER, WASTEWATER & SOLID SAMPLES

##### a) LIST OF EQUIPMENT GENERAL ANALYSIS

[Note: Please mark Yes (√)/No(x)]

S. No.	EQUIPMENT	Yes/No	Nos. available**
<b>BASIC EQUIPMENTS</b>			
1.	Ice Box/s* (2)	Yes	3
2.	Filtration assembly* (1)	Yes	1
3.	Heating Mantle	Yes	1
4.	Stop watch	Yes	1
5.	Hot air oven* (2)	Yes	2
6.	Hot plate* (2)	Yes	2
7.	Muffle furnace* (1)	Yes	1
8.	Standard weight	Yes	3
9.	Water bath	Yes	1
10.	Thermometer/s* (4)	Yes	2
11.	Refrigerator/s big, size* 300 litres or above (2)	Yes	2
<b>SPECIFIC EQUIPMENTS</b>			
1.	Autoclave* (1)	Yes	1
2.	Bottom sampler	No	0
3.	BOD Incubator* (1)	Yes	1
4.	Centrifuge* (1)	Yes	1
5.	Aquarium for bioassay test* (4)	No	0
6.	COD Digester with aluminium heating blocks * (1)	Yes	2
7.	Colony Counter	Yes	1
8.	Depth Sampler	No	0
9.	Digester with condensers	Yes	2
10.	Digestion chamber* (1)	Yes	1
11.	Dissolved oxygen sampler	No	0
12.	Flocculator ( Jar testing apparatus)	No	0
13.	Flow meter	No	0
14.	Incubator for bacteriological test* (2)	Yes	2
15.	Laminar flow* (1)	Yes	1

S. No.	EQUIPMENT	Yes/No	Nos. available**
16.	Magnetic Stirrer with hot plate* (2)	No	-
17.	Mechanical Shaker *(1)	No	-
18.	Microwave digester	No	-
19.	TKN Analyzer semi automatic with aluminum block digester	Yes	1
20.	Ultrasonic water bath	No	-
21.	Vacuum pump* (1)	Yes	1
22.	Water purification / distillation assembly* (1)	Yes	1
23.	Ekman Dredge	No	-
24.	Water sampler	No	-
25.	Oil & Grease sampler	No	-
26.	Water Testing kit	No	-
27.	Chloroscope for residual chlorine	No	-
28.	Any other equipment (please attach details on separate sheet)	-	-

## (b) LIST OF INSTRUMENTS WATER/WASTE WATER ANALYSIS

S. No.	Name of instrument	Yes/No	Total Nos. **
<b>BASIC INSTRUMENTS</b>			
1.	Analytical Balance +* (1) 1 mg	Yes	2
2.	Conductivity Meter* (1)	Yes	2
3.	Dissolved oxygen meter	No	Chemically analysed
4.	pH Meter with combined glass electrode* (1)	Yes	2
5.	Turbidity meter* (1)	Yes	1
<b>SPECIFIC INSTRUMENTS</b>			
1.	Alpha/Beta Radioactivity Counter	No	
2.	Atomic Absorption Spectrophotometer (Flame) with the following cathode lamps + (√ available HCL)* (1)		
	(i) Aluminium	(ii) Antimony	No
	(iii) Arsenic	(iv) Barium	No

19.	Any other instruments (Please enclose details on separate sheet)		No
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**(c) LIST OF INSTRUMENTS FOR HAZARDOUS WASTE ANALYSIS**

S. No.	Instruments	Nos. Available
1.	Bomb colorimeter	No
2.	Elemental analyzer	No
3.	Flash point apparatus	No
4.	Moisture content meter	No
5.	Rotary evaporator	No
6.	Toxicity characteristic leaching procedure (TCLP) extractor	No
7.	Toxic Gas analyzer	No
8.	X-ray fluorescence (XRF) Spectrometer	No
9.	Zero head space extractor (ZHE)	No
10.	Any other equipment (please attach details on separate sheet)	No

**(d) LIST OF MAINTENANCE CONTRACT STATUS OF IMPORTANT SOPHISTICATED INSTRUMENTS [Note: Please mark Yes (√)/No (x)]**

S. No.	Name of the instrument	Repair job undertaken on Annual Maintenance contract / emergency call basis	Whether sufficient spares available
1.	AAS (Flame & Flameless)	No	
2.	AOX	No	
3.	Total Organic Carbon Analyzer	No	
4.	Gas Chromatograph	No	
5.	Water purification system	No	
6.	Analytical balance	Yes	
7.	Specific ion meter	No	
8.	Mercury analyzer	No	

	(v) Barium	(vi) Boron	No
	(vii) Cadmium	(viii) Calcium	No
	(ix) Chromium	(x) Copper	No
	(xi) Iron	(xii) Lithium	No
	(xiii) Lead	(xiv) Magnesium	No
	(xv) Manganese	(xvi) Mercury	No
	(xvii) Nickel	(xviii) Potassium	No
	(xix) Selenium	(xx) Silver	No
	(xxi) Sodium	(xxii) Strontium	No
	(xxiii) Tin	(xxiv) Cobalt	No
	(xxv) Vanadium	(xxvi) Zinc (xxvii) Other, pl. specify	No
3.	Atomic Absorption Spectrophotometer with Graphite Furnace and Hydride Generation System		No
4.	Organic Halogen Analyzer (AOX/TOX)		No
5.	Binocular Microscope		No
6.	Flame Photometer* (1)		01
7.	Gas Chromatograph with following detector*++ (1)		No
	- ECD-NPD - FID-TID - FPD - Other detector		No
8.	Gas Chromatograph with Mass Spectrometer (GC-MS)		No
9.	High Pressure Liquid Chromatograph (HPLC)		No
10.	Ion Chromatograph		No
11.	Inductively Coupled Plasma (ICP) Spectrometer		No
12.	Mercury Analyzer Digital* (1)		No
13.	Portable Analyzer Kit (DO, pH, Temp. Cond.)		No
14.	Precision Balance weighing up to 1 mg* (water / air)		01
15.	Rotary Evaporator* (1)		No
16.	Spectrophotometer (Visible)* or Ultraviolet & visible* (1)		01
17.	Stereo Microscope		No
18.	Total Organic Carbon Analyzer		No

9.	UV-Visible spectrophotometer	Yes	
10.	Alpha/Beta Radioactivity Counter	No	
11.	Any other equipment (please attach details on separate sheet)	No	

( e ) REFERENCE MATERIAL (RMS) AND CERTIFIED REFERENCE MATERIAL (CRMS)

S. No.	Parameters	Availability of RMS/CRMS	
		(√/X)	Nos. of standards
1.	Trace Metals	No	
2.	Organo-chlorine pesticides	No	
3.	Organo-nitrogen phosphorous pesticides	No	
4.	Polychlorinated Biphenyls (PCB's)	No	
5.	Polycyclic aromatic hydrocarbon (PAH)	No	
6.	Benzene, Ethylene, Toluene & Xylene	No	
7.	Dioxins and Furans	No	
8.	Any other (please attach details on separate sheet)	No	

f) LIST OF GLASS APPARATUS AND DISTILLATION ASSEMBLIES

[Note: Please mark Yes (√)/No (x)]

S. No.	Particulars	Yes or No	Total nos. available
1.	Fluoride distillation assembly	No	
2.	Cyanide distillation assembly	No	
3.	Ammonia distillation assembly	No	
4.	Water distillation assembly	01	
5.	Soxlet extraction assembly	No	
6.	Arsenic estimation assembly	No	
7.	Phenol distillation assembly	No	

8.	Any other (please enclose details on separate sheet)	No	
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**(5) AIR QUALITY PARAMETERS**

Facilities available [Please mark Yes (√)/No (x)]

*A. Ambient Air / Fugitive Emissions*

S. No.	Group of parameter	Yes/No (√/x)	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Nitrogen dioxide as NO <sub>2</sub>	Yes	Jacob & Hochheise method
2.	Sulphur dioxide (SO <sub>2</sub> )	Yes	West & gaeke method
3.	Total suspended particulate matter	Yes	Gravimetric
4.	Respirable suspended particulate matter (PM <sub>10</sub> )	Yes	Gravimetric
(ii)	<b>Secondary Parameters</b>		
1.	Ammonia	Yes	Indophenol blue method
2.	Carbon monoxide	Yes	Non dispersive infrared (NDIR)
3.	Chlorine	No	-
4.	Fluoride	No	-
5.	Non methane hydrocarbon	No	-
6.	Lead	Yes	EPM 2000 or equivalent filter paper
7.	Methane	No	-
8.	Ozone	Yes	Chemical Method
9.	Benzene Toluene Xylene (BTX)	No	-
10.	Polycyclic aromatic hydrocarbon (PAH) Benzo-a-pyrine & others	No	-
11.	PM <sub>2.5</sub>	Yes	Gravimetric
12.	Volatile Organics Carbon	No	-

13	Any other (please attach details on separate sheet)	No	-
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**B. Stack gases/source emission**

S. No.	Group of parameter	Yes/No (√/x)	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Particulate matter	Yes	Stack Kit
2.	Sulphur dioxide	Yes	Flue gas Analyzer
3.	Velocity & flow	Yes	Flue gas Analyzer
4.	Carbon dioxide	Yes	Flue gas Analyzer
5.	Carbon monoxide	Yes	Flue gas Analyzer
6.	Temperature	Yes	Flue gas Analyzer
7.	Oxygen	No	
8.	Oxides of nitrogen	Yes	Flue gas Analyzer
(ii)	<b>Secondary Parameters</b>		
1.	Acid mist	No	-
2.	Ammonia	No	-
3.	Chlorine	No	-
4.	Fluoride (Particulate)	No	-
5.	Fluoride (Gaseous)	No	-
6.	Hydro-chloric acid	No	-
7.	Total Hydro carbon	No	-
8.	Hydrogen Sulphide	No	-
9.	Carbon disulphide	No	-
10.	Mercaptan	No	-
11	Any other (please attach details on separate sheet)	No	-

## C. Noise level

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Noise level measurement (20 to 140 dba)	Yes	-
2.	Ambient Noise & Source specific noise	Yes	-
3	Any other (please attach details on separate sheet)	-	-

## D. Meteorological Monitoring

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Ambient Temperature	No	
2.	Wind direction	No	
3.	Wind speed	No	
4.	Relative Humidity	No	
(ii)	<b>Secondary Parameters (Minimum required at least one parameter)</b>		
1.	Solar radiation	No	
2.	Rain fall	No	

Any other (please attach details on separate sheet)

## E. Vehicular Emission Monitoring

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		

1.	Carbon monoxide	Yes	CO/ HC Analyzer
2.	Smoke Density	Yes	CO/ HC Analyzer
3.	Hydrocarbon	Yes	CO/ HC Analyzer
(ii)	<b>Secondary Parameters (Optional)</b>	-	
1.	Oxides of Nitrogen	No	

Any other (please attach details on separate sheet)

## 6. LIST OF INSTRUMENTS REQUIRED FOR AIR MONITORING

S. No.	Instrument	Yes/No	If yes, give Total Nos. **
1.	BTX analyzer (PID/FID detector)	-	
2.	BTX calibrator	-	
3.	Charcoal Tubes	-	
4.	CO Analyzer (Non-dispersive Infrared principle)	-	
5.	Detector Tubes with Pump of different pollutants (Please specify details)	-	
6.	Dust analyzer (Beta Attenuation/TOEN)	-	
7.	Exhaust CO/HC analyzer	-	
8.	Flue gas analyzer	-	
9.	Gas Chromatograph with Air sampling port, FID & PFPD detectors	-	
10.	Handy sampler for gaseous monitoring* (2)	-	
11.	High Volume sampler with flow controller (4)	-	
12.	Low flow pump	-	
13.	Meteorological sensors with mast (WS, WD, Temp., Humidity)* (1)	-	
14.	Micro balance (Readability 1 µg)	-	
15.	Multi calibration system	-	
16.	Multi channel recorder	-	
17.	Multi calibration kit (portable)	-	
18.	Noise level meter* (2)	-y	1
19.	NO-NO <sub>2</sub> -Nox Analyzer (Chemiluminescence based)	-	
20.	Ozone analyzer (Ultraviolet)	-	
21.	Permeation tubes for calibration	-	

22.	RSPM sampler with flow controller/brush less motor + calibration kit* (4)	-	
23.	Smoke density meter	-	
24.	SO <sub>2</sub> Analyzer (Pulsed Fluorescence based)	-	
25.	Soap bubble meter	-	
26.	Stack monitoring kit with High Temp. Probes* (2)	-	
27.	Toddler Bags	-	
28.	Wet gas meter	-	
29.	Any other (please specify)	-	

### (7) LIST OF INFRASTRUCTURAL EQUIPMENT/ITEMS FOR AIR ANALYSIS

[Please mark Yes (✓)/No (x)]

S. No.	Items	Yes/No	If yes, give Total Nos.**
1.	Air conditioner (split type)	Yes	2
2.	Air Conditioner (Window type)	-	
3.	Breathing apparatus	-	
4.	Cold room for sample storage	-	
5.	Computer with printer	-	
6.	Constant voltage transformer	-	
7.	Face shield and helmet	-	
8.	Gas mask	-	
9.	Refrigerator (frost free, CFC free)	-	
10.	Tool Kit (Electrical & Mechanical)	-	
11.	Uninterrupted power supply (UPS) system	-	
12.	First aid box	Yes	
13.	Trolley for sample transportation	-	
14.	Fume Hood	Yes	
15.	Exhaust System	-	
16.	Fire Extinguisher	Yes	
17.	Electricity Generator	Yes	
18.	Gas Cylinder Trolleys	-	

19	Any other (please specify)		
----	----------------------------	--	--

**(8) Budgetary Information**

SNo	Budget	[year 2022-23]	[year 2023-24]
1.	Sanctioned	-	-
2.	Expenditure	-	-

**(9) Manpower Information**

SNo	Designation	Number of Posts in working	Remarks
1.	Chief Scientific Officer	-	
2.	Senior Scientific Officer	-	
3.	Chief Chemist	01	
4.	Scientist	-	
5.	Jr Scientist	02	
6.	Chemist	02	
7.	Sampler	-	
8.	Laboratory assistant	02	
9.	Laboratory attendant	01	
10.	Research Fellows	-	
11.	Field assistant	-	Required
12.	NAMP Staff	-	Required
13.	NCAP Staff	-	
14.	Contractual Staff	-	
15.	Others	-	

Note: (if any other information )



Dr. R. K. Jain (Chief Chemist)

Name of Place-Sagar

Name, Designation & Signature of Laboratory In charge

Regional Office, M.P. Pollution Control Board, Sagar

**PROFORMA**

INFORMATION REQUIRED FOR COMPLIANCE OF NGT CASE NO. 693/2023 ORDER DTAED  
23.11.2023

**I. General**

- (i) Name of Regional Office : RO MP Pollution Control Board, Satna
- (ii) Name of the Regional Laboratory : Regional Laboratory MP Pollution Control Board, Satna
- (iii) Address : Rewa Road Amarpatan-Maihar Bypas Satna (M.P.)
- a) Postal : Rewa Road Amarpatan-Maihar Bypas Satna (M.P.)  
485001
- b) Telephone : 7000693869
- c) Fax : NA
- d) E-mail : [lbromppcb.satna@gmail.com](mailto:lbromppcb.satna@gmail.com)
- (iv) Year of establishment of laboratory : 1997
- (v) Laboratory Incharge details
- a) Name and Designation : Dr. Rahul Dwivedi (Scientist)
- b) Address : Regional Laboratory MP Pollution Control Board, Satna
- c) Telephone: 7000693869 Fax: NA E-mail:- [lbromppcb.satna@gmail.com](mailto:lbromppcb.satna@gmail.com)

- (vi) Name of accreditation body(s)/organization i.e. ISO, NABL, GLP, SPCB's, PCC's etc. from which the laboratory has been already recognized/accredited, give details.

S. No.	Name of the certification/recognition body/organization	Accreditation / recognition granted for the activities	Environmental Parameter covered	Validity up to
1.	NABL ISO/IEC17025:2017	Testing Laboratory	a. Atmospheric Pollution 1. PM10 2. PM2.5 3. SO2 4. NO2 b. Pollution & Environment 1. pH 2. TSS 3. BOD 4. Oil & Grease c. Water 1. pH 2. EC 3. TDS 4. TSS 5. Turbidity 6. Total Hardness 7. Calcium as Ca 8. Magnesium as Mg 9. Chloride as Cl <sup>-</sup> 10. DO 11. BOD 12. Oil & Grease	Validity Date:- 26.10.2023  (Application submitted for Renewal dated:- 26.10.2023)

2. Infrastructural details of Laboratory: (please enclose brief lay out plan map of laboratory with organizational chart and laboratory position in there to:

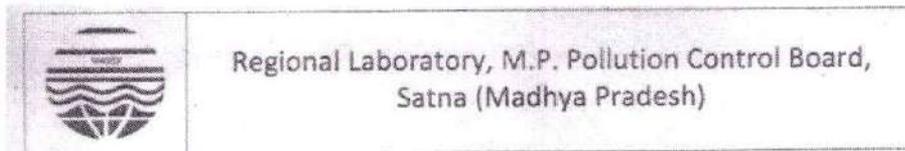
(i) Total floor space of the environmental laboratory (in sq. mtr): 21\*21 Sq. mtr

a) Water Laboratory = 7\*7 Sq. mtr

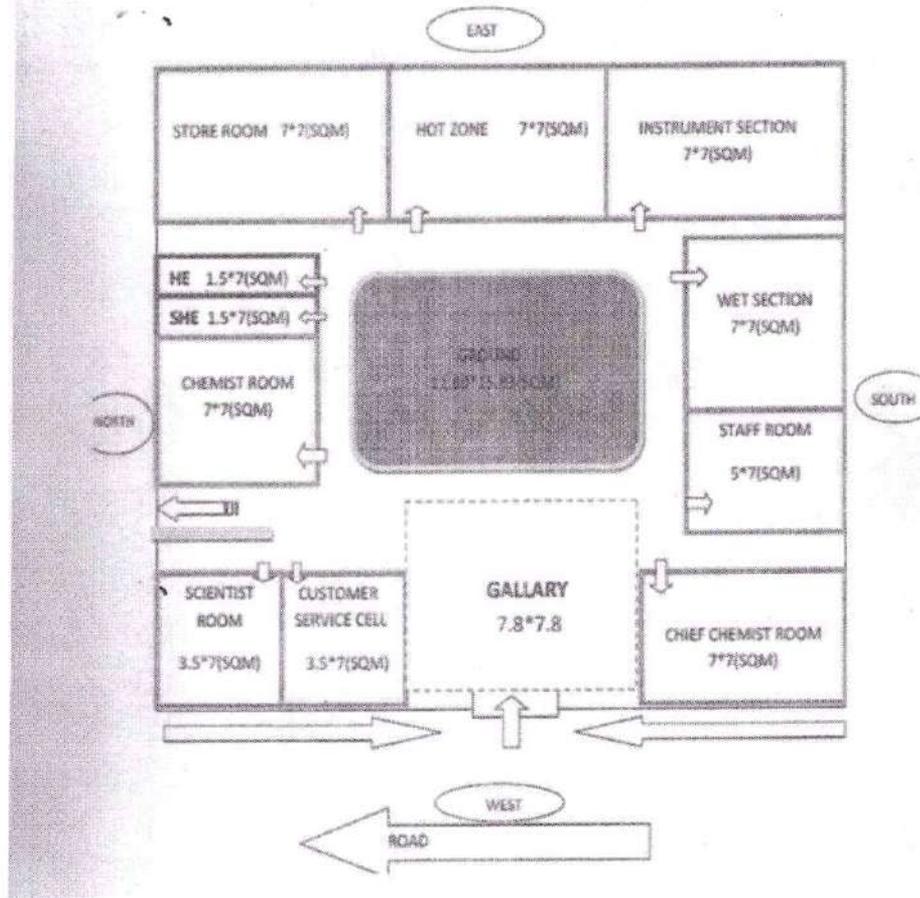
b) Biological & Microbiological Laboratory = 7\*7 Sq. mtr

c) Air Laboratory = 7\*7 Sq. mtr

d) Provide scanned photograph of above with layout plan.



## APPENDIX- VI: LABORATORY LAYOUT



(ii) Details of major projects undertaken pertaining to environmental studies:

*[Please attach separate sheet, if space is insufficient]*

(iii) Which of the following type of analytical tests are being carried out in the laboratory [please mark Yes (✓)/No (x)]:

- |  |   |
|--|---|
| a) Physical (✓)                            | k) Hazardous waste Characterization (x) |
| b) Inorganics general and non metallic (x) | l) Ambient air (✓)                      |
| c) Inorganic (Trace metals) (x)            | m) Source emission (✓)                  |
| d) Organics (General) (x)                  | n) Air Toxics (x)                       |
| e) Trace Organics (x)                      | o) Hazardous Air Pollutants (x)         |
| f) Microbiological (✓)                     | p) Volatile Organic Carbon (x)          |
| g) Toxicity (x)                            | m) Noise measurement (✓)                |
| h) Biological (✓)                          | n) Meteorological (✓)                   |
| i) Hazardous waste (x)                     | o) Vehicular emission/Auto exhaust (✓)  |
| j) Soil, sludge, sediment (x)              |   |

(iv) Laboratory scientists/chemist or officials are fully conversant for sampling, monitoring, preservation and transportation [please tick Yes(✓)/No(x)].

- |                                       |  |
|---------------------------------------|--|
| (a) Water & wastewater (✓)            | (i) Hazardous Air Pollutants analysis (x)      |
| (b) Hazardous waste (✓)               | (j) Volatile Organic Carbon analysis (x)       |
| (c) Solid waste (✓)                   | (k) Noise monitoring (✓)                       |
| (d) Soil (✓)                          | (l) Meteorological monitoring(✓)               |
| (e) Municipal waste (✓)               | (m) Source emission (✓)                        |
| (f) Biomedical waste (✓)              | (n) Auto exhaust monitoring (✓)                |
| (g) Ambient air/fugitive emission (✓) | (o) On line ambient air quality monitoring (✓) |
| (h) Air Toxics analysis(x)            |  |

(v) Laboratory scientists/chemists or officials are capable of analyzing desired/ relevant parameters in various types of matrix [please tick [Yes(✓)/No (x)]]

- Liquid Samples (water & wastewater) (✓)
- Solid Samples (soil/mud/solid waste/sludge etc.) (x)
- Semi-solid samples (sludge/slurry) (x)
- Gaseous samples (Ambient air, source emission, vehicular emission) (✓)

### 3. LIST OF PARAMETERS BEING ANALYSED FOR WATER & WASTE WATER & SOLID SAMPLES

A) Physical Tests : [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Conductivity (√)	11.	Flocculation test (Jar test) (x)
2.	Colour (√)	12.	Odour (√)
3.	pH (√)	13.	Salinity (x)
4.	Fixed & volatile solids (x)	14.	Settleable solids (x)
5.	Total solids (√)	15.	Sludge volume index (SVI) (x)
6.	Total dissolved solids (√)		
7.	Total suspended solids (√)		
8.	Turbidity (√)		
9.	Temperature (√)		
10.	Velocity & discharge Measurement of industrial effluent stream (√)		

B) Inorganic [Please mark Yes (√)/No (x)]

(i) General & Non-metallic

S. No.	Parameter	S. No.	Parameter
1.	Acidity (x)	14.	Bromide (x)
2.	Alkalinity (√)	15.	Carbon dioxide (x)
3.	Ammonical nitrogen (x)	16.	Chlorine demand (x)
4.	Chloride (√)	17.	Iodine (x)
5.	Chlorine residual (x)	18.	Sulphite (x)
6.	Dissolved oxygen (√)	19.	Silica (x)
7.	Fluoride (√)	20.	Cyanide (x)
8.	Total hardness (√)	21.	Sulphide (x)
9.	Total kjehldal nitrogen (TKN) (x)		
10.	Nitrite nitrogen (√)		
11.	Nitrate nitrogen (√)		
12.	Phosphate (√)		
13.	Sulphate (√)		

(ii) Trace Metals [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Boron (B) (x)	16.	Arsenic (As) (x)
2.	Cadmium (Cd) (x)	17.	Aluminium (Al) (x)
3.	Calcium (Ca) (x)	18.	Beryllium (Be) (x)
4.	Chromium (Cr) Total (x)	19.	Barium (Ba) (x)
5.	Chromium (Cr) Hexavalent (x)	20.	Lithium (Li) (x)
6.	Copper (Cu) (x)	21.	Manganese (Mn) (x)
7.	Iron (Fe) (x)	22.	Selenium (Se) (x)
8.	Lead (Pb) (x)	23.	Silver (Ag) (x)
9.	Magnesium (Mg)	24.	Strontium (Sr) (x)
10.	Mercury (Hg) (x)	25.	Tin (Sn) (x)
11.	Nickel (Ni) (x)	26.	Antimony (Sb) (x)
12.	Potassium (K) (x)	27.	Cobalt (Co) (x)
13.	Sodium (Na)	28.	Vanadium (V) (x)
14.	Sodium absorption ratio (SAR)		
15.	Zinc (Zn) (x)		

(C) Organics (General) and Trace Organics [Please mark Yes(√)/No (x) and give details at Appendix J for Trace organics]

S. No.	Parameter	S. No.	Parameter
1.	Bio-chemical oxygen demand (BOD) (√)	6.	Total organic carbon (TOC) (x)
2.	Chemical oxygen demand (COD) (√)	7.	Adsorbable organic halide (AOX) (x)
3.	Oil & Grease (√)	8.	Surfactants (x)
4.	Phenol (x)	9.	Tannin & lignin (x)
5.	Pesticide (each) (x)	10.	Poly-chlorinated biphenyl (PCB's) each (x)
	(i) Organo-chlorine (BHC, DDT, Aldrin, Endosulphan) (x)	11.	Polynuclear aromatic hydrocarbon (PAH) each (x)
	(ii) Organo nitrogen-phosphorous (Malathion, methyl parathion, Chloropyriphos) (x)	12.	Organic Carbon (in solid) (x)
		13.	Carbon/Nitrogen ratio (x)

D) Microbiological Tests [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Total Coliform (√)	5.	Total plate count (√)
2.	Faecal Coliform (√)	6.	Enterococcus (x)
3.	Faecal Streptococci(√)	37	Coliphage (x)
4.	E. Coli(√)		

E) Toxicological Tests [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent)	1.	Bio-accumulation, bio magnification and bio-transformation studies (x)
		2.	Estimation of the effect at tissue level (x)
		3.	Measurement of toxicity using Daphnia or other organism (x)
		4.	Measurement of toxicity factor using zebra fish (dimensionless toxicity test (x)

F) Biological Tests [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Benthic organism identification and count (x)	5.	Saprobity Index (x)
2.	Macrophytic identification (x)	6.	Chlorophyll (x)
3.	Planktonic identification count (x)	7.	Primary productivity (x)
4.	Measurement of various diversity index (x)	8.	P/R Ratio (x)

G) Characterization of Hazardous Waste [Please mark Yes(√)/No (x)]

S. No.	Parameter
1.	Preparation of Leachate (TCLP extract/water extract) (x)
2.	Corrosivity (x)
3.	Ignibility (Flash point) (x)
4.	Reactivity (x)
5.	Toxicity (x)
6.	Measurement of heavy metals/pesticides in the waste/leachate (x)

H) Soil/Sludge/Sediment and Solid Waste [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Boron (x)	16	Ammonia (x)
2.	Cation Exchange Capacity (CEC) (x)	17	Bicarbonate (x)
3.	Electrical Conductivity (EC) (x)	18	Calcium (x)
4.	Nitrogen available (x)	19	Calcium carbonate (x)
5.	Organic carbon/matter (chemical method) (x)	20	Chloride (x)
6.	pH (x)	21	Colour(x)
7.	Phosphorous (available) (x)	22	Exchangeable sodium percentage (ESP) (x)
8.	Phosphate (ortho) (x)	23	Gypsum requirement(x)
9.	Phosphate (total) (x)	24	H. Acid(x)
10.	Potassium (x)	25	Heavy metal(x)
11.	SAR in soil extract (x)	26	Magnesium(x)
12.	Sodium (x)	27	Mechanical soil analysis(x)
13.	Soil moisture (x)	28	Nitrate(x)
14.	TKN (x)	29	Nitrite(x)
15.	Calorific value (x)	30	PAH(x)
		31	Pesticide(x)
		32	Potash (available) (x)
		33	Sulphate(x)
		34	Sulphur(x)
		35	TOC(x)
		36	Total water soluble salt(x)
		37	Water holding capacity(x)

## 4. LIST OF INSTRUMENTS FOR WATER, WASTEWATER &amp; SOLID SAMPLES

## a) LIST OF EQUIPMENT GENERAL ANALYSIS

[Note: Please mark Yes (√)/No(x)]

S. No.	EQUIPMENT	Yes/No	Nos. available**
<b>BASIC EQUIPMENTS</b>			
1.	Ice Box/s* (2)	(√)	04
2.	Filtration assembly* (1)	(√)	01
3.	Heating Mantle	(√)	01
4.	Stop watch	(x)	-
5.	Hot air oven* (2)	(√)	02
6.	Hot plate* (2)	(x)	-

S. No.	EQUIPMENT	Yes/No	Nos. available**
7.	Muffle furnace* (1)	(x)	-
8.	Standard weight	(√)	01
9.	Water bath	(√)	01
10.	Thermometer/s* (4)	(√)	04
11.	Refrigerator/s big size* 300 litres or above (2)	(√)	01
SPECIFIC EQUIPMENTS			
1.	Autoclave* (1)	(√)	01
2.	Bottom sampler	(x)	-
3.	BOD Incubator* (1)	(√)	03
4.	Centrifuge* (1)	(x)	-
5.	Aquarium for bioassay test* (4)	(x)	-
6.	COD Digester with aluminium heating blocks * (1)	(√)	01
7.	Colony Counter	(√)	01
8.	Depth Sampler	(x)	-
9.	Digester with condensers	(x)	-
10.	Digestion chamber* (1)	(x)	-
11.	Dissolved oxygen sampler	(x)	-
12.	Flocculator ( Jar testing apparatus)	(x)	-
13.	Flow meter	(x)	-
14.	Incubator for bacteriological test* (2)	(√)	01
15.	Laminar flow* (1)	(√)	01
16.	Magnetic Stirrer with hot plate* (2)	(x)	-
17.	Mechanical Shaker *(1)	(x)	-
18.	Microwave digester	(x)	-
19.	TKN Analyzer semi automatic with aluminum block digester	(x)	-
20.	Ultrasonic water bath	(√)	01
21.	Vacuum pump* (1)	(x)	-
22.	Water purification / distillation assembly* (1)	(√)	01
23.	Ekman Dredge	(x)	-
24.	Water sampler	(x)	-
25.	Oil & Grease sampler	(x)	-
26.	Water Testing kit	(x)	-
27.	Chloroscope for residual chlorine	(x)	-
28.	Any other equipment (please attach details on separate sheet)		

## (b) LIST OF INSTRUMENTS WATER/WASTE WATER ANALYSIS

S. No.	Name of instrument	Yes/No	Total Nos. **
<b>BASIC INSTRUMENTS</b>			
1.	Analytical Balance +* (1) 1 mg	(√)	03
2.	Conductivity Meter* (1)	(√)	01
3.	Dissolved oxygen meter	(x)	-
4.	pH Meter with combined glass electrode* (1)	(√)	01
5.	Turbidity meter* (1)	(√)	01
<b>SPECIFIC INSTRUMENTS</b>			
1.	Alpha/Beta Radioactivity Counter	(x)	-
2.	Atomic Absorption Spectrophotometer (Flame) with the following cathode lamps + (√ available HCL)* (1)	(x)	-
	(i) Aluminium (ii) Antimony (iii) Arsenic (iv) Barium (v) Barium (vi) Boron (vii) Cadmium (viii) Calcium (ix) Chromium (x) Copper (xi) Iron (xii) Lithium (xiii) Lead (xiv) Magnesium (xv) Manganese (xvi) Mercury (xvii) Nickel (xviii) Potassium (xix) Selenium (xx) Silver (xxi) Sodium (xxii) Strontium (xxiii) Tin (xxiv) Cobalt (xxv) Vanadium (xxvi) Zinc (xxvii) Other, pl. specify		
3.	Atomic Absorption Spectrophotometer with Graphite Furnace and Hydride Generation System	(x)	-
4.	Organic Halogen Analyzer (AOX/TOX)	(x)	-
5.	Binocular Microscope	(x)	-
6.	Flame Photometer* (1)	(√)	01
7.	Gas Chromatograph with following detector*++ (1)	(x)	-
	- ECD-NPD - FID-TID - FPD - Other detector	(x)	-
8.	Gas Chromatograph with Mass Spectrometer (GC-MS)	(x)	-
9.	High Pressure Liquid Chromatograph (HPLC)	(x)	-
10.	Ion Chromatograph	(x)	-
11.	Inductively Coupled Plasma (ICP) Spectrometer	(x)	-
12.	Mercury Analyzer Digital* (1)	(x)	-
13.	Portable Analyzer Kit (DO, pH, Temp. Cond.)	(x)	-

14.	Precision Balance weighing up to 1 mg* (water / air)	(x)	-
15.	Rotary Evaporator* (1)	(x)	-
16.	Spectrophotometer (Visible)* or Ultraviolet & visible* (1)	(√)	02
17.	Stereo Microscope	(x)	-
18.	Total Organic Carbon Analyzer	(x)	-
19.	Any other instruments (Please enclose details on separate sheet)	(x)	-

## (c) LIST OF INSTRUMENTS FOR HAZARDOUS WASTE ANALYSIS

S. No.	Instruments	Nos. Available
1.	Bomb colorimeter	(x)
2.	Elemental analyzer	(x)
3.	Flash point apparatus	(x)
4.	Moisture content meter	(x)
5.	Rotary evaporator	(x)
6.	Toxicity characteristic leaching procedure (TCLP) extractor	(x)
7.	Toxic Gas analyzer	(x)
8.	X-ray fluorescence (XRF) Spectrometer	(x)
9.	Zero head space extractor (ZHE)	(x)
10.	Any other equipment (please attach details on separate sheet)	(x)

## (d) LIST OF MAINTENANCE CONTRACT STATUS OF IMPORTANT SOPHISTICATED INSTRUMENTS [Note: Please mark Yes (√)/No (x)]

S. No.	Name of the instrument	Repair job undertaken on Annual Maintenance contract / emergency call basis	Whether sufficient spares available
1.	AAS (Flame & Flameless)	(x)	-
2.	AOX	(x)	-
3.	Total Organic Carbon Analyzer	(x)	-
4.	Gas Chromatograph	(x)	-
5.	Water purification system	(√)	-
6.	Analytical balance	(√)	-
7.	Specificion meter	(x)	-
8.	Mercury analyzer	(x)	-
9.	UV-Visible spectrophotometer	(√)	-
10.	Alpha/Beta Radioactivity Counter	(x)	-
11.	Any other equipment (please attach details on separate sheet)	-	-

## (e) REFERENCE MATERIAL (RMS) AND CERTIFIED REFERENCE MATERIAL (CRMS)

S. No.	Parameters	Availability of RMS/CRMS	
		(√/X)	Nos. of standards
1.	Trace Metals	(x)	-
2.	Organo-chlorine pesticides	(x)	-
3.	Organo-nitrogen phosphorous pesticides	(x)	-
4.	Polychlorinated Biphenyls (PCB's)	(x)	-
5.	Polycyclic aromatic hydrocarbon (PAH)	(x)	-
6.	Benzene, Ethylene, Toluene & Xylene	(x)	-
7.	Dioxins and Furans	(x)	-
8.	Any other (please attach details on separate sheet)	(x)	-

## f) LIST OF GLASS APPARATUS AND DISTILLATION ASSEMBLIES

[Note: Please mark Yes (√)/No (x)]

S. No.	Particulars	Yes or No	Total nos. available
1.	Fluoride distillation assembly	No	-
2.	Cyanide distillation assembly	No	-
3.	Ammonia distillation assembly	No	-
4.	Water distillation assembly	Yes	01
5.	Soxlet extraction assembly	No	-
6.	Arsenic estimation assembly	No	-
7.	Phenol distillation assembly	No	-
8.	Any other (please enclose details on separate sheet)	No	-

**(5) AIR QUALITY PARAMETERS**

Facilities available [Please mark Yes (√)/No (x)]

**A. Ambient Air / Fugitive Emissions**

S. No.	Group of parameter	Yes/No (√/x)	Adopted Method
(i)	<b>Mandatory Parameters</b>		
1.	Nitrogen dioxide as NO <sub>2</sub>	(√)	IS 5182 Part 6/Jacob and Hochheiser Method
2.	Sulphur dioxide (SO <sub>2</sub> )	(√)	IS 5182 Part 2/West and Gaeke Method
3.	Total suspended particulate matter	(x)	-
4.	Respirable suspended particulate matter (PM <sub>10</sub> )	(√)	IS 5182 Part 23/Gravimetric Method
(ii)	<b>Secondary Parameters</b>		
1.	Ammonia	(√)	Indophenol Method
2.	Carbon monoxide	(√)	Non Dispersive Infrared (NDIR)
3.	Chlorine	(x)	-
4.	Fluoride	(x)	-
5.	Non methane hydrocarbon	(x)	-
6.	Lead	(x)	-
7.	Methane	(x)	-
8.	Ozone	(√)	UV Photometric
9.	Benzene Toluene Xylene (BTX)	(x)	-
10.	Polycyclic aromatic hydrocarbon (PAH) Benzo-a-pyrine & others	(x)	-
11.	PM <sub>2.5</sub>	(√)	IS 5182 part 24/Gravimetric Method
12.	Volatile Organics Carbon	(x)	-
13.	Any other (please attach details on separate sheet)	(x)	-

**B. Stack gases/source emission**

S. No.	Group of parameter	Yes/No (√/x)	Adopted method
(i)	<b>Mandatory Parameters</b>		
1.	Particulate matter	(√)	IS 11255 Part 1/ CPCB
2.	Sulphur dioxide	(√)	IS 11255 Part 2/CPCB
3.	Velocity & flow	(√)	Isokinetic method
4.	Carbon dioxide	(√)	Flue gas analyzer
5.	Carbon monoxide	(√)	Flue gas analyzer
6.	Temperature	(√)	Flue gas analyzer
7.	Oxygen	(√)	Flue gas analyzer

8.	Oxides of nitrogen	(√)	Flue gas analyzer
<b>(ii)</b>	<b>Secondary Parameters</b>		
1.	Acid mist	(x)	-
2.	Ammonia	(x)	-
3.	Chlorine	(x)	-
4.	Fluoride (Particulate)	(x)	-
5.	Fluoride (Gaseous)	(x)	-
6.	Hydro-chloric acid	(x)	-
7.	Total Hydro carbon	(x)	-
8.	Hydrogen Sulphide	(x)	-
9.	Carbon disulphide	(x)	-
10.	Mercaptan	(x)	-
11.	Any other (please attach details on separate sheet)	(x)	-

### C. Noise level

S. No.	Group of parameter	Yes/No	Adopted method
<b>(i)</b>	<i>Mandatory Parameters</i>		
1.	Noise level measurement (20 to 140 dba)	(√)	Noise level Meter
2.	Ambient Noise & Source specific noise	(√)	Noise level Meter
3.	Any other (please attach details on separate sheet)	(x)	-

### D. Meteorological Monitoring

S. No.	Group of parameter	Yes/No	Adopted method
<b>(i)</b>	<i>Mandatory Parameters</i>		
1.	Ambient Temperature	(√)	Instrumental (Weather Monitoring Station)
2.	Wind direction	(√)	Instrumental (Weather Monitoring Station)
3.	Wind speed	(√)	Instrumental (Weather Monitoring Station)
4.	Relative Humidity	(√)	Instrumental (Weather Monitoring Station)
<b>(ii)</b>	<b>Secondary Parameters (Minimum required at least one parameter)</b>		
1.	Solar radiation	(x)	-
2.	Rain fall	(√)	Instrumental (Weather Monitoring Station)

Any other (please attach details on separate sheet)

Note: Instrument not working. Repairing under process.

**E. Vehicular Emission Monitoring**

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Carbon monoxide	(√)	CO-HC Analyzer
2.	Smoke Density	(√)	Smoke Meter
3.	Hydrocarbon	(√)	CO-HC Analyzer
(ii)	<b>Secondary Parameters (Optional)</b>		
1.	Oxides of Nitrogen	(x)	-

Any other (please attach details on separate sheet)

**6. LIST OF INSTRUMENTS REQUIRED FOR AIR MONITORING**

S. No.	Instrument	Yes/No	If yes, give Total Nos. **
1.	BTX analyzer (PID/FID detector)	Yes	01
2.	BTX calibrator	No	-
3.	Charcoal Tubes	No	-
4.	CO Analyzer (Non-dispersive Infrared principle)	No	-
5.	Detector Tubes with Pump of different pollutants (Please specify details)	No	-
6.	Dust analyzer (Beta Attenuation/TOEN)	No	-
7.	Exhaust CO/HC analyzer	No	-
8.	Flue gas analyzer	No	-
9.	Gas Chromatograph with Air sampling port, FID & PFPD detectors	No	-
10.	Handy sampler for gaseous monitoring* (2)	No	-
11.	High Volume sampler with flow controller (4)	No	-
12.	Low flow pump	No	-
13.	Meteorological sensors with mast (WS, WD, Temp., Humidity)* (1)	No	-
14.	Micro balance (Readability 1 µg)	No	-
15.	Multi calibration system	No	-
16.	Multi channel recorder	No	-
17.	Multi calibration kit (portable)	No	-
18.	Noise level meter* (2)	Yes	02
19.	NO-NO <sub>2</sub> -Nox Analyzer (Chemiluminescence based)	No	-
20.	Ozone analyzer (Ultraviolet)	Yes	01
21.	Permeation tubes for calibration	No	-
22.	RSPM sampler with flow controller/brush less motor + calibration kit* (4)	Yes	08
23.	Smoke density meter	No	-
24.	SO <sub>2</sub> Analyzer (Pulsed Fluorescence based)	No	-
25.	Soap bubble meter	No	-
26.	Stack monitoring kit with High Temp. Probes* (2)	No	-
27.	Toddler Bags	No	-
28.	Wet gas meter	No	-
29.	Any other (please specify)	No	-

**(7) LIST OF INFRASTRUCTURAL EQUIPMENT/ITEMS FOR AIR ANALYSIS**

[Please mark Yes (√)/No (x)]

S. No.	Items	Yes/No	If yes, give Total Nos.**
1.	Air conditioner (split type)	Yes	06
2.	Air Conditioner (Window type)	No	-
3.	Breathing apparatus	No	-
4.	Cold room for sample storage	Yes	01
5.	Computer with printer	Yes	04
6.	Constant voltage transformer	Yes	01
7.	Face shield and helmet	Yes	10
8.	Gas mask	Yes	10
9.	Refrigerator (frost free, CFC free)	Yes	02
10.	Tool Kit (Electrical & Mechanical)	Yes	03
11.	Uninterrupted power supply (UPS) system	Yes	04
12.	First aid box	Yes	02
13.	Trolley for sample transportation	Yes	02
14.	Fume Hood	No	-
15.	Exhaust System	Yes	02
16.	Fire Extinguisher	Yes	01
17.	Electricity Generator	Yes	01(DG set 100 KBA)
18.	Gas Cylinder Trolleys	Yes	02
19.	Any other (please specify)		

**8) Budgetary information**

SNo	Budget	[year 2022-23]	[year 2023-24]
1.	Sanctioned	215502.00	-
2.	Expenditure	215502.00	-

**(9) Manpower Information**

SNo	Designation	Number of Posts in working	Remarks
1.	Chief Scientific Officer	Nil	-
2.	Senior Scientific Officer	Nil	-
3.	Chief Chemist	Nil	-
4.	Scientist	01	-
5.	Jr Scientist	02	-
6.	Chemist	01	Required Two Chemist for analysis
7.	Sampler	02	-
8.	Laboratory assistant	Nil	-
9.	Laboratory attendant	06	-
10.	Research Fellows	-	-

11.	Field assistant	-	-
12.	NAMP Staff	03	Required Two NAMP staff for rural and commercial sampling stations
13.	NCAP Staff	-	-
14.	Contractual Staff	-	One data entry operator Required
15.	Others	01	One sweeper required

Note: (if any other information)

Name of Place:- Satna

  
Name:- Dr. Rahul Dwivedi  
(Scientist & Lab-Incharge)

2. Infrastructural details of Laboratory: (please enclose brief lay out plan map of laboratory) with organizational chart and laboratory position in there to:

- (i) Total floor space of the environmental laboratory (in sq. mtr): 1436.16 (Sq. Ft)
- a) Water Laboratory = 657.92 Sq. Ft
- b) Biological & Microbiological Laboratory = 389.12 Sq. Ft
- c) Air Laboratory = 400.00 Sq. Ft

Provide scanned photograph of above with layout plan. Enclosed Enclosure-1.2.3

- (ii) Details of major projects undertaken pertaining to environmental studies: -MINARS, NWMP, NAMP

*[Please attach separate sheet, if space is insufficient]*

- (iii) Which of the following type of analytical tests are being carried out in the laboratory [please mark Yes (√)/No (x)]:

- |                                       |  |
|---------------------------------------|--|
| a) Physical -Yes                      | k) Hazardous waste Characterization -<br>-No |
| b) Inorganic general and non metallic | l) Ambient air -Yes                          |
| c) Inorganic (Trace metals) -Yes      | m) Source emission -Yes                      |
| d) Organics (General) -No             | n) Air Toxics- No                            |
| e) Trace Organics -No                 | o) Hazardous Air Pollutants -No              |
| f) Microbiological -Yes               | p) Volatile Organic Carbon -No               |
| g) Toxicity -No                       | m) Noise measurement -Yes                    |
| h) Biological -Yes                    | n) Meteorological -No                        |
| i) Hazardous waste -No                | o) Vehicular emission/Auto exhaust -<br>Yes  |
| j) Soil, sludge, sediment -No         |  |

- (iv) Laboratory scientists/chemist or officials are fully conversant for sampling, monitoring, preservation and transportation [please tick Yes(√)/No(x)].

- |                                 |   |
|---------------------------------|---|
| (a) Water & wastewater -<br>Yes | (i) Hazardous Air Pollutants analysis -No |
| (b) Hazardous waste -No         | (j) Volatile Organic Carbon analysis -No  |

- (c) Solid waste- No                      (k) Noise monitoring -Yes  
 (d) Soil -No                                (l) Meteorological monitoring-No  
 (e) Municipal waste -Yes                (m) Source emission- Yes  
 (f) Biomedical waste -No                (n) Auto exhaust monitoring-Yes  
 (g) Ambient air/fugitive emission -Yes    (o) On line ambient air quality monitoring-No  
 (h) Air Toxics analysis -No

(v) Laboratory scientists/chemists or officials are capable of analyzing desired/ relevant parameters in various types of matrix [please tick [Yes(√)/No (x)]

- a. Liquid Samples (water & wastewater) – Yes  
 b. Solid Samples (soil/mud/solid waste/sludge etc.) –No  
 c. Semi-solid samples (sludge/slurry) -No  
 d. Gaseous samples (Ambient air, source emission, vehicular emission) -Yes

### 3. LIST OF PARAMETERS BEING ANALYSED FOR WATER & WASTE WATER & SOLID SAMPLES

A) Physical Tests : [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Conductivity -Yes	11.	Flocculation test (Jar test) - No
2.	Colour- No	12.	Odour- No
3.	pH-Yes	13.	Salinity- No
4.	Fixed & volatile solids- No	14.	Settleable solids- No
5.	Total solids-Yes	15.	Sludge volume index (SVI) - No
6.	Total dissolved solids-Yes		
7.	Total suspended solids-Yes		
8.	Turbidity-Yes		
9.	Temperature-Yes		
10.	Velocity & discharge Measurement of industrial effluent stream - No		

## B) Inorganic [Please mark Yes (✓)/No (x)]

## (i) General &amp; Non-metallic

S. No.	Parameter	S. No.	Parameter
1.	Acidity- No	14.	Bromide- No
2.	Alkalinity- Yes	15.	Carbon dioxide- No
3.	Ammonical nitrogen- Yes	16.	Chlorine demand- No
4.	Chloride- Yes	17.	Iodine- No
5.	Chlorine residual- No	18.	Sulphite- No
6.	Dissolved oxygen- Yes	19.	Silica- No
7.	Fluoride- No	20.	Cyanide- No
8.	Total hardness- Yes	21.	Sulphide- No
9.	Total kjehldal nitrogen (TKN) - Yes		
10.	Nitrite nitrogen- Yes		
11.	Nitrate nitrogen- Yes		
12.	Phosphate- Yes		
13.	Sulphate- Yes.		

## Trace Metals [Please mark Yes(✓)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Boron (B) - No	16.	Arsenic (As) - No
2.	Cadmium (Cd) - No	17.	Aluminium (Al) - No
3.	Calcium (Ca) - No	18.	Beryllium (Be) - No
4.	Chromium (Cr) Total- No	19.	Barium (Ba) - No
5.	Chromium (Cr) Hexavalent- No	20.	Lithium (Li) - No
6.	Copper (Cu) - No	21.	Manganese (Mn) - No
7.	Iron (Fe) - No	22.	Selenium (Se) - No
8.	Lead (Pb) - No	23.	Silver (Ag) - No
9.	Magnesium (Mg) - No	24.	Strontium (Sr) - No
10.	Mercury (Hg) - No	25.	Tin (Sn) - No
11.	Nickel (Ni) - No	26.	Antimony (Sb) - No
12.	Potassium (K) - Yes	27.	Cobalt (Co) - No
13.	Sodium (Na) - Yes	28.	Vanadium (V) - No
14.	Sodium absorption ratio (SAR) - No		
15.	Zinc (Zn) - No		

(C) Organics (General) and Trace Organics [Please mark Yes(√)/No (x) and give details at Appendix J for Trace organics]

S. No.	Parameter	S. No.	Parameter
1.	Bio-chemical oxygen demand (BOD) - Yes	6.	Total organic carbon (TOC) - No
2.	Chemical oxygen demand (COD) - Yes	7.	Adsorbable organic halide (AOX) - No
3.	Oil & Grease- Yes	8.	Surfactants- No
4.	Phenol- No	9.	Tannin & lignin- No
5.	Pesticide (each) - No	10.	Poly-chlorinated biphenyl (PCB's)each- No
	(i) Organo-chlorine (BHC, DDT, Aldrin, Endosulphan) - No	11.	Polynuclear aromatic hydrocarbon (PAH) each- No
	(ii) Organo nitrogen-phosphorous (Malathion, methyl parathion, Chloropyrifos) - No	12.	Organic Carbon (in solid) - No
		13.	Carbon/Nitrogen ratio- No

D) Microbiological Tests [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Total Coliform- Yes	5.	Total plate count -No
2.	Faecal Coliform- Yes	6.	Enterococcus-No
3.	Faecal Streptococci- Yes	37.	Coliphage-No
4.	E. Coli- No		

E) Toxicological Tests [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent) - No	1.	Bio-accumulation, bio magnification and bio-transformation studies
		2.	Estimation of the effect at tissue level
		3.	Measurement of toxicity using Daphnia or other organism
		4.	Measurement of toxicity factor using zebra fish (dimensionless toxicity test)

F) Biological Tests [Please mark Yes(√)/No (x)]

S.No.	Parameter	S.No.	Parameter
1.	Benthic organism identification and count - N	5.	Saprobity Index
2.	Macrophytic identification- No	6.	Chlorophyll
3.	Planktonic identification count- No	7.	Primary productivity
4.	Measurement of various diversity index- No	8.	P/R Ratio

G) Characterization of Hazardous Waste [Please mark Yes(√)/No (x)]

S. No.	Parameter
1.	Preparation of Leachate (TCLP extract/water extract) - No
2.	Corrosivity- No
3.	Ignibility (Flash point) - No
4.	Reactivity- No
5.	Toxicity- No
6.	Measurement of heavy metals/pesticides in the waste/leachate- No

H) Soil/Sludge/Sediment and Solid Waste [Please mark Yes(√)/No (x)]

S.No.	Parameter	S.No.	Parameter
1.	Boron- No	16	Ammonia- No
2.	Cation Exchange Capacity (CEC) - No	17	Bicarbonate- No
3.	Electrical Conductivity (EC) - Yes	18	Calcium- No
4.	Nitrogen available- Yes	19	Calcium carbonate- No
5.	Organic carbon/matter (chemical method) - No	20	Chloride- Yes
6.	pH- Yes	21	Colour- No
7.	Phosphorous (available) - No	22	Exchangeable sodium percentage (ESP) - No
8.	Phosphate (ortho) - No	23	Gypsum requirement- No
9.	Phosphate (total) - Yes	24	H. Acid- No
10.	Potassium- Yes	25	Heavy metal- No
11.	SAR in soil extract- No	26	Magnesium- No
12.	Sodium- Yes	27	Mechanical soil analysis- No
13.	Soil moisture- No	28	Nitrate- Yes
14.	TKN- Yes	29	Nitrite- Yes
15.	Calorific value- No	30	PAH- No
		31	Pesticide- No
		32	Potash (available) - No
		33	Sulphate
		34	Sulphur- No
		35	TOC- No
		36	Total water soluble salt - No
		37	Water holding capacity- No

## 4. LIST OF INSTRUMENTS FOR WATER, WASTEWATER &amp; SOLID SAMPLES

## a) LIST OF EQUIPMENT GENERAL ANALYSIS

[Note: Please mark Yes (√)/No(x)]

S. No.	EQUIPMENT	Yes/No	Nos. available**
<b>BASIC EQUIPMENTS</b>			
1.	Ice Box/s* (2)	Yes	
2.	Filtration assembly* (1)	Yes	
3.	Heating Mantle	Yes	
4.	Stop watch	No	
5.	Hot air oven* (2)	Yes	
6.	Hot plate* (2)	No	
7.	Muffle furnace* (1)	Yes	
8.	Standard weight	Yes	
9.	Water bath	Yes	
10.	Thermometer/s* (4)	Yes	
11.	Refrigerator/s big size* 300 litres or above (2)	Yes	
<b>SPECIFIC EQUIPMENTS</b>			
1.	Autoclave* (1)	Yes	
2.	Bottom sampler	No	
3.	BOD Incubator* (1)	Yes	
4.	Centrifuge* (1)	No	
5.	Aquarium for bioassay test* (4)	No	
6.	COD Digester with aluminium heating blocks * (1)	Yes	
7.	Colony Counter	No	
8.	Depth Sampler	No	
9.	Digester with condensers	Yes	
10.	Digestion chamber* (1)	No	
11.	Dissolved oxygen sampler	No	
12.	Flocculator ( Jar testing apparatus)	No	
13.	Flow meter	No	
14.	Incubator for bacteriological test* (2)	Yes	
15.	Laminar flow* (1)	No	
16.	Magnetic Stirrer with hot plate* (2)	Yes	

S. No.	EQUIPMENT	Yes/No	Nos. available**
17	Mechanical Shaker *(1)	No	
18	Microwave digester	No	
19	TKN Analyzer semi automatic with aluminum block digester	No	
20	Ultrasonic water bath	No	
21	Vacuum pump* (1)	Yes	
22	Water purification / distillation assembly* (1)	No	
23	Ekman Dredge	No	
24	Water sampler	No	
25	Oil & Grease sampler	No	
26	Water Testing kit	No	
27	Chloroscope for residual chlorine	No	
28	Any other equipment (please attach details on separate sheet)	--	

## (b) LIST OF INSTRUMENTS WATER/WASTE WATER ANALYSIS

S. No.	Name of instrument	Yes/No	Total Nos. **
<b>BASIC INSTRUMENTS</b>			
1.	Analytical Balance +* (1) 1 mg	Yes	
2.	Conductivity Meter* (1)	Yes	
3.	Dissolved oxygen meter	No	
4.	pH Meter with combined glass electrode* (1)	Yes	
5.	Turbidity meter* (1)	Yes	
<b>SPECIFIC INSTRUMENTS</b>			
1.	Alpha/Beta Radioactivity Counter	No	
2.	Atomic Absorption Spectrophotometer (Flame) with the following cathode lamps + (√ available HCL)* (1)	No	
	(i) Aluminium	(ii) Antimony	
	(iii) Arsenic	(iv) Barium	
	(v) Barium	(vi) Boron	
	(vii) Cadmium	(viii) Calcium	
	(ix) Chromium	(x) Copper	
	(xi) Iron	(xii) Lithium	
	(xiii) Lead	(xiv) Magnesium	
	(xv) Manganese	(xvi) Mercury	
	(xvii) Nickel	(xviii) Potassium	
	(xix) Selenium	(xx) Silver	
	(xxi) Sodium	(xxii) Strontium	
	(xxiii) Tin	(xxiv) Cobalt	
	(xxv) Vanadium	(xxvi) Zinc	
		(xxvii) Other, pl. specify	

3	Atomic Absorption Spectrophotometer with Graphite Furnace and Hydride Generation System	No	
4	Organic Halogen Analyzer (AOX/TOX)	No	
5	Binocular Microscope	No	
6	Flame Photometer* (1)	Yes	
7	Gas Chromatograph with following detector*** (1)	No	
	- ECD-NPD - FID-TID - FPD - Other detector		
8	Gas Chromatograph with Mass Spectrometer (GC-MS)	No	
9	High Pressure Liquid Chromatography (HPLC)	No	
10	Ion Chromatograph	No	
11	Inductively Coupled Plasma (ICP) Spectrometer	No	
12	Mercury Analyzer Digital* (1)	No	
13	Portable Analyzer Kit (DO, pH, Temp. Cond.)	No	
14	Precision Balance weighing up to 1 mg* (water / air)	Yes	
15	Rotary Evaporator* (1)	No	
16	Spectrophotometer (Visible)* or Ultraviolet & visible* (1)	Yes	
17	Stereo Microscope	No	
18	Total Organic Carbon Analyzer	No	
19	Any other instruments (Please enclose details on separate sheet)	--	

## (b) LIST OF INSTRUMENTS FOR HAZARDOUS WASTE ANALYSIS

S. No.	Instruments	Nos. Available
1.	Bomb colorimeter	No
2.	Elemental analyzer	No
3.	Flash point apparatus	No
4.	Moisture content meter	No
5.	Rotary evaporator	No
6.	Toxicity characteristic leaching procedure (TCLP) extractor	No
7.	Toxic Gas analyzer	No
8.	X-ray fluorescence (XRF) Spectrometer	No
9.	Zero head space extractor (ZHE)	No
10	Any other equipment (please attach details on separate sheet)	No

## (b) LIST OF MAINTENANCE CONTRACT STATUS OF IMPORTANT SOPHISTICATED INSTRUMENTS [Note: Please mark Yes (✓)/No (x)]

S. No.	Name of the instrument	Repair job undertaken on Annual Maintenance contract / emergency call basis	Whether sufficient spares available
1.	AAS (Flame & Flameless)	No	No
2.	AOX	No	No
3.	Total Organic Carbon Analyzer	No	No
4.	Gas Chromatograph	No	No
5.	Water purification system	No	No
6.	Analytical balance	No	No

7.	Specific ion meter	No	No
8.	Mercury analyzer	No	No
9.	UV-Visible spectrophotometer	No	No
10.	Alpha/Beta Radioactivity Counter	No	No
11.	Any other equipment (please attach details on separate sheet)	No	No

e) REFERENCE MATERIAL (RMS) AND CERTIFIED REFERENCE MATERIAL (CRMS)

S. No.	Parameters	Availability of RMS/CRMS	
		(√/X)	Nos. of standards
1.	Trace Metals	No	No
2.	Organo-chlorine pesticides	No	No
3.	Organo-nitrogen phosphorous pesticides	No	No
4.	Polychlorinated Biphenyls (PCB's)	No	No
5.	Polycyclic aromatic hydrocarbon (PAH)	No	No
6.	Benzene, Ethylene, Toluene & Xylene	No	No
7.	Dioxins and Furans	No	No
8.	Any other (please attach details on separate sheet)	No	No

f) LIST OF GLASS APPARATUS AND DISTILLATION ASSEMBLIES

[Note: Please mark Yes (√)/No (x)]

S. No.	Particulars	Yes or No	Total nos. available
1.	Fluoride distillation assembly	No	No
2.	Cyanide distillation assembly	No	No
3.	Ammonia distillation assembly	No	No
4.	Water distillation assembly	No	No
5.	Soxlet extraction assembly	Yes	Yes
6.	Arsenic estimation assembly	No	No
7.	Phenol distillation assembly	No	No
8.	Any other (please enclose details on separate sheet)	---	---

## (5) AIR QUALITY PARAMETERS

Facilities available [Please mark Yes (√)/No (x)]

## A. Ambient Air / Fugitive Emissions

S. No.	Group of parameter	Yes/No (√/x)	Adopted method
(i)	Mandatory Parameters		
1.	Nitrogen dioxide as NO <sub>2</sub>	Yes	
2.	Sulphur dioxide (SO <sub>2</sub> )	Yes	
3.	Total suspended particulate matter	Yes	
4.	Respirable suspended particulate matter (PM <sub>10</sub> )	Yes	
(ii)	Secondary Parameters		
1.	Ammonia	Yes	
2.	Carbon monoxide	Yes	
3.	Chlorine	No	
4.	Fluoride	No	
5.	Non methane hydrocarbon	No	
6.	Lead	No	
7.	Methane	No	
8.	Ozone	Yes	
9.	Benzene Toluene Xylene (BTX)	No	
10.	Polycyclic aromatic hydrocarbon (PAH) Benzo-a-pyrene & others		
11.	PM <sub>2.5</sub>	Yes	
12.	Volatile Organics Carbon	No	
13.	Any other (please attach details on separatesheet)	No	

## A. Stack gases/source emission

S.No.	Group of parameter	Yes/No (√/x)	Adopted method
(i)	Mandatory Parameters		
1.	Particulate matter	Yes	
2.	Sulphur dioxide	Yes	
3.	Velocity & flow	Yes	
4.	Carbon dioxide	Yes	
5.	Carbon monoxide	Yes	
6.	Temperature	Yes	
7.	Oxygen	No	
8.	Oxides of nitrogen	Yes	
(ii)	Secondary Parameters		
1.	Acid mist	No	
2.	Ammonia	No	
3.	Chlorine	No	
4.	Fluoride (Particulate)	No	
5.	Fluoride (Gaseous)	No	
6.	Hydro-chloric acid	No	
7.	Total Hydro carbon	No	
8.	Hydrogen Sulphide	No	
9.	Carbon disulphide	No	
10.	Mercaptan	No	
11.	Any other (please attach details on separatesheet)	No	

**B. Noise level**

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Noise level measurement (20 to 140 dba)	Yes	
2.	Ambient Noise & Source specific noise	Yes	
3.	Any other (please attach details on separate sheet)	---	

**C. Meteorological Monitoring**

S.No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Ambient Temperature	No	
2.	Wind direction	No	
3.	Wind speed	No	
4.	Relative Humidity	No	
(ii)	<i>Secondary Parameters (Minimum required atleast one parameter)</i>		
1.	Solar radiation	No	
2.	Rain fall	No	

Any other (please attach details on separate sheet)

**D. Vehicular Emission Monitoring**

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>	Yes	
1.	Carbon monoxide	Yes	
2.	Smoke Density	Yes	
3.	Hydrocarbon	Yes	
(ii)	<i>Secondary Parameters (Optional)</i>		
1.	Oxides of Nitrogen	No	

Any other (please attach details on separate sheet)

**6. LIST OF INSTRUMENTS REQUIRED FOR AIR MONI**

S.No.	Instrument	Yes/No	If yes, give Total Nos. **
1.	BTX analyzer (PID/FID detector)	No	
2.	BTX calibrator	No	
3.	Charcoal Tubes	No	
4.	CO Analyzer (Non-dispersive Infrared principle)	No	
5.	Detector Tubes with Pump of different pollutants (Please specify details)	No	
6.	Dust analyzer (Beta Attenuation/TOEN)	No	
7.	Exhaust CO/HC analyzer	Yes	
8.	Flue gas analyzer	No	
9.	Gas Chromatograph with Air sampling port, FID & PFPD detectors	No	
10.	Handy sampler for gaseous monitoring* (2)	No	
11.	High Volume sampler with flow controller (4)	No	
12.	Low flow pump	No	
13.	Meteorological sensors with mast (WS, WD, Temp., Humidity)* (1)	No	
14.	Micro balance (Readability 1 µg)	No	
15.	Multi calibration system	No	
16.	Multi channel recorder	No	

17	Multi calibration kit (portable)	Yes	
18	Noise level meter* (2)	Yes	1
19	NO-NO <sub>2</sub> -Nox Analyzer (Chemiluminescence based)	Yes	
20	Ozone analyzer (Ultraviolet)	Yes	
21	Permeation tubes for calibration	No	
22	RSPM sampler with flow controller/brush less motor + calibration kit* (4)	Yes	
23	Smoke density meter	Yes	
24	SO <sub>2</sub> Analyzer (Pulsed Fluorescence based)	No	
25	Soap bubble meter	No	
26	Stack monitoring kit with High Temp. Probes* (2)	No	
27	Toddler Bags	No	
28	Wet gas meter	No	
29	Any other (please specify)	No	

**(7) LIST OF INFRASTRUCTURAL EQUIPMENT/ITEMS FOR AIR ANALYSIS**

[Please mark Yes (√)/No (x)]

S. No.	Items	Yes/No	If yes, give Total Nos.**
1.	Air conditioner (split type)	No	
2.	Air Conditioner (Window type)	No	
3.	Breathing apparatus	Yes	
4.	Cold room for sample storage	No	
5.	Computer with printer	Yes	
6.	Constant voltage transformer	Yes	
7.	Face shield and helmet	Yes	
8.	Gas mask	Yes	
9.	Refrigerator (frost free, CFC free)	No	
10.	Tool Kit (Electrical & Mechanical)	Yes	
11.	Uninterrupted power supply (UPS) system	Yes	
12.	First aid box	Yes	
13.	Trolley for sample transportation	No	
14.	Fume Hood	No	
15.	Exhaust System	Yes	
16.	Fire Extinguisher	Yes	
17.	Electricity Generator	No	
18.	Gas Cylinder Trolleys	No	
19.	Any other (please specify)	---	

**(7) Budgetary information**

S. No.	Budget	[year 2022-23]	[year 2023-24]
1.	Sanctioned		
2.	Expenditure		

## (8) Manpower Information

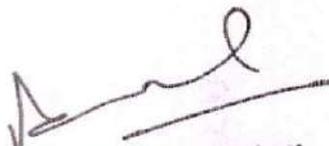
S. No.	Designation	Number of Posts in working	Remarks
1.	Chief Scientific Officer	No	
2.	Senior Scientific Officer	No	
3.	Chief Chemist	No	
4.	Scientist	1	
5.	Jr. Scientist	1	
6.	Chemist	2	
7.	Sampler	0	
8.	Laboratory assistant	1	
9.	Laboratory attendant	2	
10.	Research Fellows	0	
11.	Field assistant	0	
12.	NAMP Staff	2	
13.	NCAP Staff	0	
14.	Contractual Staff	0	
15.	Others	0	

Note: (if any other information )

Name of Place - Shahdol

*Alex*  
Chemist

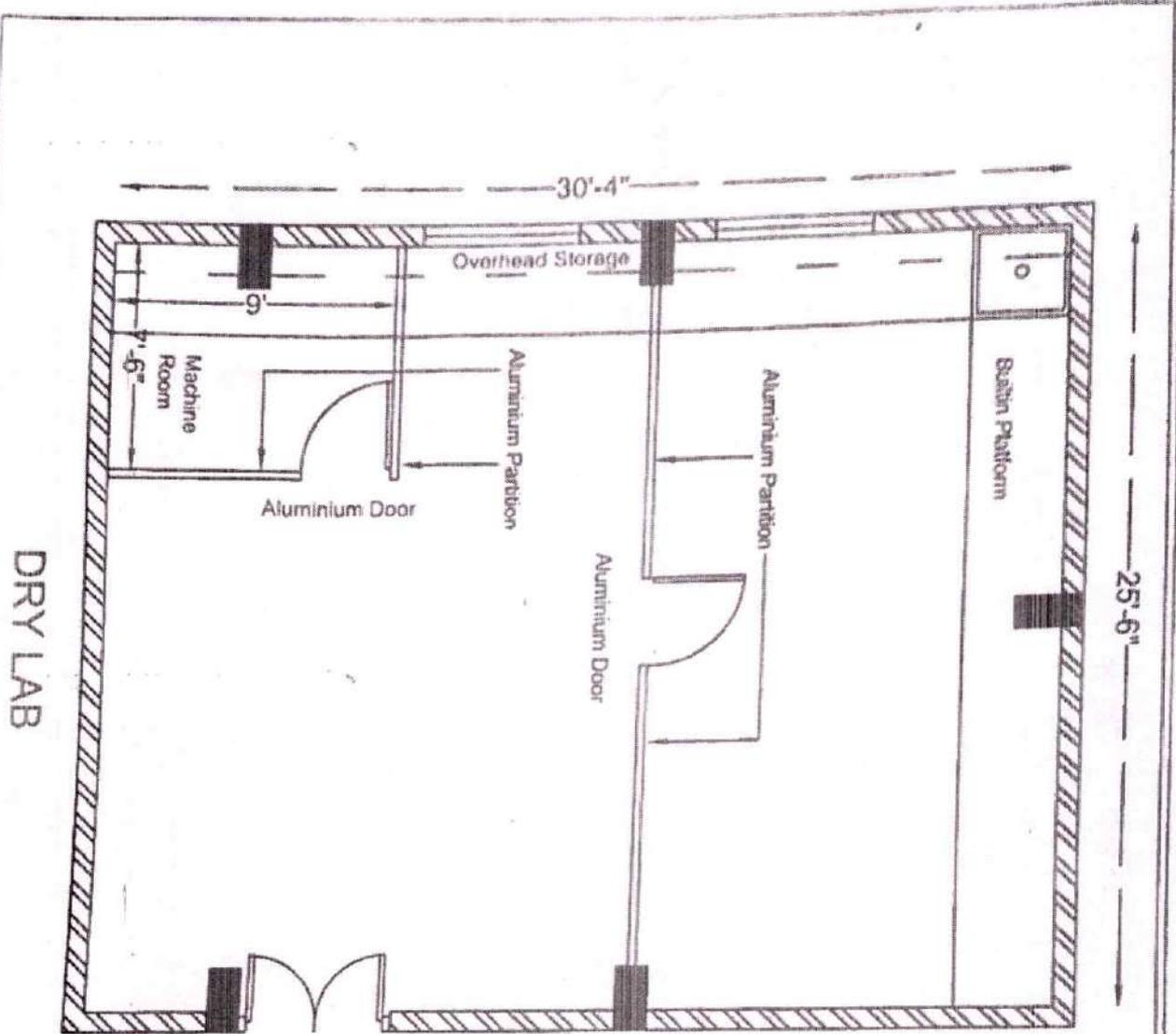
Jr. Scientist

  
Dr. A.K. Dubey (Scientist)  
Name, Designation & Signature of  
Laboratory In charge



Enclosure 2

1997



<p><b>ADDRESS</b></p> <p>METWANS SYSTEMS PVT. LTD.                  401/402/403/404/405/406/407/408/409/410/411/412/413/414/415/416/417/418/419/420/421/422/423/424/425/426/427/428/429/430/431/432/433/434/435/436/437/438/439/440/441/442/443/444/445/446/447/448/449/450/451/452/453/454/455/456/457/458/459/460/461/462/463/464/465/466/467/468/469/470/471/472/473/474/475/476/477/478/479/480/481/482/483/484/485/486/487/488/489/490/491/492/493/494/495/496/497/498/499/500/501/502/503/504/505/506/507/508/509/510/511/512/513/514/515/516/517/518/519/520/521/522/523/524/525/526/527/528/529/530/531/532/533/534/535/536/537/538/539/540/541/542/543/544/545/546/547/548/549/550/551/552/553/554/555/556/557/558/559/560/561/562/563/564/565/566/567/568/569/570/571/572/573/574/575/576/577/578/579/580/581/582/583/584/585/586/587/588/589/590/591/592/593/594/595/596/597/598/599/600/601/602/603/604/605/606/607/608/609/610/611/612/613/614/615/616/617/618/619/620/621/622/623/624/625/626/627/628/629/630/631/632/633/634/635/636/637/638/639/640/641/642/643/644/645/646/647/648/649/650/651/652/653/654/655/656/657/658/659/660/661/662/663/664/665/666/667/668/669/670/671/672/673/674/675/676/677/678/679/680/681/682/683/684/685/686/687/688/689/690/691/692/693/694/695/696/697/698/699/700/701/702/703/704/705/706/707/708/709/710/711/712/713/714/715/716/717/718/719/720/721/722/723/724/725/726/727/728/729/730/731/732/733/734/735/736/737/738/739/740/741/742/743/744/745/746/747/748/749/750/751/752/753/754/755/756/757/758/759/760/761/762/763/764/765/766/767/768/769/770/771/772/773/774/775/776/777/778/779/780/781/782/783/784/785/786/787/788/789/790/791/792/793/794/795/796/797/798/799/800/801/802/803/804/805/806/807/808/809/810/811/812/813/814/815/816/817/818/819/820/821/822/823/824/825/826/827/828/829/830/831/832/833/834/835/836/837/838/839/840/841/842/843/844/845/846/847/848/849/850/851/852/853/854/855/856/857/858/859/860/861/862/863/864/865/866/867/868/869/870/871/872/873/874/875/876/877/878/879/880/881/882/883/884/885/886/887/888/889/890/891/892/893/894/895/896/897/898/899/900/901/902/903/904/905/906/907/908/909/910/911/912/913/914/915/916/917/918/919/920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999/1000</p>	
<p><b>PROJECT NAME :</b></p> <p>CENTRAL EXCISE GST BHAWAN                  BHOPAL</p>	
<p><b>CLIENT :</b></p> <p>METWANS SYSTEMS PVT. LTD.                  401/402/403/404/405/406/407/408/409/410/411/412/413/414/415/416/417/418/419/420/421/422/423/424/425/426/427/428/429/430/431/432/433/434/435/436/437/438/439/440/441/442/443/444/445/446/447/448/449/450/451/452/453/454/455/456/457/458/459/460/461/462/463/464/465/466/467/468/469/470/471/472/473/474/475/476/477/478/479/480/481/482/483/484/485/486/487/488/489/490/491/492/493/494/495/496/497/498/499/500/501/502/503/504/505/506/507/508/509/510/511/512/513/514/515/516/517/518/519/520/521/522/523/524/525/526/527/528/529/530/531/532/533/534/535/536/537/538/539/540/541/542/543/544/545/546/547/548/549/550/551/552/553/554/555/556/557/558/559/560/561/562/563/564/565/566/567/568/569/570/571/572/573/574/575/576/577/578/579/580/581/582/583/584/585/586/587/588/589/590/591/592/593/594/595/596/597/598/599/600/601/602/603/604/605/606/607/608/609/610/611/612/613/614/615/616/617/618/619/620/621/622/623/624/625/626/627/628/629/630/631/632/633/634/635/636/637/638/639/640/641/642/643/644/645/646/647/648/649/650/651/652/653/654/655/656/657/658/659/660/661/662/663/664/665/666/667/668/669/670/671/672/673/674/675/676/677/678/679/680/681/682/683/684/685/686/687/688/689/690/691/692/693/694/695/696/697/698/699/700/701/702/703/704/705/706/707/708/709/710/711/712/713/714/715/716/717/718/719/720/721/722/723/724/725/726/727/728/729/730/731/732/733/734/735/736/737/738/739/740/741/742/743/744/745/746/747/748/749/750/751/752/753/754/755/756/757/758/759/760/761/762/763/764/765/766/767/768/769/770/771/772/773/774/775/776/777/778/779/780/781/782/783/784/785/786/787/788/789/790/791/792/793/794/795/796/797/798/799/800/801/802/803/804/805/806/807/808/809/810/811/812/813/814/815/816/817/818/819/820/821/822/823/824/825/826/827/828/829/830/831/832/833/834/835/836/837/838/839/840/841/842/843/844/845/846/847/848/849/850/851/852/853/854/855/856/857/858/859/860/861/862/863/864/865/866/867/868/869/870/871/872/873/874/875/876/877/878/879/880/881/882/883/884/885/886/887/888/889/890/891/892/893/894/895/896/897/898/899/900/901/902/903/904/905/906/907/908/909/910/911/912/913/914/915/916/917/918/919/920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999/1000</p>	
<p><b>TYPE OF CONTRACT :</b></p> <p>DRY LAB, PCN SAADOL</p>	
<p><b>DATE :</b></p> <p>03/07/2020</p>	
<p><b>APPROVED BY :</b></p>	



**PROFORMA**

INFORMATION REQUIRED FOR COMPLIANCE OF NGT CASE NO. 693/2023 ORDER DTAED  
23.11.2023

**1. General**

- (i) Name of Regional Office : M.P. Pollution Control Board, Regional Office, Rewa  
(ii) Name of the Regional Laboratory : Regional Laboratory, Rewa  
(iii) Address  
a) Postal : Regional Office, M.P.P.C.B. HIG190-191, Nehru Nagar, Rewa  
b) Telephone : 07662-230605  
c) Fax :  
d) E-mail : labincharge94pcbrewa@gmail.com  
(iv) Year of establishment of laboratory : 1985  
(v) Laboratory Incharge details  
a) Name and Designation : Dr. Shubhi Mathur, Jr. Scientist  
b) Address : Regional Office, M.P.P.C.B. HIG190-191, Nehru Nagar, Rewa  
c) Telephone: 07662-230605 E-mail : shubhimathur67@gmail.com  
(vi) Name of accreditation body(s)/organization i.e. ISO, NABL, GLP, SPCB's, PCC's etc. from which the laboratory has been already recognized/accredited, give details.

S.No.	Name of the certification/recognition body/organization	Accreditation / recognition granted for the activities	Environmental Parameter covered	Validity up to
1.	M.P.P.C.B. vide MP Gazette Notification, part 3(1) Bhopal dt. 8.02.2008.	Water & Air monitoring	Water-29 Air-04	-
2.	ISO 9001-2015	Provision for office operation & regulation of Environmental laws, Testing, analysis of Water, Soil, Env. Scientific, Industrial Pollution Testing Machine & Kits Pollution analysis & research study.	-	12.09.2020

**2. Infrastructural details of Laboratory: (please enclose brief lay out plan map of laboratory) with organizational chart and laboratory position in there to:**

- (i) Total floor space of the environmental laboratory (in sq.mtr): 117..00  
a) Water Laboratory = 76.00 Sq. mtr  
b) Biological & Microbiological Laboratory = 11.00 Sq. mtr  
c) Air Laboratory = 30.00 Sq. mtr  
d) Provide scanned photograph of above with layout plan. -



क्षेत्रीय कार्यालय

म.प्र. प्रदूषण नियंत्रण बोर्ड,

एच.आई.जी.190-191 नेहरू नगर रीवा (म.प्र.)

Tel / Fax : (07662) 230605 E-mail : ropcb-rewa@mp.gov.in

क्रमांक / 1615 / क्षे.का / लैब. / प्रनिबो / 2023

रीवा, दिनांक 8/12/23

प्रति,

डॉ. अभय कुमार सक्सेना  
वरिष्ठ वैज्ञानिक अधिकारी  
म.प्र. प्रदूषण नियंत्रण बोर्ड,  
भोपाल (म.प्र.)

विषय :- **Information required for compliance of NGT Case No. 693/2023  
Order Dated 23.11.2023.**

संदर्भ :- आपके द्वारा प्रेषित ई-मेल दिनांक 06.12.2023.

उपरोक्त संदर्भित विषयान्तर्गत लेख है कि माननीय एनजीटी केस नं. 693/2023 दिनांक 23.11.2023 के परिपालन में क्षेत्रीय प्रयोगशाला रीवा की जानकारी निर्धारित प्रपत्र में तैयार कर आपकी ओर आवश्यक कार्यवाही हेतु प्रेषित है।

संलग्न :- उपरोक्तानुसार।

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

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(ii) Details of major projects undertaken pertaining to environmental studies: **NA**

*[Please attach separate sheet, if space is insufficient]*

(iii) Which of the following type of analytical tests are being carried out in the laboratory [please mark Yes (✓)/No (x)]:

- |   |   |
|---|---|
| a) Physical -(✓)                          | k) Hazardous waste Characterization       |
| b) Inorganics general and non metallic(✓) | l) Ambient air-Yes(✓)                     |
| c) Inorganic (Trace metals)-No (x)        | m) Source emission-Yes(✓)                 |
| d) Organics (General)-No (x)              | n) Air Toxics- No (x)                     |
| e) Trace Organics-No (x)                  | o) Hazardous Air Pollutants- No (x)       |
| f) Microbiological-Yes(✓)                 | p) Volatile Organic Carbon- No (x)        |
| g) Toxicity-No (x)                        | m) Noise measurement-Yes(✓)               |
| h) Biological-Yes(✓)                      | n) Meteorological- No (x)                 |
| i) Hazardous waste-No (x)                 | o) Vehicular emission/Auto exhaust-Yes(✓) |
| j) Soil, sludge, sediment-No (x)          |   |

(iv) Laboratory scientists/chemist or officials are fully conversant for sampling, monitoring, preservation and transportation [please tick Yes(✓)/No(x)].

- |  |   |
|--|---|
| (a) Water & waste water Yes(✓)           | (i) Hazardous Air Pollutants analysis-No (x)      |
| (b) Hazardous waste-No (x)               | (j) Volatile Organic Carbon analysis-No (x)       |
| (c) Solid waste-No (x)                   | (k) Noise monitoring-Yes(✓)                       |
| (d) Soil-No (x)                          | (l) Meteorological monitoring-No (x)              |
| (e) Municipal waste-No (x)               | (m) Source emission-Yes(✓)                        |
| (f) Biomedical waste-No (x)              | (n) Auto exhaust monitoring-Yes(✓)                |
| (g) Ambient air/fugitive emission Yes(✓) | (o) On line ambient air quality monitoring-No (x) |
| (h) Air Toxics analysis-No (x)           |   |

(v) Laboratory scientists/chemists or officials are capable of analyzing desired/ relevant parameters in various types of matrix [please tick [Yes(✓)/No (x)]]

- Liquid Samples (water & wastewater)-Yes(✓)
- Solid Samples (soil/mud/solid waste/sludge etc.)-No (x)
- Semi-solid samples (sludge/slurry)-No (x)
- Gaseous samples (Ambient air, source emission, vehicular emission)-Yes(✓)

### 3. LIST OF PARAMETERS BEING ANALYSED FOR WATER & WASTE WATER & SOLID SAMPLES

#### A) Physical Tests : [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Conductivity-Yes(√)	11.	Flocculation test (Jar test)-
2.	Colour-- Yes(√)	12.	Odour-- Yes(√)
3.	pH- Yes(√)	13.	Salinity- Yes(√)
4.	Fixed & volatile solids- Yes(√)	14.	Settleable solids-No (x)]
5.	Total solids- Yes(√)	15.	Sludge volume index (SVI)-No (x)]
6.	Total dissolved solids- Yes(√)		
7.	Total suspended solids- Yes(√)		
8.	Turbidity- Yes(√)		
9.	Temperature- Yes(√)		
10.	Velocity & discharge Measurement of industrial effluent stream- Yes(√)		

#### B) Inorganic [Please mark Yes (√)/No (x)]

##### (i) General & Non-metallic

S. No.	Parameter	S. No.	Parameter
1.	Acidity <b>Yes (√)</b>	14.	Bromide <b>No (x)</b>
2.	Alkalinity <b>Yes (√)</b>	15.	Carbon dioxide <b>No (x)</b>
3.	Ammonical nitrogen <b>Yes (√)</b>	16.	Chlorine demand <b>Yes (√)</b>
4.	Chloride <b>Yes (√)</b>	17.	Iodine <b>No (x)</b>
5.	Chlorine residual <b>Yes (√)</b>	18.	Sulphite <b>No (x)</b>
6.	Dissolved oxygen <b>Yes (√)</b>	19.	Silica <b>No (x)</b>
7.	Fluoride <b>Yes (√)</b>	20.	Cyanide <b>No (x)</b>
8.	Total hardness <b>Yes (√)</b>	21.	Sulphide <b>Yes (√)</b>
9.	Total kjehldal nitrogen (TKN) <b>Yes (√)</b>		
10.	Nitrite nitrogen <b>Yes (√)</b>		
11.	Nitrate nitrogen <b>Yes (√)</b>		
12.	Phosphate <b>Yes (√)</b>		
13.	Sulphate <b>Yes (√)</b>		

##### (ii) Trace Metals [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Boron (B) <b>No (x)</b>	16.	Arsenic (As) <b>No (x)</b>
2.	Cadmium (Cd) <b>No (x)</b>	17.	Aluminium (Al) <b>No (x)</b>
3.	Calcium (Ca) <b>Yes(√)</b>	18.	Beryllium (Be) <b>No (x)</b>
4.	Chromium (Cr) Total <b>No (x)</b>	19.	Barium (Ba) <b>No (x)</b>
5.	Chromium (Cr) Hexavalent <b>No (x)</b>	20.	Lithium (Li) <b>No (x)</b>
6.	Copper (Cu) <b>No (x)</b>	21.	Manganese (Mn) <b>No (x)</b>
7.	Iron (Fe) <b>Yes(√)/</b>	22.	Selenium (Se) <b>No (x)</b>
8.	Lead (Pb) <b>No (x)</b>	23.	Silver (Ag) <b>No (x)</b>

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F) Biological Tests [Please mark Yes(✓)/No (x)]

S.No.	Parameter	S. No.	Parameter
1.	Benthic organism identification and count	5.	Saprobity Index <b>No (x)</b>
2.	Macrophytic identification <b>No (x)</b>	6.	Chlorophyll <b>No (x)</b>
3.	Planktonic identification count <b>No (x)</b>	7.	Primary productivity <b>No (x)</b>
4.	Measurement of various diversity index <b>No (x)</b>	8.	P/R Ratio <b>No (x)</b>

G) Characterization of Hazardous Waste [Please mark Yes(✓)/No (x)]

S. No.	Parameter
1.	Preparation of Leachate (TCLP extract/water extract) <b>No (x)</b>
2.	Corrosivity <b>No (x)</b>
3.	Ignibility (Flash point) <b>No (x)</b>
4.	Reactivity <b>No (x)</b>
5.	Toxicity <b>No (x)</b>
6.	Measurement of heavy metals/pesticides in the waste/leachate <b>No (x)</b>

H) Soil/Sludge/Sediment and Solid Waste [Please mark Yes(✓)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Boron <b>No (x)</b>	16.	Ammonia <b>No (x)</b>
2.	Cation Exchange Capacity (CEC) <b>No (x)</b>	17.	Bicarbonate <b>No (x)</b>
3.	Electrical Conductivity (EC) <b>No (x)</b>	18.	Calcium <b>No (x)</b>
4.	Nitrogen available <b>No (x)</b>	19.	Calcium carbonate <b>No (x)</b>
5.	Organic carbon/matter (chemical method) <b>No (x)</b>	20.	Chloride <b>No (x)</b>
6.	pH <b>No (x)</b>	21.	Colour <b>No (x)</b>
7.	Phosphorous (available) <b>No (x)</b>	22.	Exchangeable sodium percentage (ESP) <b>No (x)</b>
8.	Phosphate (ortho) <b>No (x)</b>	23.	Gypsum requirement <b>No (x)</b>
9.	Phosphate (total) <b>No (x)</b>	24.	H. Acid <b>No (x)</b>
10.	Potassium <b>No (x)</b>	25.	Heavy metal <b>No (x)</b>
11.	SAR in soil extract <b>No (x)</b>	26.	Magnesium <b>No (x)</b>
12.	Sodium <b>No (x)</b>	27.	Mechanical soil analysis <b>No (x)</b>
13.	Soil moisture <b>No (x)</b>	28.	Nitrate <b>No (x)</b>
14.	TKN <b>No (x)</b>	29.	Nitrite <b>No (x)</b>
15.	Calorific value <b>No (x)</b>	30.	PAH <b>No (x)</b>
		31.	Pesticide <b>No (x)</b>
		32.	Potash (available) <b>No (x)</b>
		33.	Sulphate <b>No (x)</b>
		34.	Sulphur <b>No (x)</b>
		35.	TOC <b>No (x)</b>
		36.	Total water soluble salt <b>No (x)</b>
		37.	Water holding capacity <b>No (x)</b>

9.	Magnesium (Mg) <b>Yes(√)</b>	24.	Strontium (Sr) <b>No (x)</b>
10.	Mercury (Hg) <b>No (x)</b>	25.	Tin (Sn) <b>No (x)</b>
11.	Nickel (Ni) <b>No (x)</b>	26.	Antimony (Sb) <b>No (x)</b>
12.	Potassium (K) <b>Yes(√)</b>	27.	Cobalt (Co) <b>No (x)</b>
13.	Sodium (Na) <b>Yes(√)</b>	28.	Vanadium (V) <b>No (x)</b>
14.	Sodium absorption ratio (SAR) <b>Yes(√)</b>		
15.	Zinc (Zn) <b>No (x)</b>		

(C) **Organics (General) and Trace Organics** [Please mark Yes(√)/No (x) and give details at Appendix J for Trace organics]

S. No.	Parameter	S. No.	Parameter
1.	Bio-chemical oxygen demand (BOD) <b>Yes(√)</b>	6.	Total organic carbon (TOC) <b>No (x)</b>
2.	Chemical oxygen demand (COD) <b>Yes(√)</b>	7.	Adsorbable organic halide (AOX) <b>No (x)</b>
3.	Oil & Grease <b>Yes(√)</b>	8.	Surfactants <b>No (x)</b>
4.	Phenol <b>No (x)</b>	9.	Tannin & lignin <b>No (x)</b>
5.	Pesticide (each) <b>No (x)</b>	10.	Poly-chlorinated biphenyl (PCB's) each <b>No (x)</b>
	(i) Organo-chlorine (BHC, DDT, Aldrin, Endosulphan) <b>No (x)</b>	11.	Polynuclear aromatic hydrocarbon (PAH) each <b>No (x)</b>
	(ii) Organo nitrogen-phosphorous (Malathion, methyl parathion, Chloropyriphos) <b>No (x)</b>	12.	Organic Carbon (in solid) <b>No (x)</b>
		13.	Carbon/Nitrogen ratio <b>No (x)</b>

D) **Microbiological Tests** [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Total Coliform <b>Yes(√)</b>	5.	Total plate count <b>No (x)</b>
2.	Faecal Coliform <b>Yes(√)</b>	6.	Enterococcus <b>No (x)</b>
3.	Faecal Streptococci <b>Yes(√)</b>	37.	Coliphage <b>No (x)</b>
4.	E. Coli <b>No (x)</b>		

E)

**Toxicological Tests** [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent)	1.	Bio-accumulation, bio magnification and bio-transformation studies <b>No (x)</b>
		2.	Estimation of the effect at tissue level <b>No (x)</b>
		3.	Measurement of toxicity using Daphnia or other organism <b>No (x)</b>
		4.	Measurement of toxicity factor using zebra fish (dimensionless toxicity test <b>No (x)</b> )

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## 4. LIST OF INSTRUMENTS FOR WATER, WASTEWATER &amp; SOLID SAMPLES

## a) LIST OF EQUIPMENT GENERAL ANALYSIS

[Note: Please mark Yes (√)/No(x)]

S. No.	EQUIPMENT	Yes/No	Nos. available**
<b>BASIC EQUIPMENTS</b>			
1.	Ice Box/s* (2)	Yes (√)	03 Nos.
2.	Filtration assembly* (1)	Yes (√)	01No.
3.	Heating Mantle	Yes (√)	01 No.
4.	Stop watch	Yes (√)	01 No.
5.	Hot air oven* (2)	Yes (√)	01No.
6.	Hot plate* (2)	Yes (√)	01No.
7.	Muffle furnace* (1)	Yes (√)	01No.
8.	Standard weight	Yes (√)	01set
9.	Water bath	Yes (√)	01No.
10.	Thermometer/s* (4)	Yes (√)	04Nos.
11.	Refrigerator/s big size* 300 litres or above (2)	Yes (√)	01 No.
<b>SPECIFIC EQUIPMENTS</b>			
1.	Autoclave* (1)	Yes (√)	02 Nos.
2.	Bottom sampler	No(x)	-
3.	BOD Incubator* (1)	Yes (√)	02 Nos.
4.	Centrifuge* (1)	No(x)	-
5.	Aquarium for bioassay test* (4)	No(x)	-
6.	COD Digester with aluminium heating blocks * (1)	Yes (√)	02Nos.
7.	Colony Counter	No(x)	-
8.	Depth Sampler	Yes (√)	01 No.
9.	Digester with condensers	No(x)	
10.	Digestion chamber* (1)	No(x)	
11.	Dissolved oxygen sampler	No(x)	
12.	Flocculator ( Jar testing apparatus)	No(x)	
13.	Flow meter	Yes (√)	01 No.
14.	Incubator for bacteriological test* (2)	Yes (√)	02 Nos.
15.	Laminar flow* (1)	Yes (√)	01No.
16.	Magnetic Stirrer with hot plate* (2)	No(x)	-
17.	Mechanical Shaker *(1)	Yes (√)	01 No.
18.	Microwave digester	No(x)	
19.	TKN Analyzer semi automatic with aluminum block digester	Yes (√)	01 No.

S. No.	EQUIPMENT	Yes/No	Nos. available**
20.	Ultrasonic water bath	No(x)	
21.	Vacuum pump* (1)	Yes (√)	01 No.
22.	Water purification / distillation assembly* (1)	No(x)	
23.	Ekman Dredge	No(x)	
24.	Water sampler	No(x)	
25.	Oil & Grease sampler	No(x)	
26.	Water Testing kit	No(x)	
27.	Chloroscope for residual chlorine	No(x)	
28.	Any other equipment (please attach details on separate sheet)	No(x)	

## (b) LIST OF INSTRUMENTS WATER/WASTE WATER ANALYSIS

S. No.	Name of instrument	Yes/No	Total Nos. **																												
<b>BASIC INSTRUMENTS</b>																															
1.	Analytical Balance +* (1) 1 mg	Yes (√)	02Nos																												
2.	Conductivity Meter* (1)	Yes (√)	01No.																												
3.	Dissolved oxygen meter	No(x)	-																												
4.	pH Meter with combined glass electrode* (1)	Yes (√)	01 No.																												
5.	Turbidity meter* (1)	Yes (√)	01No.																												
<b>SPECIFIC INSTRUMENTS</b>																															
1.	Alpha/Beta Radioactivity Counter	No(x)																													
2.	Atomic Absorption Spectrophotometer (Flame) with the following cathode lamps + (√ available HCL)* (1)	No(x)																													
	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">(i) Aluminium</td> <td style="width: 50%;">(ii) Antimony</td> </tr> <tr> <td>(iii) Arsenic</td> <td>(iv) Barium</td> </tr> <tr> <td>(v) Barium</td> <td>(vi) Boron</td> </tr> <tr> <td>(vii) Cadmium</td> <td>(viii) Calcium</td> </tr> <tr> <td>(ix) Chromium</td> <td>(x) Copper</td> </tr> <tr> <td>(xi) Iron</td> <td>(xii) Lithium</td> </tr> <tr> <td>(xiii) Lead</td> <td>(xiv) Magnesium</td> </tr> <tr> <td>(xv) Manganese</td> <td>(xvi) Mercury</td> </tr> <tr> <td>* (xvii) Nickel</td> <td>(xviii) Potassium</td> </tr> <tr> <td>(xix) Selenium</td> <td>(xx) Silver</td> </tr> <tr> <td>(xxi) Sodium</td> <td>(xxii) Strontium</td> </tr> <tr> <td>(xxiii) Tin</td> <td>(xxiv) Cobalt</td> </tr> <tr> <td>(xxv) Vanadium</td> <td>(xxvi) Zinc</td> </tr> <tr> <td></td> <td>(xxvii) Other, pl. specify</td> </tr> </table>	(i) Aluminium	(ii) Antimony	(iii) Arsenic	(iv) Barium	(v) Barium	(vi) Boron	(vii) Cadmium	(viii) Calcium	(ix) Chromium	(x) Copper	(xi) Iron	(xii) Lithium	(xiii) Lead	(xiv) Magnesium	(xv) Manganese	(xvi) Mercury	* (xvii) Nickel	(xviii) Potassium	(xix) Selenium	(xx) Silver	(xxi) Sodium	(xxii) Strontium	(xxiii) Tin	(xxiv) Cobalt	(xxv) Vanadium	(xxvi) Zinc		(xxvii) Other, pl. specify		
(i) Aluminium	(ii) Antimony																														
(iii) Arsenic	(iv) Barium																														
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(xix) Selenium	(xx) Silver																														
(xxi) Sodium	(xxii) Strontium																														
(xxiii) Tin	(xxiv) Cobalt																														
(xxv) Vanadium	(xxvi) Zinc																														
	(xxvii) Other, pl. specify																														
3.	Atomic Absorption Spectrophotometer with Graphite Furnace and Hydride Generation System	No(x)																													
4.	Organic Halogen Analyzer (AOX/TOX)	No(x)																													
5.	Binocular Microscope	No(x)																													
6.	Flame Photometer* (1)	Yes (√)	01 No.																												
7.	Gas Chromatograph with following detector*++ (1)	No(x)																													

	- ECD-NPD - FID-TID - FPD - Other detector		
8.	Gas Chromatograph with Mass Spectrometer (GC-MS)	No(x)	
9.	High Pressure Liquid Chromatograph (HPLC)	No(x)	
10.	Ion Chromatograph	No(x)	
11.	Inductively Coupled Plasma (ICP) Spectrometer	No(x)	
12.	Mercury Analyzer Digital* (1)	No(x)	
13.	Portable Analyzer Kit (DO, pH, Temp. Cond.)	Yes (√)	01 No.
14.	Precision Balance weighing up to 1 mg* (water / air)	Yes (√)	01 No.
15.	Rotary Evaporator* (1)	No(x)	
16.	Spectrophotometer (Visible)* or Ultraviolet & visible* (1)	Yes (√)	02Nos.
17.	Stereo Microscope	No(x)	
18.	Total Organic Carbon Analyzer	No(x)	
19.	Any other instruments (Please enclose details on separate sheet)	-	

## (c) LIST OF INSTRUMENTS FOR HAZARDOUS WASTE ANALYSIS

S. No.	Instruments	Nos. Available
1.	Bomb colorimeter	No(x)
2.	Elemental analyzer	No(x)
3.	Flash point apparatus	No(x)
4.	Moisture content meter	No(x)
5.	Rotary evaporator	No(x)
6.	Toxicity characteristic leaching procedure (TCLP) extractor	No(x)
7.	Toxic Gas analyzer	No(x)
8.	X-ray fluorescence (XRF) Spectrometer	No(x)
9.	Zero head space extractor (ZHE)	No(x)
10.	Any other equipment (please attach details on separate sheet)	No(x)

## (d) LIST OF MAINTENANCE CONTRACT STATUS OF IMPORTANT SOPHISTICATED INSTRUMENTS [Note: Please mark Yes (√)/No (x)]

S. No.	Name of the instrument	Repair job undertaken on Annual Maintenance contract / emergency call basis	Whether sufficient spares available
1.	AAS (Flame & Flameless)	No(x)	
2.	AOX	No(x)	
3.	Total Organic Carbon Analyzer	No(x)	
4.	Gas Chromatograph	No(x)	
5.	Water purification system	No(x)	
6.	Analytical balance	No(x)	
7.	Specific ion meter	No(x)	
8.	Mercury analyzer	No(x)	

9.	UV-Visible spectrophotometer	No(x)	
10.	Alpha/Beta Radioactivity Counter	No(x)	
11.	Any other equipment (please attach details on separate sheet)	No(x)	

## ( e ) REFERENCE MATERIAL (RMS) AND CERTIFIED REFERENCE MATERIAL (CRMS)

S. No.	Parameters	Availability of RMS/CRMS	
		(√/X)	Nos. of standards
1.	Trace Metals	No(x)	
2.	Organo-chlorine pesticides	No(x)	
3.	Organo-nitrogen phosphorous pesticides	No(x)	
4.	Polychlorinated Biphenyls (PCB's)	No(x)	
5.	Polycyclic aromatic hydrocarbon (PAH)	No(x)	
6.	Benzene, Ethylene, Toluene & Xylene	No(x)	
7.	Dioxins and Furans	No(x)	
8.	Any other (please attach details on separate sheet)	No(x)	

## f) LIST OF GLASS APPARATUS AND DISTILLATION ASSEMBLIES

[Note: Please mark Yes (√)/No (x)]

S. No.	Particulars	Yes or No	Total nos. available
1.	Fluoride distillation assembly	No(x)	
2.	Cyanide distillation assembly	No(x)	
3.	Ammonia distillation assembly	No(x)	
4.	Water distillation assembly	Yes (√)	01No.
5.	Soxlet extraction assembly	No(x)	
6.	Arsenic estimation assembly	No(x)	
7.	Phenol distillation assembly	No(x)	
8.	Any other (please enclose details on separate sheet)	No(x)	

## (5) AIR QUALITY PARAMETERS

Facilities available [Please mark Yes (√)/No (x)]

## A. Ambient Air / Fugitive Emissions

S. No.	Group of parameter	Yes/No (√/x)	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Nitrogen dioxide as NO <sub>2</sub>	Yes (√)	Jacob & Hochheiser Modified (NaOH-NaSO <sub>2</sub> ) Method
2.	Sulphur dioxide (SO <sub>2</sub> )	Yes (√)	Improved West & Gaeke Method UV Fluorescence
3.	Total suspended particulate matter	Yes (√)	Gravimetric Method
4.	Respirable suspended particulate matter (PM <sub>10</sub> )	Yes (√)	Gravimetric Method
(ii)	<i>Secondary Parameters</i>		
1.	Ammonia	Yes (√)	Indophenol Method
2.	Carbon monoxide	No(x)	Direct method
3.	Chlorine	No(x)	
4.	Fluoride	No(x)	
5.	Non methane hydrocarbon	No(x)	
6.	Lead	No(x)	
7.	Methane	No(x)	
8.	Ozone	Yes (√)	UV Photometric
9.	Benzene Toluene Xylene (BTX)	No(x)	
10.	Polycyclic aromatic hydrocarbon (PAH) Benzo-a-pyrene & others	No(x)	
11.	PM <sub>2.5</sub>	Yes (√)	Gravimetric Method
12.	Volatile Organics Carbon	No(x)	
13.	Any other (please attach details on separate sheet)	No(x)	

## B. Stack gases/source emission

S. No.	Group of parameter	Yes/No (√/x)	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Particulate matter	Yes (√)	Gravimetric Method
2.	Sulphur dioxide	Yes (√)	Titration method
3.	Velocity & flow	Yes (√)	Through Stack Monitoring kit



4.	Carbon dioxide	No(x)	
5.	Carbon monoxide	No(x)	
6.	Temperature	Yes (√)	Through Stack Monitoring kit
7.	Oxygen	No(x)	
8.	Oxides of Nitrogen	No(x)	
(ii)	<b>Secondary Parameters</b>		
1.	Acid mist	No(x)	
2.	Ammonia	No(x)	
3.	Chlorine	No(x)	
4.	Fluoride (Particulate)	No(x)	
5.	Fluoride (Gaseous)	No(x)	
6.	Hydro-chloric acid	No(x)	
7.	Total Hydro carbon	No(x)	
8.	Hydrogen Sulphide	No(x)	
9.	Carbon disulphide	No(x)	
10.	Mercaptan	No(x)	
11.	Any other (please attach details on separate sheet)	No(x)	

### C. Noise level

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Noise level measurement (20 to 140 dBa)	Yes (√)	Direct method
2.	Ambient Noise & Source specific noise	No(x)	
3.	Any other (please attach details on separate sheet)	No(x)	

### D. Meteorological Monitoring

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Ambient Temperature	Yes (√)	Thermometer
2.	Wind direction	Yes (√)	Manual/Online

⑫  
③

3.	Wind speed	Yes (√)	-do-
4.	Relative Humidity	Yes (√)	Hygrometer
(ii)	<b>Secondary Parameters (Minimum required at least one parameter)</b>		
1.	Solar radiation	No(x)	
2.	Rain fall	No(x)	

Any other (please attach details on separate sheet)

#### E. Vehicular Emission Monitoring

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Carbon monoxide	Yes (√)	CO Analyser
2.	Smoke Density	Yes (√)	Smoke Meter
3.	Hydrocarbon	Yes (√)	Exhaust CO/HC analyzer
(ii)	<b>Secondary Parameters (Optional)</b>		
1.	Oxides of Nitrogen	No(x)	

Any other (please attach details on separate sheet)

#### 6. LIST OF INSTRUMENTS REQUIRED FOR AIR MONITORING

S.No.	Instrument	Yes/No	If yes, give Total Nos. **
1.	BTX analyzer (PID/FID detector)	No(x)	
2.	BTX calibrator	No(x)	
3.	Charcoal Tubes	No(x)	
4.	CO Analyzer (Non-dispersive Infrared principle)	No(x)	
5.	Detector Tubes with Pump of different pollutants (Please specify details)	No(x)	
6.	Dust analyzer (Beta Attenuation/TOEN)	No(x)	
7.	Exhaust CO/HC analyzer	No(x)	
8.	Flue gas analyzer	Yes (√)	01 no
9.	Gas Chromatograph with Air sampling port, FID & PFPD detectors	No(x)	
10.	Handy sampler for gaseous monitoring* (2)	No(x)	
11.	High Volume sampler with flow controller (4)	No(x)	
12.	Low flow pump	No(x)	
13.	Meteorological sensors with mast (WS, WD, Temp., Humidity)* (1)	No(x)	

14.	Micro balance (Readability 1 µg)	No(x)	
15.	Multi calibration system	No(x)	
16.	Multi channel recorder	No(x)	
17.	Multi calibration kit (portable)	No(x)	
18.	Noise level meter* (2)	Yes (√)	01 No.
19.	NO-NO <sub>2</sub> -Nox Analyzer (Chemiluminescence based)	No(x)	
20.	Ozone analyzer (Ultraviolet)	No(x)	
21.	Permeation tubes for calibration	No(x)	
22.	RSPM sampler with flow controller/brush less motor + calibration kit* (4)	No(x)	
23.	Smoke density meter	No(x)	
24.	SO <sub>2</sub> Analyzer (Pulsed Fluorescence based)	No(x)	
25.	Soap bubble meter	No(x)	
26.	Stack monitoring kit with High Temp. Probes* (2)	No(x)	
27.	Toddler Bags	No(x)	
28.	Wet gas meter	No(x)	
29.	Any other (please specify)	No(x)	

**(7) LIST OF INFRASTRUCTURAL EQUIPMENT/ITEMS FOR AIR ANALYSIS**

[Please mark Yes (√)/No (x)]

S.No.	Items	Yes/No	If yes, give Total Nos.**
1.	Air conditioner (split type)	No(x)	
2.	Air Conditioner (Window type)	Yes(√)	01
3.	Breathing apparatus	No(x)	
4.	Cold room for sample storage	No(x)	
5.	Computer with printer	Yes(√)	02
6.	Constant voltage transformer	No(x)	
7.	Face shield and helmet	No(x)	
8.	Gas mask	No(x)	
9.	Refrigerator (frost free, CFC free)	Yes(√)	01
10.	Tool Kit (Electrical & Mechanical)	Yes(√)	02
11.	Uninterrupted power supply (UPS) system	No(x)	
12.	First aid box	Yes(√)	01

(112)

(14)

13.	Trolley for sample transportation	No(x)	
14.	Fume Hood	No(x)	
15.	Exhaust System	Yes(√)	
16.	Fire Extinguisher	Yes(√)	02 Nos.
17.	Electricity Generator	Yes(√)	04
18.	Gas Cylinder Trolleys	No(x)	
19.	Any other (please specify)		

**(8) Budgetary information**

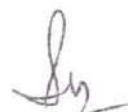
SNo	Budget	[year 2022-23]	[year 2023-24]
1.	Sanctioned	HO Level	HO Level
2.	Expenditure	HO Level	HO Level

**(9) Manpower Information**

SNo	Designation	Number of Posts in working	Remarks
1.	Chief Scientific Officer	-	-
2.	Senior Scientific Officer	-	-
3.	Chief Chemist	-	-
4.	Scientist	-	-
5.	Jr Scientist	03 Nos.	-
6.	Chemist	02 Nos.	-
7.	Sampler	01 No.	-
8.	Laboratory assistant	-	-
9.	Laboratory attendant	04 Nos.	-
10.	Research Fellows	-	
11.	Field assistant	-	
12.	NAMP Staff	-	
13.	NCAP Staff	-	
14.	Contractual Staff	-	
15.	Others	-	

Note: (if any other information )

Name of Place Rewa

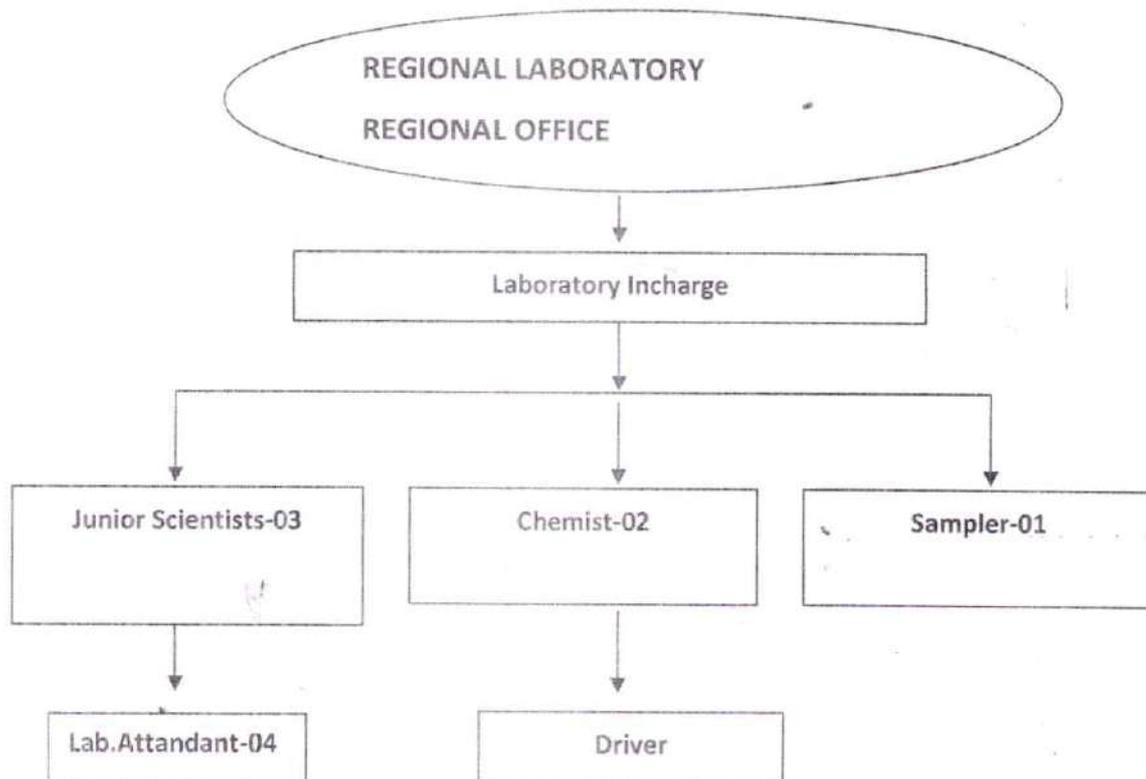
 8.12.23  
 Name, Designation & Signature of Laboratory In charge

## LABORATORY AT A GLANCE

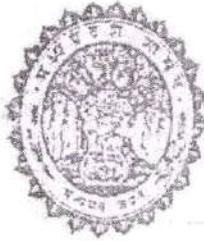
### SALIENT FEATURES

- FULL FLEDGED FACILITY FOR :-
  - WATER & WASTE WATER ANALYSIS
  - AIR MONITORING
  - NOISE MONITORING
  - VEHICULAR EMISSION MONITORING

### Organization Chart



इस अध्याय को पृष्ठ-अध्यायों के क्रम  
द्वारा प्रकाशित करने के लिए अनुमति  
अनुमति-पत्र, ग्वालियर सम्प्रदाय,  
एम.पी.-19, ग्वालियर-2008-10



पंजी. क्र. ग्वालियर विज्ञान  
एम.पी.-19-ग्वालियर-2008-10

# मध्यप्रदेश राजपत्र

प्राधिकार से प्रकाशित

क्रमांक 6 ]

भोपाल, मंगलवार, दिनांक 8 फरवरी 2008-माघ 19, शके 1929

भाग 3 (1)

विज्ञापन

अन्य सूचनाएं

मध्यप्रदेश प्रदूषण नियंत्रण बोर्ड, भोपाल

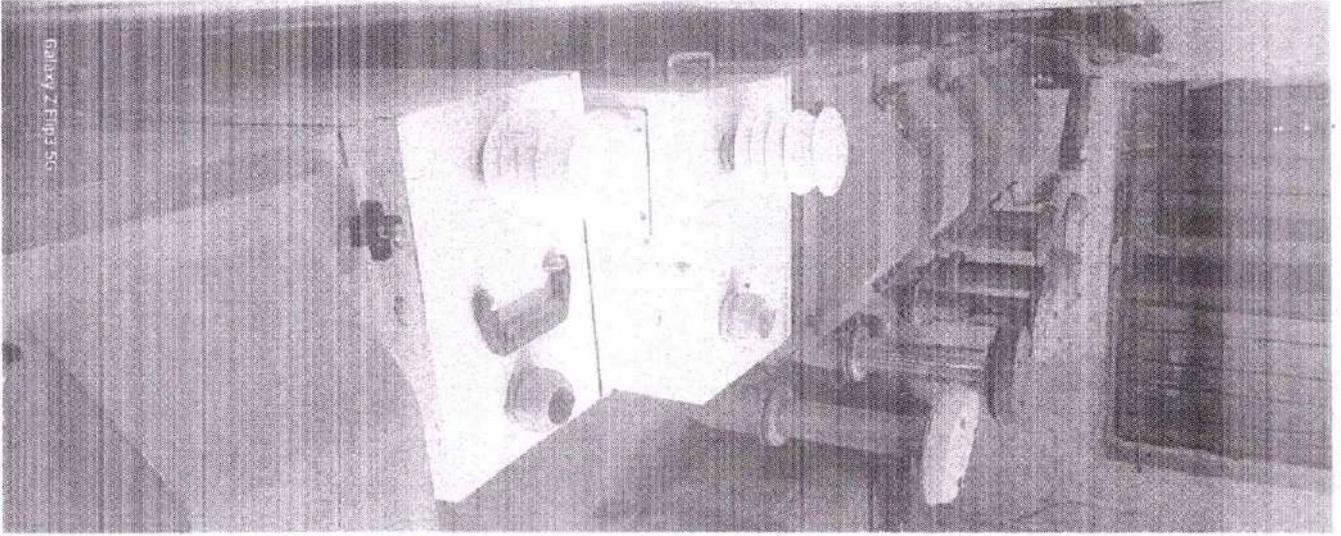
जल (प्रदूषण) नियंत्रण एवं निबंधन अधिनियम, 1974 की धारा 16 की उप-धारा 3 और धारा-4 की उपधारा-4 के साथ संलग्न धारा 17 (2) के अन्तर्गत प्रदूषण नियंत्रण बोर्ड का प्रदर्शन करने हेतु मध्यप्रदेश प्रदूषण नियंत्रण बोर्ड ने निम्नलिखित अनुसूची-1 में दिये गये स्थानों पर बोर्ड की प्रयोगशालाएं स्थापित की हैं :-

अनुसूची-1

मध्यप्रदेश प्रदूषण नियंत्रण बोर्ड की प्रयोगशालाओं की अनुसूची

क्र.	स्थान	पता
1.	केंद्रीय प्रयोगशाला, भोपाल	प्रयोगशाला परिसर, ई-5 सेक्टर, अरुण कॉलोनियों, भोपाल
2.	क्षेत्रीय कार्यालय, इन्दौर	स्कॉलम नं. 78, सी-2, प्लॉट नं. 1, आर.ए. इन्दौर
3.	क्षेत्रीय कार्यालय, उज्जैन	11, भागपुरी, उज्जैन
4.	क्षेत्रीय कार्यालय, ग्वालियर	सोनेदयाल नगर, मुख्य द्वार, ग्वालियर
5.	क्षेत्रीय कार्यालय, गुना	टेकरा पार्किंग, एरिया गेट कॉम्प्लेक्स, विजयपुर-गुना
6.	क्षेत्रीय कार्यालय, जबलपुर	स्कॉलम नं. 5, प्लॉट नं. 455-456, विजय नगर, जबलपुर
7.	क्षेत्रीय कार्यालय, मुरादाबाद	ए. सोनेदयाल नगर, साइलिंग रोड कॉलोनियों, मुरादाबाद
8.	क्षेत्रीय कार्यालय, मसना	म. नं. 318, प्लॉट नं. 5, धावरी, मसना
9.	क्षेत्रीय कार्यालय, रायचूर	एच. आर्. को. 190-191, मेहरु नगर, रायचूर

2. विभिन्न विप्लवकारीय प्रयोगशालाओं की प्रत्येक विस्तारण रिपोर्ट के सम्बन्ध में मध्यप्रदेश प्रदूषण नियंत्रण बोर्ड को देय शुल्क और बिल, अपशिष्ट जल, धुआँ, ऑटोडिफ्यूजेंट अपशिष्ट, कच्चे प्ल्यूमेटिक उत्सर्जनों, उत्सर्जन रोकथाम, शोर प्रदूषण, ऑटो एक्सहॉस्ट प्रदूषण और परिवर्तनीय वायु गुणवत्ता प्रदूषण के लिये नमूने लेने के प्रथम अनुसूची-2 : नमूने लेने व विश्लेषण प्रयोगशालाओं की अनुसूची के अनुसार होंगे।

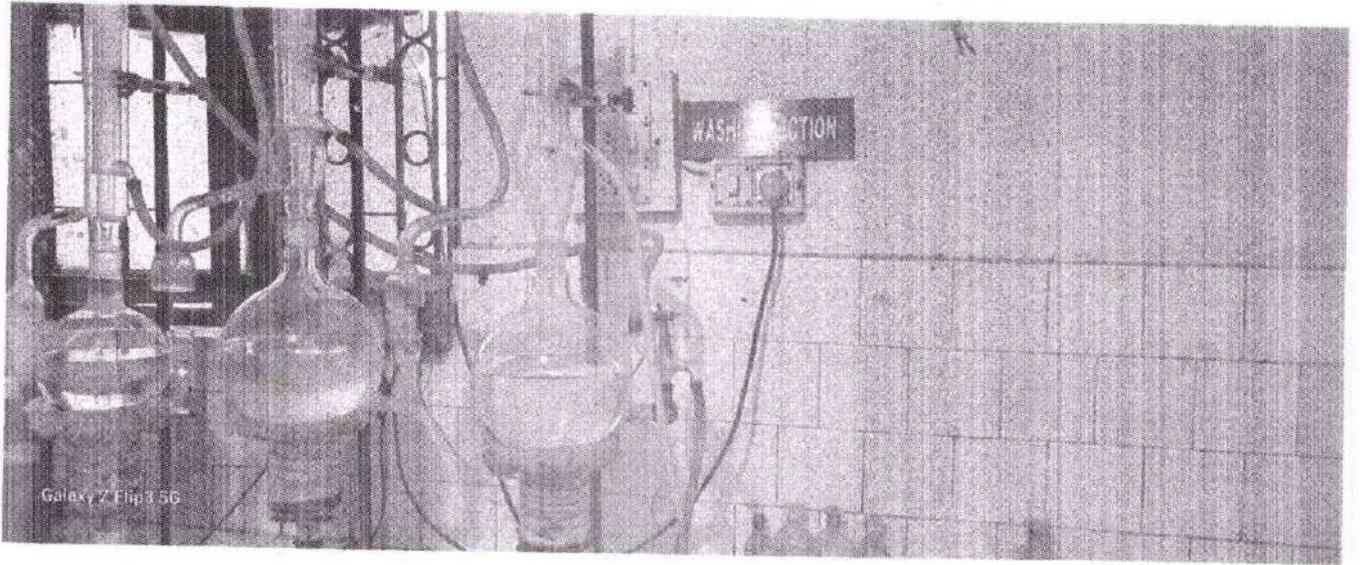


AIR MONITORING LAB - RO REWA

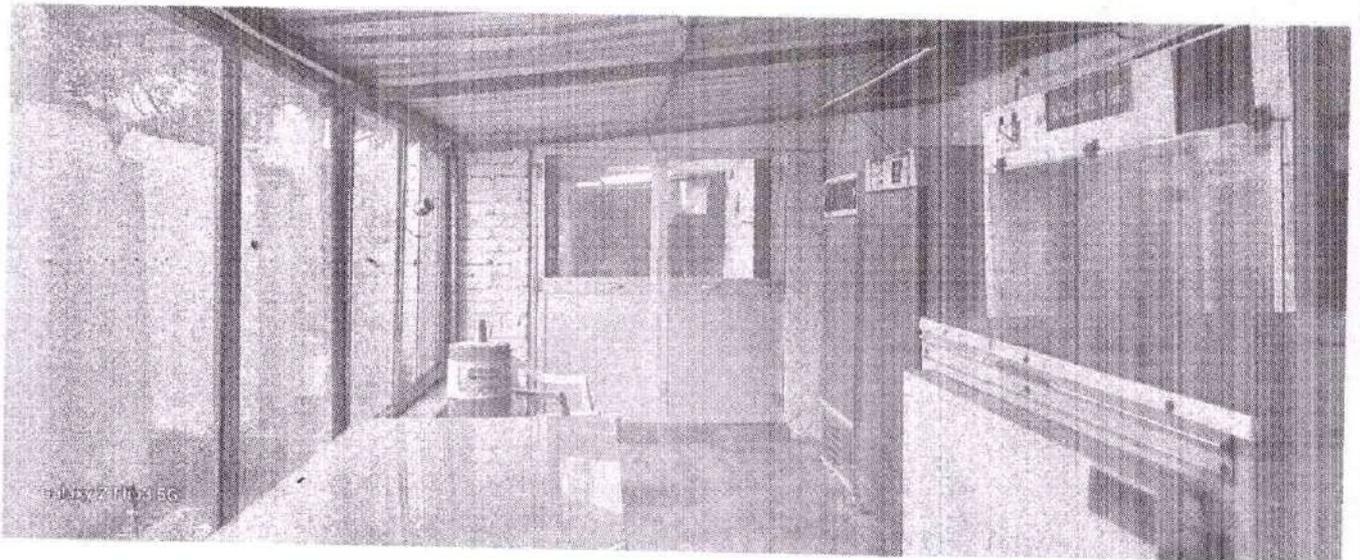


WATER TESTING LAB - RO REWA

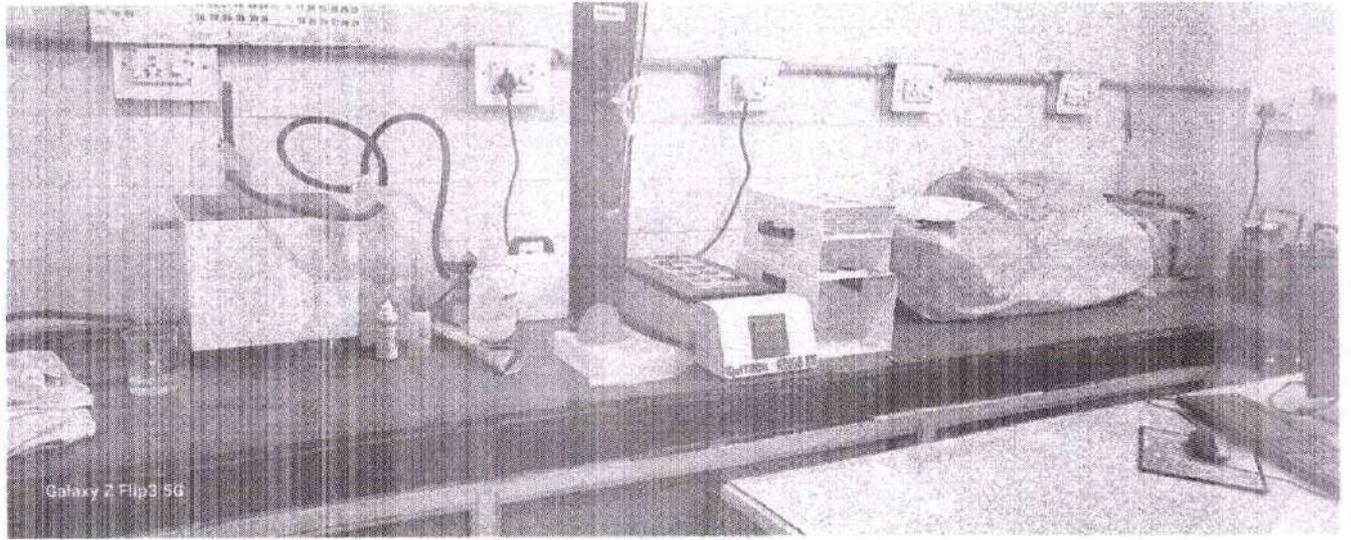
114



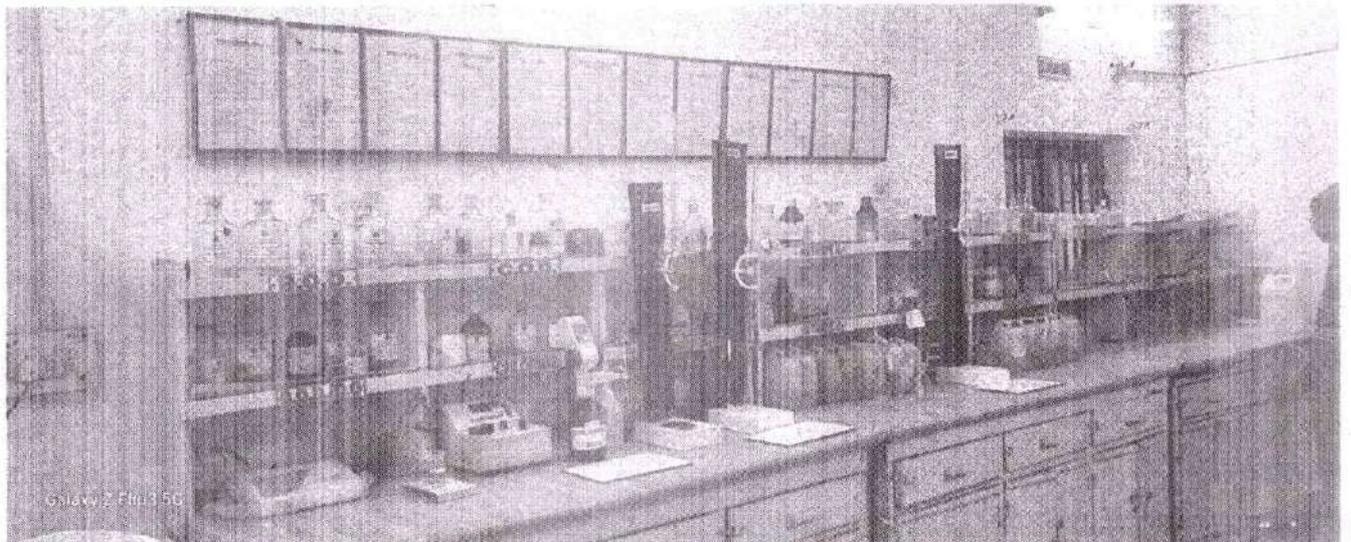
WATER TESTING LAB - RO REWA



BIOLOGICAL & MICRO BIOLOGICAL LA  
- RO REWA.

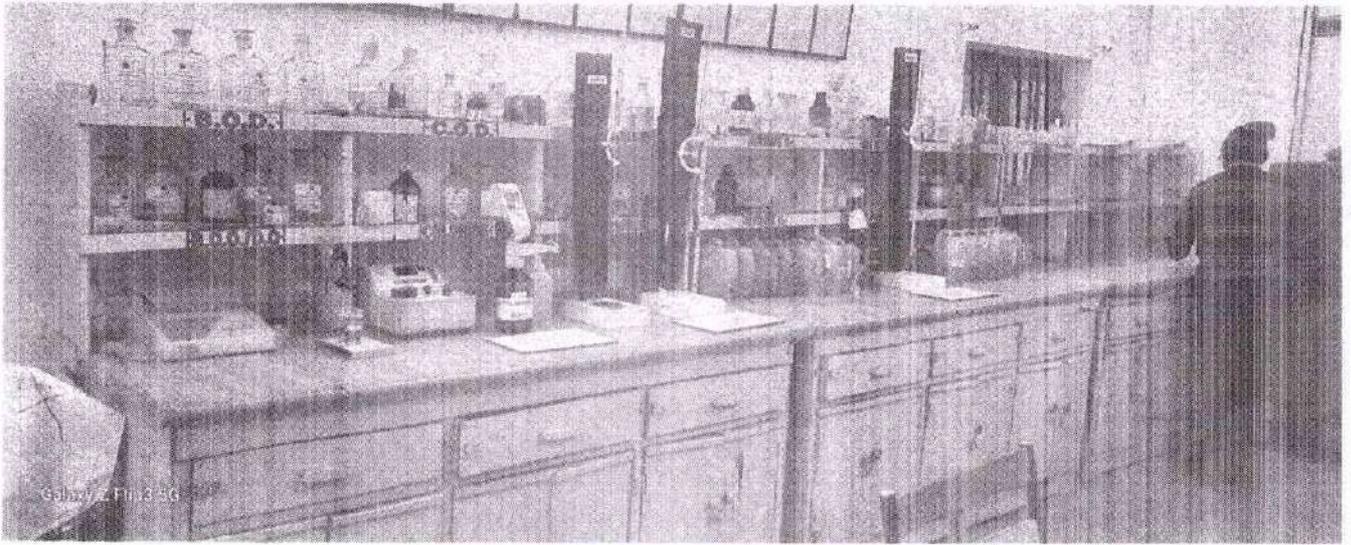


WATER TESTING LAB - RO REWA



WATER TESTING LAB - RO RBWA

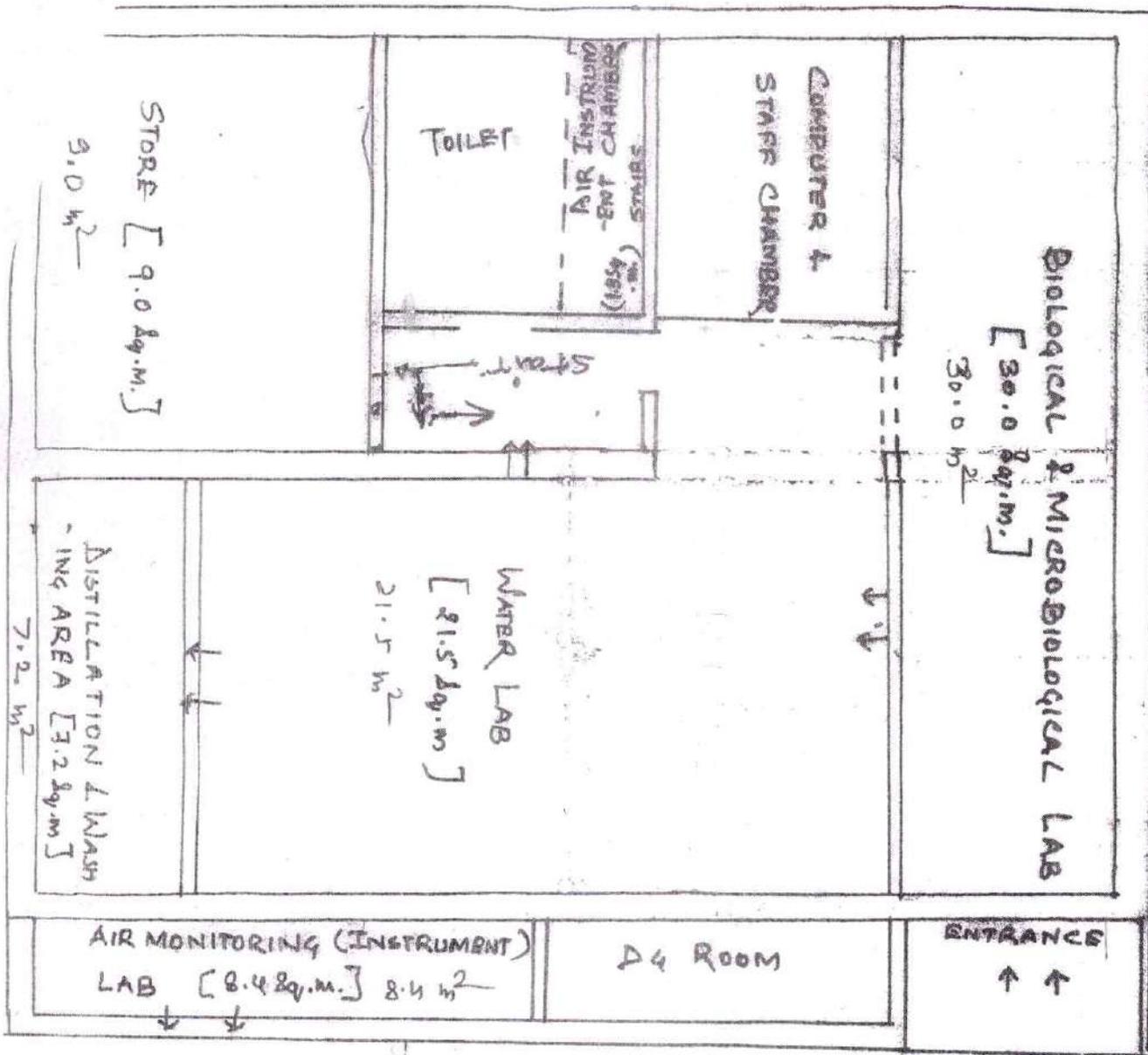
113



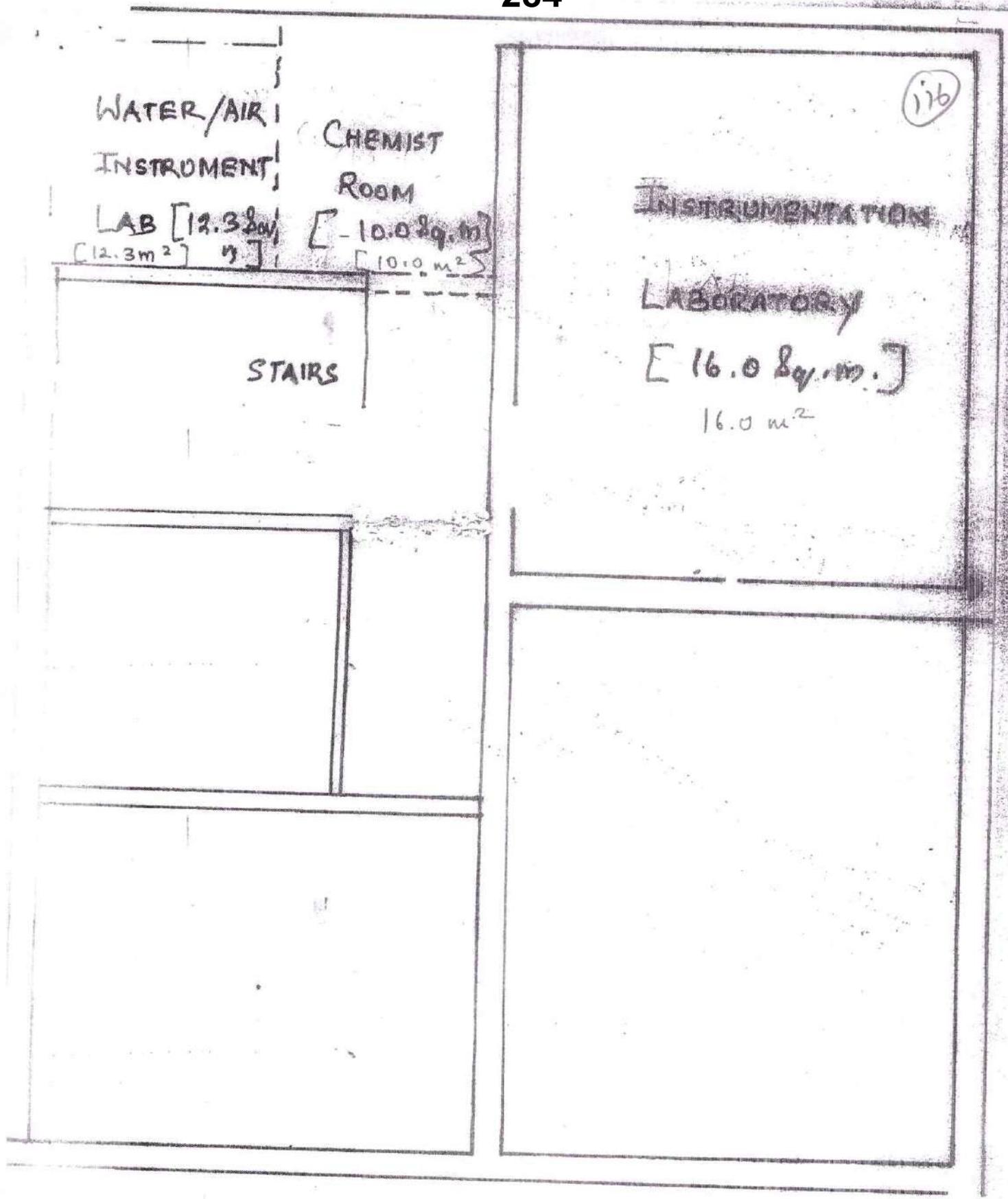
Water Laboratory - RO REWA



AIR MONITORING LAB - RO REWA



GROUND FLOOR OF HIQ 190  
[LAY OUT PLAN OF REWA LAB]



1<sup>st</sup> FLOOR OF HIG 191

[Lay out PLAN OF REWA LAB.]

**PROFORMA**

INFORMATION REQUIRED FOR COMPLIANCE OF NGT CASE NO. 693/2023 ORDER DTAED  
23.11.2023

**I. General**

- (i) Name of Regional Office : Regional Office, MP Pollution Control Board, Singrauli (M.P.)
- (ii) Name of the Regional Laboratory : Regional Laboratory MP Pollution Control Board, Singrauli (M.P.)
- (iii) Address : ROMPPCB Bhakuar, Naugarh, Singrauli (M.P.)
- a) Postal : ROMPPCB Bhakuar, Naugarh, Singrauli (M.P.) 486886
- b) Telephone : NA
- c) Fax : NA
- d) E-mail : rlmppcb.sgrl@gmail.com
- (iv) Year of establishment of laboratory : 2011
- (v) Laboratory Incharge details
- a) Name and Designation : Dr. Rahul Dwived (Laboratory Incharge/ Scientist)
- b) Address : Regional Laboratory MP Pollution Control Board, Singrauli (M.P.)
- c) Telephone: NA Fax: NA E-mail:- rlmppcb.sgrl@gmail.com
- (vi) Name of accreditation body(s)/organization i.e. ISO, NABL, GLP, SPCB's, PCC's etc. from which the laboratory has been already recognized/accredited, give details.

S. No.	Name of the certification/recognition body/organization	Accreditation / recognition granted for the activities	Environmental Parameter covered	Validity up to
1.	NA	NA	NA	NA

2. Infrastructural details of Laboratory: (please enclose brief lay out plan map of laboratory) with organizational chart and laboratory position in there to:

- (i) Total floor space of the environmental laboratory (in sq. mtr): 21\*21 Sq. mtr
- a) Water Laboratory =7\*7 Sq. mtr
- b) Biological & Microbiological Laboratory = 7\*7 Sq. mtr
- c) Air Laboratory = 7\*7 Sq. mtr
- d) Provide scanned photograph of above with layout plan. Attached
- (ii) Details of major projects undertaken pertaining to environmental studies: NA  
*[Please attach separate sheet, if space is insufficient]*
- (iii) Which of the following type of analytical tests are being carried out in the laboratory  
 [please mark Yes (√)/No (x)]:
- |  |   |
|--|---|
| a) Physical (x)                            | k) Hazardous waste Characterization (x) |
| b) Inorganics general and non metallic (x) | l) Ambient air (√)                      |
| c) Inorganic (Trace metals) (x)            | m) Source emission (√)                  |
| d) Organics (General) (x)                  | n) Air Toxics (x)                       |
| e) Trace Organics (x)                      | o) Hazardous Air Pollutants (x)         |
| f) Microbiological (x)                     | p) Volatile Organic Carbon (x)          |
| g) Toxicity (x)                            | m) Noise measurement (√)                |
| h) Biological (x)                          | n) Meteorological (x)                   |
| i) Hazardous waste (x)                     | o) Vehicular emission/Auto exhaust (√)  |
| j) Soil, sludge, sediment (x)              |   |
- (iv) Laboratory scientists/chemist or officials are fully conversant for sampling, monitoring, preservation and transportation [please tick Yes(√)/No(x)].
- |                            |   |
|----------------------------|---|
| (a) Water & wastewater (√) | (i) Hazardous Air Pollutants analysis (x) |
| (b) Hazardous waste (√)    | (j) Volatile Organic Carbon analysis (x)  |
| (c) Solid waste (√)        | (k) Noise monitoring (√)                  |
| (d) Soil (√)               | (l) Meteorological monitoring(√)          |
| (e) Municipal waste (√)    | (m) Source emission (√)                   |
| (f) Biomedical waste (√)   | (n) Auto exhaust monitoring (x)           |

- (g) Ambient air/fugitive emission (✓)      (o) On line ambient air quality monitoring (✓)
- (h) Air Toxics analysis ×
- (v) Laboratory scientists/chemists or officials are capable of analyzing desired/ relevant parameters in various types of matrix [please tick [Yes(✓)/No (x)]
- a. Liquid Samples (water & wastewater) (✓)
- b. Solid Samples (soil/mud/solid waste/sludge etc.) (x)
- c. Semi-solid samples (sludge/slurry) (x)
- d. Gaseous samples (Ambient air, source emission, vehicular emission) (✓)

### 3. LIST OF PARAMETERS BEING ANALYSED FOR WATER & WASTE WATER & SOLID SAMPLES

A) Physical Tests : [Please mark Yes(✓)/No (x)]

**NOTE :-** Water samples are being collected by the Regional laboratory singrauli and send to the regional laboratory satna for analysis (as per HO Bhopal instruction). Presently the work of water sample collection is being done in the Regional laboratory Singrauli.

S. No.	Parameter	S. No.	Parameter
1.	Conductivity (x)	11.	Flocculation test (Jar test)
2.	Colour (x)	12.	Odour (x)
3.	pH (x)	13.	Salinity (x)
4.	Fixed & volatile solids (x)	14.	Settleable solids (x)
5.	Total solids (x)	15.	Sludge volume index (SVI) (x)
6.	Total dissolved solids (x)		
7.	Total suspended solids (x)		
8.	Turbidity (x)		
9.	Temperature (x)		
10.	Velocity & discharge Measurement of industrial effluent stream (x)		

## B) Inorganic [Please mark Yes (✓)/No (x)]

(i) General & Non-metal

S. No.	Parameter	S. No.	Parameter
1.	Acidity (x)	14.	Bromide (x)
2.	Alkalinity (x)	15.	Carbon dioxide (x)
3.	Ammonical nitrogen (x)	16.	Chlorine demand (x)
4.	Chloride (x)	17.	Iodine (x)
5.	Chlorine residual (x)	18.	Sulphite (x)
6.	Dissolved oxygen (x)	19.	Silica (x)
7.	Fluoride (x)	20.	Cyanide (x)
8.	Total hardness (x)	21.	Sulphide (x)
9.	Total kjehldal nitrogen (TKN) (x)		
10.	Nitrite nitrogen (x)		
11.	Nitrate nitrogen (x)		
12.	Phosphate (x)		
13.	Sulphate (x)		

(ii) Trace Metals [Please mark Yes(✓)/No (x)]

Note:- Instrument AAS is not available in the lab

S. No.	Parameter	S. No.	Parameter
1.	Boron (B) (x)	16.	Arsenic (As) (x)
2.	Cadmium (Cd) (x)	17.	Aluminium (Al) (x)
3.	Calcium (Ca) (x)	18.	Beryllium (Be) (x)
4.	Chromium (Cr) Total (x)	19.	Barium (Ba) (x)

5.	Chromium (Cr) Hexavalent (x)	20.	Lithium (Li) (x)
6.	Copper (Cu) (x)	21.	Manganese (Mn) (x)
7.	Iron (Fe) (x)	22.	Selenium (Se) (x)
8.	Lead (Pb) (x)	23.	Silver (Ag) (x)
9.	Magnesium (Mg)	24.	Strontium (Sr) (x)
10.	Mercury (Hg) (x)	25.	Tin (Sn) (x)
11.	Nickel (Ni) (x)	26.	Antimony (Sb) (x)
12.	Potassium (K) (x)	27.	Cobalt (Co) (x)
13.	Sodium (Na)	28.	Vanadium (V) (x)
14.	Sodium absorption ratio (SAR)		
15.	Zinc (Zn) (x)		

(C) Organics (General) and Trace Organics [Please mark Yes(✓)/No (x) and give details at Appendix J for Trace organics]

S. No.	Parameter	S. No.	Parameter
1.	Bio-chemical oxygen demand (BOD) (x)	6.	Total organic carbon (TOC) (x)
2.	Chemical oxygen demand (COD) (x)	7.	Adsorbable organic halide (AOX)
3.	Oil & Grease (x)	8.	Surfactants (x)
4.	Phenol (x)	9.	Tannin & lignin (x)
5.	Pesticide (each) (x)	10.	Poly-chlorinated biphenyl (PCB's) each (x)
	(i) Organo-chlorine (BHC, DDT, Aldrin, Endosulphan) (x)	11.	Polynuclear aromatic hydrocarbon (PAH) each (x)
	(ii) Organo nitrogen-phosphorous (Malathion, methyl parathion, Chloropyriphos) (x)	12.	Organic Carbon (in solid) (x)
		13.	Carbon/Nitrogen ratio (x)

D) Microbiological Tests [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Total Coliform (x)	5.	Total plate count (x)
2.	Faecal Coliform (x)	6.	Enterococcus (x)
3.	Faecal Streptococci (x)	37	Coliphage (x)
4.	E. Coli (x)		

E) Toxicological Tests [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Bioassay method for evaluation of toxicity using fish (90% survival of fish after 96 hrs in 100% effluent) (x)	1.	Bio-accumulation, bio magnification and bio-transformation studies (x)
		2.	Estimation of the effect at tissue level (x)
		3.	Measurement of toxicity using Daphnia or other organism (x)
		4.	Measurement of toxicity factor using zebra fish (dimensionless toxicity test (x)

F) Biological Tests [Please mark Yes(√)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Benthic organism identification and count (x)	5.	Saprobity Index (x)
2.	Macrophytic identification (x)	6.	Chlorophyll (x)
3.	Planktonic identification count (x)	7.	Primary productivity (x)
4.	Measurement of various diversity index (x)	8.	P/R Ratio (x)

G) Characterization of Hazardous Waste [Please mark Yes(✓)/No (x)]

S. No.	Parameter
1.	Preparation of Leachate (TCLP extract/water extract) (x)
2.	Corrosivity (x)
3.	Ignibility (Flash point) (x)
4.	Reactivity (x)
5.	Toxicity (x)
6.	Measurement of heavy metals/pesticides in the waste/leachate (x)

H) Soil/Sludge/Sediment and Solid Waste [Please mark Yes(✓)/No (x)]

S. No.	Parameter	S. No.	Parameter
1.	Boron (x)	16	Ammonia (x)
2.	Cation Exchange Capacity (CEC) (x)	17	Bicarbonate (x)
3.	Electrical Conductivity (EC) (x)	18	Calcium (x)
4.	Nitrogen available (x)	19	Calcium carbonate (x)
5.	Organic carbon/matter (chemical method) (x)	20	Chloride (x)
6.	pH (x)	21	Colour(x)
7.	Phosphorous (available) (x)	22	Exchangeable sodium percentage (ESP) (x)
8.	Phosphate (ortho) (x)	23	Gypsum requirement(x)
9.	Phosphate (total) (x)	24	H. Acid(x)
10.	Potassium (x)	25	Heavy metal(x)
11.	SAR in soil extract (x)	26	Magnesium(x)
12.	Sodium (x)	27	Mechanical soil analysis(x)
13.	Soil moisture (x)	28	Nitrate(x)

S. No.	Parameter	S. No.	Parameter
14.	TKN (x)	29	Nitrite(x)
15.	Calorific value (x)	30	PAH(x)
		31	Pesticide(x)
		32	Potash (available) (x)
		33	Sulphate(x)
		34	Sulphur(x)
		35	TOC(x)
		36	Total water soluble salt(x)
		37	Water holding capacity(x)

#### 4. LIST OF INSTRUMENTS FOR WATER, WASTEWATER & SOLID SAMPLES

##### a) LIST OF EQUIPMENT GENERAL ANALYSIS

[Note: Please mark Yes (√)/No(x)]

S. No.	EQUIPMENT	Yes/No	Nos. available**
<b>BASIC EQUIPMENTS</b>			
1.	Ice Box/s* (2)	(√)	3
2.	Filtration assembly* (1)	(√)	-
3.	Heating Mantle	(√)	-
4.	Stop watch	(√)	-
5.	Hot air oven* (2)	(√)	2
6.	Hot plate* (2)	(x)	-
7.	Muffle furnace* (1)	(x)	1
8.	Standard weight	(√)	-
9.	Water bath	(√)	-
10.	Thermometer/s* (4)	(√)	2
11.	Refrigerator/s big size* 300 litres or above (2)	(√)	-

S. No.	EQUIPMENT	Yes/No	Nos. available**
<b>SPECIFIC EQUIPMENTS</b>			
1.	Autoclave* (1)	(√)	1
2.	Bottom sampler	(x)	-
3.	BOD Incubator* (1)	(√)	1
4.	Centrifuge* (1)	(x)	1
5.	Aquarium for bioassay test* (4)	(x)	-
6.	COD Digester with aluminium heating blocks * (1)	(√)	1
7.	Colony Counter	(x)	-
8.	Depth Sampler	(x)	-
9.	Digester with condensers	(x)	-
10.	Digestion chamber* (1)	(x)	-
11.	Dissolved oxygen sampler	(x)	-
12.	Flocculator ( Jar testing apparatus)	(x)	-
13.	Flow meter	(x)	-
14.	Incubator for bacteriological test* (2)	(√)	2
15.	Laminar flow <sup>s</sup> (1)	(√)	1
16.	Magnetic Stirrer with hot plate* (2)	(x)	-
17.	Mechanical Shaker *(1)	(x)	-
18.	Microwave digester	(x)	-
19.	TKN Analyzer semi automatic with aluminum block digester	(x)	1
20.	Ultrasonic water bath	(√)	-
21.	Vacuum pump* (1)	(x)	-
22.	Water purification / distillation assembly* (1)	(√)	1
23.	Ekman Dredge	(x)	-
24.	Water sampler	(x)	-
25.	Oil & Grease sampler	(x)	-
26.	Water Testing kit	(x)	-
27.	Chloroscope for residual chlorine	(x)	-
28.	Any other equipment (please attach details on separate sheet)	(x)	

## (b) LIST OF INSTRUMENTS WATER/WASTE WATER ANALYSIS

S. No.	Name of instrument	Yes/No	Total Nos. **
<b>BASIC INSTRUMENTS</b>			
1.	Analytical Balance +* (1) 1 mg	(√)	2
2.	Conductivity Meter* (1)	(x)	-
3.	Dissolved oxygen meter	(x)	-
4.	pH Meter with combined glass electrode* (1)	(x)	-
5.	Turbidity meter* (1)	(x)	-
<b>SPECIFIC INSTRUMENTS</b>			
1.	Alpha/Beta Radioactivity Counter	(x)	-
2.	Atomic Absorption Spectrophotometer (Flame) with the following cathode lamps + (√ available HCL)* (1)	(x)	-
	(i) Aluminium	(ii) Antimony	
	(iii) Arsenic	(iv) Barellium	
	(v) Barium	(vi) Boron	
	(vii) Cadmium	(viii) Calcium	
	(ix) Chromium	(x) Copper	
	(xi) Iron	(xii) Lithium	
	(xiii) Lead	(xiv) Magnesium	
	(xv) Manganese	(xvi) Mercury	
	(xvii) Nickel	(xviii) Potassium	
	(xix) Selenium	(xx) Silver	
	(xxi) Sodium	(xxii) Strontium	
	(xxiii) Tin	(xxiv) Cobalt	
	(xxv) Vanadium	(xxvi) Zinc	
		(xxvii) Other, pl. specify	
3.	Atomic Absorption Spectrophotometer with Graphite Furnace and Hydride Generation System	(x)	-

4.	Organic Halogen Analyzer (AOX/TOX)	(x)	-
5.	Binocular Microscope	(x)	-
6.	Flame Photometer* (1)	(x)	-
7.	Gas Chromatograph with following detector*++ (1)	(x)	-
	<ul style="list-style-type: none"> <li>- ECD-NPD</li> <li>- FID-TID</li> <li>- FPD</li> <li>- Other detector</li> </ul>	(x)	-
8.	Gas Chromatograph with Mass Spectrometer (GC-MS)	(x)	-
9.	High Pressure Liquid Chromatograph (HPLC)	(x)	-
10.	Ion Chromatograph	(x)	-
11.	Inductively Coupled Plasma (ICP) Spectrometer	(x)	-
12.	Mercury Analyzer Digital* (1)	(x)	-
13.	Portable Analyzer Kit (DO, pH, Temp. Cond.)	(x)	-
14.	Precision Balance weighing up to 1 mg* (water / air)	(x)	-
15.	Rotary Evaporator* (1)	(x)	-
16.	Spectrophotometer (Visible)* or Ultraviolet & visible* (1)	(√)	1
17.	Stereo Microscope	(x)	-
18.	Total Organic Carbon Analyzer	(x)	-
19.	Any other instruments (Please enclose details on separate sheet)	(x)	-

## (c) LIST OF INSTRUMENTS FOR HAZARDOUS WASTE ANALYSIS

S. No.	Instruments	Nos. Available
1.	Bomb colorimeter	(x)
2.	Elemental analyzer	(x)
3.	Flash point apparatus	(x)
4.	Moisture content meter	(x)

## (b) LIST OF INSTRUMENTS WATER/WASTE WATER ANALYSIS

S. No.	Name of instrument	Yes/No	Total Nos. **
<b>BASIC INSTRUMENTS</b>			
1.	Analytical Balance ++ (1) 1 mg	(√)	2
2.	Conductivity Meter* (1)	(x)	-
3.	Dissolved oxygen meter	(x)	-
4.	pH Meter with combined glass electrode* (1)	(x)	-
5.	Turbidity meter* (1)	(x)	-
<b>SPECIFIC INSTRUMENTS</b>			
1.	Alpha/Beta Radioactivity Counter	(x)	-
2.	Atomic Absorption Spectrophotometer (Flame) with the following cathode lamps + (√ available HCL)* (1)	(x)	-
	(i) Aluminium	(ii) Antimony	
	(iii) Arsenic	(iv) Barium	
	(v) Barium	(vi) Boron	
	(vii) Cadmium	(viii) Calcium	
	(ix) Chromium	(x) Copper	
	(xi) Iron	(xii) Lithium	
	(xiii) Lead	(xiv) Magnesium	
	(xv) Manganese	(xvi) Mercury	
	(xvii) Nickel	(xviii) Potassium	
	(xix) Selenium	(xx) Silver	
	(xxi) Sodium	(xxii) Strontium	
	(xxiii) Tin	(xxiv) Cobalt	
	(xxv) Vanadium	(xxvi) Zinc	
		(xxvii) Other, pl. specify	
3.	Atomic Absorption Spectrophotometer with Graphite Furnace and Hydride Generation System	(x)	-

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5.	Rotary evaporator	(x)
6.	Toxicity characteristic leaching procedure (TCLP) extractor	(x)
7.	Toxic Gas analyzer	(x)
8.	X-ray fluorescence (XRF) Spectrometer	(x)
9.	Zero head space extractor (ZHE)	(x)
10	Any other equipment (please attach details on separate sheet)	(x)

(d) LIST OF MAINTENANCE CONTRACT STATUS OF IMPORTANT SOPHISTICATED INSTRUMENTS [Note: Please mark Yes (√)/No (x)]

S. No.	Name of the instrument	Repair job undertaken on Annual Maintenance contract / emergency call basis	Whether sufficient spares available
1.	AAS (Flame & Flameless)	(x)	(x)
2.	AOX	(x)	(x)
3.	Total Organic Carbon Analyzer	(x)	(x)
4.	Gas Chromatograph	(x)	(x)
5.	Water purification system	(√)	(√)
6.	Analytical balance	(√)	(√)
7.	Specification meter	(x)	(x)
8.	Mercury analyzer	(x)	(x)
9.	UV-Visible spectrophotometer	(√)	(√)
10.	Alpha/Beta Radioactivity Counter	(x)	(x)
11.	Any other equipment (please attach details on separate sheet)	(x)	(x)

## (e) REFERENCE MATERIAL (RMS) AND CERTIFIED REFERENCE MATERIAL (CRMS)

S. No.	Parameters	Availability of RMS/CRMS	
		(√/X)	Nos. of standards
1.	Trace Metals	(x)	-
2.	Organo-chlorine pesticides	(x)	-
3.	Organo-nitrogen phosphorous pesticides	(x)	-
4.	Polychlorinated Biphenyls (PCB's)	(x)	-
5.	Polycyclic aromatic hydrocarbon (PAH)	(x)	-
6.	Benzene, Ethylene, Toluene & Xylene	(x)	-
7.	Dioxins and Furans	(x)	-
8.	Any other (please attach details on separate sheet)	(x)	-

## f) LIST OF GLASS APPARATUS AND DISTILLATION ASSEMBLIES

[Note: Please mark Yes (√)/No (x)]

S. No.	Particulars	Yes or No	Total nos. available
1.	Fluoride distillation assembly	No	-
2.	Cyanide distillation assembly	No	-
3.	Ammonia distillation assembly	No	-
4.	Water distillation assembly	Yes	1
5.	Soxlet extraction assembly	No	-
6.	Arsenic estimation assembly	No	-
7.	Phenol distillation assembly	No	-
8.	Any other (please enclose details on separate sheet)	No	-

**(5) AIR QUALITY PARAMETERS**

Facilities available [Please mark Yes (√)/No (x)]

**A. Ambient Air / Fugitive Emissions**

S. No.	Group of parameter	Yes/No (√/x)	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Nitrogen dioxide as NO <sub>2</sub>	(√)	IS 5182 Part 6/Jacob and Hochheiser Method
2.	Sulphur dioxide (SO <sub>2</sub> )	(√)	IS 5182 Part 2/West and Gaeke Method
3.	Total suspended particulate matter	(x)	-
4.	Respirable suspended particulate matter (PM <sub>10</sub> )	(√)	IS 5182 Part 23/Gravimetric Method
(ii)	<b>Secondary Parameters</b>		
1.	Ammonia	(√)	Indophenol Method
2.	Carbon monoxide	(x)	-
3.	Chlorine	(x)	-
4.	Fluoride	(x)	-
5.	Non methane hydrocarbon	(x)	-
6.	Lead	(x)	-
7.	Methane	(x)	-
8.	Ozone	(x)	-
9.	Benzene Toluene Xylene (BTX)	(x)	-
10.	Polycyclic aromatic hydrocarbon (PAH) Benzo-a-pyrene & others	(x)	-
11.	PM <sub>2.5</sub>	(√)	IS 5182 part 24/Gravimetric Method
12.	Volatile Organics Carbon	(x)	-
13.	Any other (please attach details on separate sheet)	(x)	-

## B. Stack gases/source emission

S. No.	Group of parameter	Yes/No (√ / x)	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Particulate matter	(√)	IS11255 Part 01/CPCB
2.	Sulphur dioxide	(x)	IS11255 Part 02/CPCB
3.	Velocity & flow	(√)	IS11255 Part 01/CPCB
4.	Carbon dioxide	(x)	-
5.	Carbon monoxide	(x)	-
6.	Temperature	(√)	IS11255 Part 01/CPCB
7.	Oxygen	(x)	-
8.	Oxides of nitrogen	(x)	-
(ii)	<b>Secondary Parameters</b>		
1.	Acid mist	(x)	
2.	Ammonia	(x)	-
3.	Chlorine	(x)	-
4.	Fluoride (Particulate)	(x)	-
5.	Fluoride (Gaseous)	(x)	-
6.	Hydro-chloric acid	(x)	-
7.	Total Hydro carbon	(x)	-
8.	Hydrogen Sulphide	(x)	-
9.	Carbon disulphide	(x)	-
10.	Mercaptan	(x)	-
11	Any other (please attach details on separate sheet)	(x)	-

## C. Noise level

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Noise level measurement (20 to 140 dba)	(√)	By DB Meter
2.	Ambient Noise & Source specific noise	(√)	By DB Meter
3	Any other (please attach details on separate sheet)	(x)	

## D. Meteorological Monitoring

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>	(√)	CAAQMS Installed in surya kiran bhawan Dudhichua NCL Sector - B Distt Singrauli
1.	Ambient Temperature	(√)	
2.	Wind direction	(√)	
3.	Wind speed	(√)	
4.	Relative Humidity	(√)	
(ii)	<b>Secondary Parameters (Minimum required at least one parameter)</b>		
1.	Solar radiation	(x)	
2.	Rain fall	(√)	

Any other (please attach details on separate sheet)

## E. Vehicular Emission Monitoring :-

NOTE :- Instrument is not working. A demand letter has been written to the head quarter Bhopal to acquire the new equipment.

S. No.	Group of parameter	Yes/No	Adopted method
(i)	<i>Mandatory Parameters</i>		
1.	Carbon monoxide	√	COHC Analyser
2.	Smoke Density	√	Smoke Meter
3.	Hydrocarbon	√	COHC Analyser
(ii)	<b>Secondary Parameters (Optional)</b>		
1.	Oxides of Nitrogen	x	-

Any other (please attach details on separate sheet)

## 6. LIST OF INSTRUMENTS REQUIRED FOR AIR MONITORING

S. No.	Instrument	Yes/No	If yes, give Total Nos. **
1.	BTX analyzer (PID/FID detector)	x	-
2.	BTX calibrator	x	-
3.	Charcoal Tubes	x	-
4.	CO Analyzer (Non-dispersive Infrared principle)	x	-
5.	Detector Tubes with Pump of different pollutants (Please specify details)	x	-
6.	Dust analyzer (Beta Attenuation/TOEN)	x	-
7.	Exhaust CO/HC analyzer	x	-
8.	Flue gas analyzer	√	01
9.	Gas Chromatograph with Air sampling port, FID & PFPD detectors	x	-
10.	Handy sampler for gaseous monitoring* (2)	x	-
11.	High Volume sampler with flow controller (4)	x	-
12.	Low flow pump	x	-
13.	Meteorological sensors with mast (WS, WD, Temp., Humidity)* (1)	√	01
14.	Micro balance (Readability 1 µg)	x	-

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15.	Multi calibration system	x	-
16.	Multi channel recorder	x	-
17.	Multi calibration kit (portable)	x	-
18.	Noise level meter* (2)	√	01
19.	NO-NO <sub>2</sub> -Nox Analyzer (Chemiluminescence based)	x	-
20.	Ozone analyzer (Ultraviolet)	x	-
21.	Permeation tubes for calibration	x	-
22.	RSPM sampler with flow controller/brush less motor + calibration kit* (4)	√	08
23.	Smoke density meter	√	01
24.	SO <sub>2</sub> Analyzer (Pulsed Fluorescence based)	x	-
25.	Soap bubble meter	x	-
26.	Stack monitoring kit with High Temp. Probes* (2)	x	-
27.	Toddler Bags	x	-
28.	Wet gas meter	x	-
29.	Any other (please specify)	x	-

**(7) LIST OF INFRASTRUCTURAL EQUIPMENT/ITEMS FOR AIR ANALYSIS**

[Please mark Yes (√)/No (x)]

S. No.	Items	Yes/No	If yes, give Total Nos.**
1.	Air conditioner (split type)	Yes	04
2.	Air Conditioner (Window type)	Yes	01
3.	Breathing apparatus	No	00
4.	Cold room for sample storage	Yes	01
5.	Computer with printer	Yes	02
6.	Constant voltage transformer	No	01
7.	Face shield and helmet	Yes	05
8.	Gas mask	Yes	05
9.	Refrigerator (frost free, CFC free)	Yes	02
10.	Tool Kit (Electrical & Mechanical)	Yes	02

11.	Uninterrupted power supply (UPS) system	yes	02
12.	First aid box	Yes	02
13.	Trolley for sample transportation	Yes	02
14.	Fume Hood	No	-
15.	Exhaust System	No	-
16.	Fire Extinguisher	Yes	02
17.	Electricity Generator	Yes	01 (DG Set 100KVA)
18.	Gas Cylinder Trolleys	No	-
19.	Any other (please specify)	No	-

## (8) Budgetary information

SNo	Budget	[year 2022-23]	[year 2023-24]
1.	Sanctioned	-	-
2.	Expenditure	-	-

## (9) Manpower Information

SNo	Designation	Number of Posts in working	Remarks (Required staff)
1.	Chief Scientific Officer	Nil	-
2.	Senior Scientific Officer	Nil	-
3.	Chief Chemist	Nil	-
4.	Scientist	01	-
5.	Jr Scientist	Nil	02
6.	Chemist	01	02
7.	Sampler	02	02
8.	Laboratory assistant	Nil	-
9.	Laboratory attendant	Nil	03
10.	Research Fellows	-	-
11.	Field assistant	-	-
12.	NAMP Staff	02	01
13.	NCAP Staff	-	-
14.	Contractual Staff	-	01 (Data Entry Oprator)
15.	Others	-	01 (Sweeper)

Note: (if any other information)

Name of Place Singrauli

Name, Designation &amp; Signature of Laboratory In charge

DR RAHUL DWIVEDI

Scientist/Lab In charge

## ANNEXURE-5



मध्य प्रदेश प्रदूषण नियंत्रण बोर्ड  
पर्यावरण परिसर ई-5 अरेरा कालोनी, भोपाल



क्रमांक/53

/लेखा/प्रनिबो/2024

(0755 2464428, 2466191 Fax: (0755) 2463742 e-mail: itmppcb@rediffmail.com

भोपाल, दिनांक: 4/11/2024

प्रति,

केन्द्रीय प्रयोगशाला प्रभारी,  
केन्द्रीय प्रयोगशाला,  
भोपाल (म0प्र0)

विषय:- आपका पत्र क्रमांक-306/केन्द्रीय प्रयोगशाला/ भोपाल, दिनांक-15/12/2023 के अंतर्गत बिन्दु (3) अंतर्गत जानकारी।

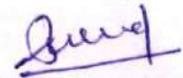
संदर्भ:- एन जी टी प्रकरण क्रमांक- 693/2023 में निर्णय।

उपरोक्त विषयागत वर्ष 2020-21 एवं 2021-22 के संबंध में वैज्ञानिक संवर्ग हेतु आय-व्यय संबंधी जानकारी इस प्रकार है।

	2020-21		2021-22	
	बजट प्रावधान रु. लाख में	वास्तविक व्यय रु. लाख में	बजट प्रावधान रु. लाख में	वास्तविक व्यय रु. लाख में
(I) प्रशासन/स्थापना व्यय (वैज्ञानिक संवर्ग हेतु)	3803.39	1525.32	4018.08	1473.67
(II) वैज्ञानिक/प्रयोगशाला परिचालन संबंधी व्यय (प्रयोगशाला संचालन, उपकरण क्रय-मरम्मत एवं अन्य संबंधी व्यय)	515.00	543.01	655.00	456.34

आय एवं प्राप्ति के स्रोत

1. 2020-21 में राज्य शासन अनुदान प्राप्त बजट राशि रु. 541.76 लाख है, जिसमें रु. 450.00 लाख प्रयोगशाला मानिटरिंग संबंधी कार्य हेतु है।
2. 2021-22 में राज्य शासन अनुदान प्राप्त बजट राशि रु. 503.00 लाख है, जिसमें रु. 390.00 लाख प्रयोगशाला मानिटरिंग संबंधी कार्य हेतु है।
3. बोर्ड के स्वयं के संसाधनों जिसमें जल वायु सम्मति एवं नवीनीकरण शुल्क, प्राधिकार शुल्क, मानिटरिंग शुल्क (जल, वायु, वाहन नमूना) जन सुनवाई हेतु राशि, बैंक ब्याज प्राप्त राशि, अन्य एवं विविध प्राप्तियां इत्यादि सम्मिलित है। जिसमें वर्ष 2020-21 एवं 2021-22 में क्रमशः रु. 11468.58 लाख एवं रु. 15,337.23 लाख प्राप्त हुए हैं।

  
(शरद कुमार शर्मा)  
वित्त अधिकारी (म.प्र. प्रनिबो)  
भोपाल, दिनांक:

पृ.क्र.

/लेखा/प्रनिबो/2024

प्रतिलिपि:-

1. कार्यपालन यंत्री (वित्त) प्रभारी की ओर सूचनार्थ।



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



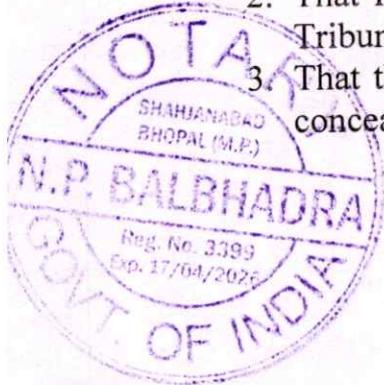
**IN THE MATTER OF:**

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

**AFFIDAVIT**

I, Alok Kumar Saxena, S/o Late Shri Devendra Saxena, Chief Chemist, MPPCB and Officer-in-Charge, office at E-5, Arera Colony, Paryavaran Parisar, Bhopal, Madhya Pradesh 462016 do hereby solemnly affirm on oath as under:

1. That I am Officer in Charge for Madhya Pradesh Pollution Control Board in the present matter, and am fully conversant with the facts of the case and hence competent to swear on this affidavit.
2. That I am filing a Reply in the aforementioned matter before the Hon'ble Tribunal the contents of which are true and correct and no material fact.
3. That the contents of the Reply are true and correct and no material fact is concealed or suppressed.



**DEPONENT**

डॉ. आलोक सक्सेना  
मुख्य रसायनज्ञ  
केन्द्रीय प्रयोगशाला  
म.प्र. प्रदूषण नियंत्रण बोर्ड, भोपाल

**VERIFICATION**

I the above-named deponent do hereby verify that the contents of the affidavit above are true and correct.

Signed and verified on this 15<sup>th</sup> Day of January 2023 at Bhopal (MP)

**IDENTIFIED BY ME**

SIGNATURE.....Kranjal  
NAME.....KRANJAL PANDEY, ADVOCATE  
ADDRESS.....F-3, VIDHYA VIHAR  
BHOPAL, (9340657120)

SOLEMNLY AFFIRMED BEFORE  
ME BY THE WITHIN NAMED

vi 15/01/2024 -  
**N. P. BALBHADRA**  
NOTARY-ADVOCATE  
SHAHJANABAD, BHOPAL (M.P.)

**DEPONENT**

डॉ. आलोक सक्सेना  
मुख्य रसायनज्ञ  
केन्द्रीय प्रयोगशाला  
म.प्र. प्रदूषण नियंत्रण बोर्ड, भोपाल

**VAKALATNAMA**  
[Rule 4(1) of the Rules framed under Advocates Act, 1961]  
**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"**

I/We/Appellant/Claimant/Petitioner or Defendant/Respondent/Non-Applicant named below do hereby appoint, engage, and authorize advocate(s) named below to appear, act and plead as aforesaid case proceedings which shall include application for restoration, setting aside of ex- party orders, corrections, modifications, review and recall of orders passed in these proceedings, in this court or any other court in which the same may be tried/ heard/proceeded and also in appellate. Revisional and executing court in respect of proceedings arising from this case/ proceedings as per agreed terms and conditions and authorize him/them to sign and file pleadings, appeals, cross objections, applications, affidavit or other documents as may be deemed necessary for the proper prosecution/defence of the case in all its stages and also agree to ratify and confirm act done by him/them as if done by me.

In witness whereof i/we do hereunto set my/our hand to the presents, the contents of which have been duly understood by me /us this..... day of .....2024.

PARTICULARS OF EACH PARTY EXECUTING VAKALATNAMA

Name & Fathers Name	Registered Address	E-Mail Add & Telephone (If any)	Status in case	Signature/ Thumb
Alok Kumar Saxena, S/o Late Shri Devendra Saxena, Chief Chemist, MPPCB	E-5, Arera Colony, Paryavaran Parisar, Bhopal, Madhya Pradesh 462016	0755- 2464428  aloksan13@ yahoo.com	Officer- in-Charge	

Accepted

डॉ. आलोक सक्सेना  
मुख्य रसायनज्ञ  
केन्द्रीय प्रयोगशाला  
भ.प्र. प्रदूषण नियंत्रण बोर्ड, भोपाल

Name & Enrollment. No.	Address (If any) E-Mail Add.	Telephone (If any)	Full Signature
RAGHAV SHARMA	raghav@srcoleg	852270664	
PRANJAL PANDEY MP 2881-2021		9340657120 advocatepranjalpandey@gmail.com	